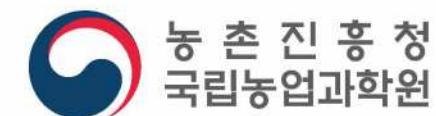
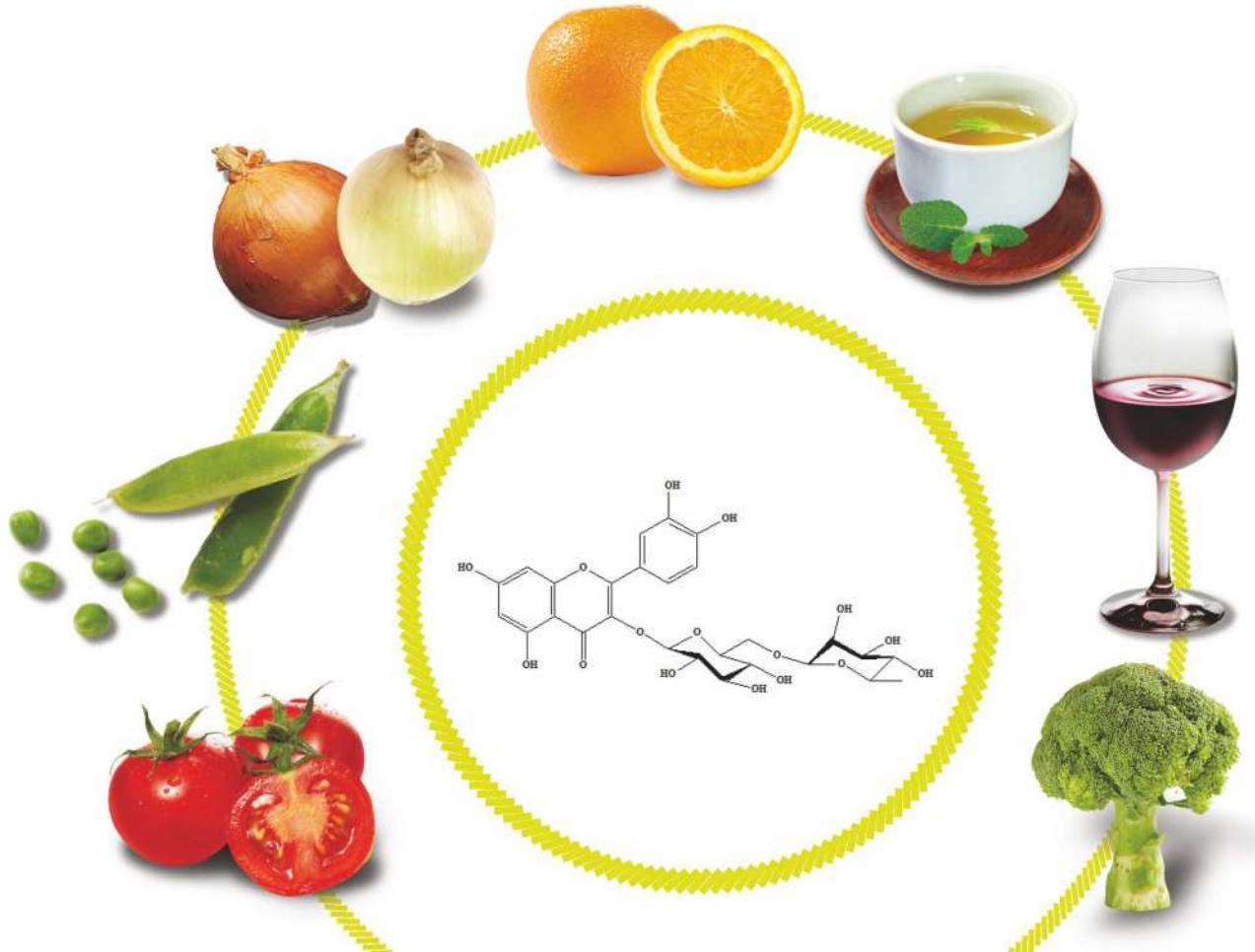


# 플라보노이드 Data Base 1.0

## I. 식품의 플라보노이드 함량

Flavonoids Content in Agro-foods

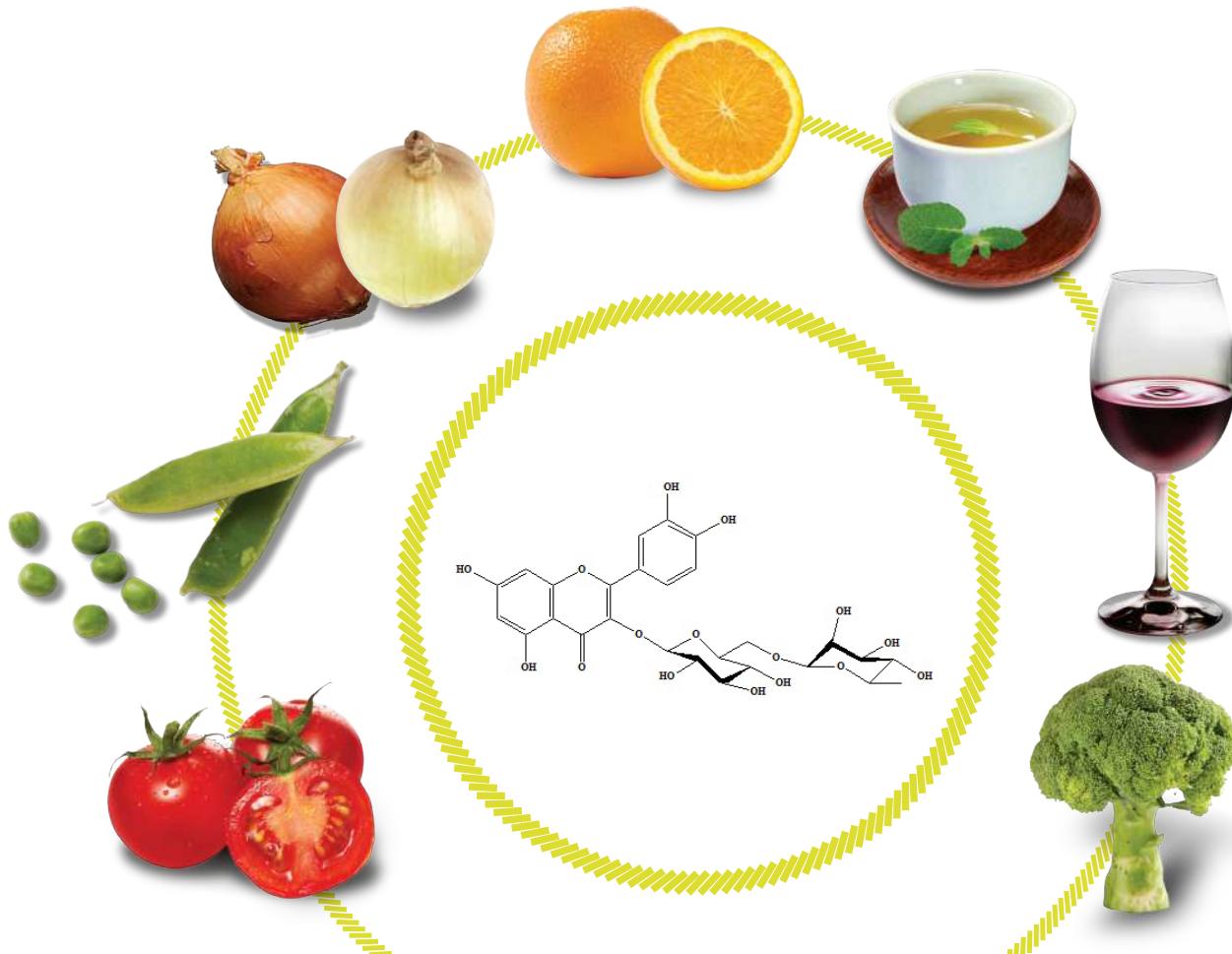


National Institute of Agricultural Sciences(NAS)  
Rural Development Administration(RDA)

# 플라보노이드 Data Base 1.0

## I . 식품의 플라보노이드 함량

Flavonoids Content in Agro-foods



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National Institute of Agricultural Sciences(NAS)  
Rural Development Administration(RDA)

# 플라보노이드 Data Base 1.0

플라보노이드(flavonoids)는 노란색을 의미하는 라틴어인 플라부스(flavus)에서 유래하였고 플라본(flavone)을 기본 구조로 갖는 식물성 색소로 잘 알려져 있으며, 최근에는 식품의 기능성분으로 많은 관심을 받고 있다. 플라보노이드는 분포범위가 광대하고 종류도 다양해서 생태학적 역할뿐만 아니라 식품학적으로도 중요한 화합물 군에 속한다.

플라보노이드는 화학 구조적으로 뼈대라고 할 수 있는 ‘비배당체(아글리콘/aglycone)’과 ‘당(sugar)’이 결합되어 있는 형태인 ‘배당체(glycoside)’로 주로 구성된다. 아글리콘의 종류나 결합되어 있는 당의 종류, 결합 형태에 따라서 수 천 또는 수 만 종의 플라보노이드 조합이 가능하며, 실제로 자연계에서 발견되는 플라보노이드의 종류는 수 천종에 달한다. 녹차의 카테킨(catechin), 콩에 많이 함유된 이소플라본(isoflavone) 외에도 양파의 퀴르세틴(quercetin) 그리고 베리류에 다량 함유된 안토시아닌(anthocyanin) 등이 우리가 잘 알고 있는 대표적인 플라보노이드 성분들이다.

식물의 2차 대사산물이기도 한 플라보노이드는 녹황색 채소와 과일 등 광합성을 하는 식물 대부분에 존재하기 때문에 채식을 주로 하는 동양인에게 있어 이 성분들의 기능 및 이용 가능성을 구명하는 것이 중요하다. 이외에도 플라보노이드 대사체의 생합성 경로 구명이나 관련 유전자 발현, 생물학적 전이인자 등 연구소재로서 생명공학기법에 의한 동·식물의 질병치료에 활용되고 있다. 플라보노이드가 심장질환 억제 또는 암 예방효과 등의 기능성으로 이목을 끌게 된 계기로 <<sup>1)</sup>French paradox> 보고서를 들 수 있다. 보고서 내용의 사실 여부를 떠나 동서양을 막론하고 플라보노이드가 우리의 식생활과 밀접한 관계에 있다는 것은 자명하다.

이와 같이 수 천종에 달하는 다양한 플라보노이드의 종류에 비해 아직 광합성이나 식물병리, 유전육종, 에너지대사 또는 저장 등의 분야에서 분자수준의 플라보노이드 역할에 대해서 밝혀진 부분이 많지 않아 식의약적 소재로서 발전 가능성이 기대되고 있다. 따라서 본 DB에 실려 있는 플라보노이드의 정량자료 3,200여건을 포함한 기타 분석정보가 식품의 기능성분 연구 및 응용의 기초자료로 식품의 기본 소재인 동·식물의 체내 대사경로 구명 그리고 생물학적 활성의 비밀을 이해하는데도 많은 도움이 되길 바란다.

1) 서양인들은 일반적으로 포화지방산이 많이 함유된 육류를 주식으로 섭취하는 하는 것으로 알려져 있으나, 특히 프랑스의 틀루스 지방 사람들의 심장병 발병률이 높지 않은 현상을 발견하였다. 세계보건기구(WHO)는 이러한 현상의 원인이 플라보노이드나 폐놀화합물 등이 함유된 와인을 많이 마시기 때문이라고 보고하였다.



그림 1. 플라보이드의 종류

## 가. 자료 현황

본 데이터베이스에서 사용된 시료의 개수는 자색양파를 포함해서 모두 268종이다. 배추 등 십자화과와 자몽 등 귤나무속을 포함하고 있으며, 곡류와 버섯 그리고 감자 등 서류는 플라보노이드가 거의 함유되어 있지 않으나 종류별로 1~2개의 크로마토그램을 수록하였다. 실제 내부표준물질을 기준으로 함량을 분석한 값 3,205개를 수록하였으며, 라이브러리에 수록된 플라보노이드 수는 1,683개로 이중 직접 동정하여 정량한 플라보노이드의 종류는 846개, 라이브러리에 인용한 참고 성분은 837개, 그리고 635개의 문헌을 참고하여 목록화 하였다. 각 시료로부터 동정 및 정량된 플라보노이드 중 중복된 성분을 제외한 개별 성분 수는 476종으로 확인되었다.

표 1. 플라보노이드 DB 자료현황(2016년 11월)

(단위 : 개)

식품 종수	<sup>1)</sup> 플라보노이드 개별 성분 수	<sup>2)</sup> 총 플라보노이드 수	라이브러리 수록된 플라보노이드		
			동정 및 정량된 플라보노이드	<sup>3)</sup> 기타 플라보노이드	참고문헌 수
268	476	3,205	846	837	635
				1,683	

<sup>1)</sup>라이브러리로부터 동정 및 정량된 플라보노이드에서 중복된 성분을 제외한 수

<sup>2)</sup>268종 식품으로부터 검출된 총 플라보노이드 수

<sup>3)</sup>참고문헌으로부터 작성된 라이브러리 중 동정 및 정량된 플라보노이드를 제외한 수



## 나. 자료 검증

본 자료의 바탕이 된 식품소재는 질병관리본부에서 목록화한 ‘한국인의 다소비·다빈도 식품’에 의거했다. 플라보노이드함유 소재 268종을 대상으로 동결건조방법으로 수분을 제거한 다음 분말화하여 1g을 동일한 방법으로 3반복 분석한 값을 표준편차와 함께 수록하였다. 따라서 본 자료의 모든 함량기준은 생(fresh) 시료가 아닌 건조한 시료를 기준으로 하고 있다. 본 책자에 수록된 정량·정성 분석결과는 고성능액체크로마토그라피(HPLC)와 질량분석기(mass spectroscopy)가 결합된 UPLC-DAD/QTOF-MS를 이용한 것이다. 정량의 기준이 되는 내부표준물질은 2가지를 사용하였는데 아이소플라본 정량용은 플루오레세인(fluorescein)로서 파장 254 nm에서 측정하였으며, 플라바논(flavanone), 플라바놀(flavanol) 그리고 칼콘(chalcone)은 파장 280 nm에서, 플라보놀(flavonol)과 플라본(flavone)은 파장 350 nm에서 각각 갈란진(galangin)을 사용하여 HPLC 피크 면적을 기준으로 계산되었다. 미지성분에 대한 동정은 크로마토그라피에서의 머무름 시간과 최소·최대흡광(spectrum) 패턴과 관련문헌을 참고하였으며 mass spectroscopy에서 생성되는 질량 이온 패턴 정보를 이용하여 동정을 완성하였다. 구조동정 및 정량에 이용된 장비는 Waters UPLC-TOF를 이용하였으며 positive mode에서 생성된 분자의 질량이온패턴(mass fragmentation ion pattern) 분석을 통하여 동정하였다. 결과는 한국표준연구원 전문가로부터 감수 받았으며, 모든 정량값은 내부표준물질에 대해서 1:1로 계산한 값으로 각 물질에 대한 반응지수는 고려하지 않았다.

표 2. 플라보노이드 대분류(Class)별 내부표준물질 및 대표파장

대분류(Class)	내부표준물질	대표파장(nm)
Flavonol	Galangin	350 nm
Flavone	Galangin	350 nm
Flavanone	Galangin	280 nm
Flavanol	Galangin	280 nm
Chalcone	Galangin	280 nm
Isoflavone	Fluorescein	254 nm

## 다. 플라보노이드 DB의 구성(1책 3권)

- 1권. 식품의 플라보노이드 함량
- 2권. 플라보노이드 라이브러리
- 3권. 크로마토그램 및 질량분석 정보

### 1. 식품의 플라보노이드 함량(1권)

각 농식품 시료별로 안토시아닌을 제외한 5가지 대분류, 즉 플라바논, 플라바놀, 플라본, 플라보놀 및 아이소플라본 등으로 정량값의 합계를 표시하였고, 아글리콘(aglycone)을 위주로 하는 소분류(kaempferol, quercetin 등)와 배당체, 플라보노이드 총량 및 관련 참고문현을 한 면에 표시하였다. 식품성분을 전공하지 않은 일반인도 쉽게 볼 수 있게 함량 위주로 구성한 것이 특징이다. 268개 시료의 3반복 평균값은 SIMCA(Soft Independent Modeling of Class Analogy)를 이용한 PLS-DA(Partial Least Squares-Discriminant Analysis; 다변량분석) score plot의 이미지 결과를 보여주었다.



표 3. 식품의 플라보노이드 함량(예시)

Flavonoids "Data Base 1.0"

## 고사리 Bracken

(mg/100g dry weight)

생것	데친것	데친후 침지	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)				
						고사리				
						생것	데친것	데친후침지		
플라바논류(Flavanones)	-	-	Flavonols	Kaempferol	kaempferol 3-O-galactoside (trifolin)	7.9	4.0	2.2		
	-	-			kaempferol 3-O-glucoside (astragalin)	183.7	94.7	58.5		
	-	-			kaempferol 3-O-(6"-O-malonyl)glucoside	2.9	1.0	0.3		
	-	-			kaempferol 7-O-rhamnoside-4'-O-glucoside	14.2	6.5	1.3		
	-	-			kaempferol 3-O-rutinoside (nicotiflorin)	121.6	81.8	38.2		
				Quercetin	Total kaempferol contents	330.3	188.0	100.5		
					quercetin 3-O-galactoside (hyperoside)	4.1	1.9	1.2		
					quercetin 3-O-glucoside (isoquercitrin)	35.7	18.8	12.9		
					quercetin 3-O-robinobioside	7.6	6.0	1.4		
					quercetin 3-O-rutinoside (rutin)	84.6	50.7	24.7		
총 플라보노이드(Total flavonoids)					Total quercetin contents	132.0	77.4	40.2		
462.3	265.5	140.7				462.3	265.5	140.7		

## 2. 플라보노이드 라이브러리(2권)

제2권은 라이브러리(library)이다. 즉 DB에 수록될 미지 물질을 동정하기 위하여 문헌조사에서 확인된 플라보노이드와 직접 동정한 플라보노이드 정보 모두를 목록화 한 것이다. 여기에 정량분석 결과 및 참고한 문헌정보와 함께 수록했다. 따라서 본 라이브러리는 특정 시료에 대해서 존재할 수 있는 플라보노이드의 종류가 대부분 목록화되어 있다고 볼 수 있다. 정량값이 입력된 자료는 본 연구팀이 직접 분석한 자료로서 공백으로 남겨진 부분은 해당 물질의 동정정보만을 참고문헌에서 인용하였으며, 정량정보는 삽입되지 않았다. 구성은 화합물이름, 대분류(class), 문자식, 문자량, 질량이온패턴, UV, 구조, 확인여부, 시료부위, 외형특징, 정량값 및 참고문헌 순이며 각 시료군을 묶어서 작성하였다. 예를 들어, 아래 표에 나와 있는 바와 같이 대추나무 시료는 뒷대추나무와 야생대추나무 등 3종류의 시료를 한데 묶어서 기재하였다.

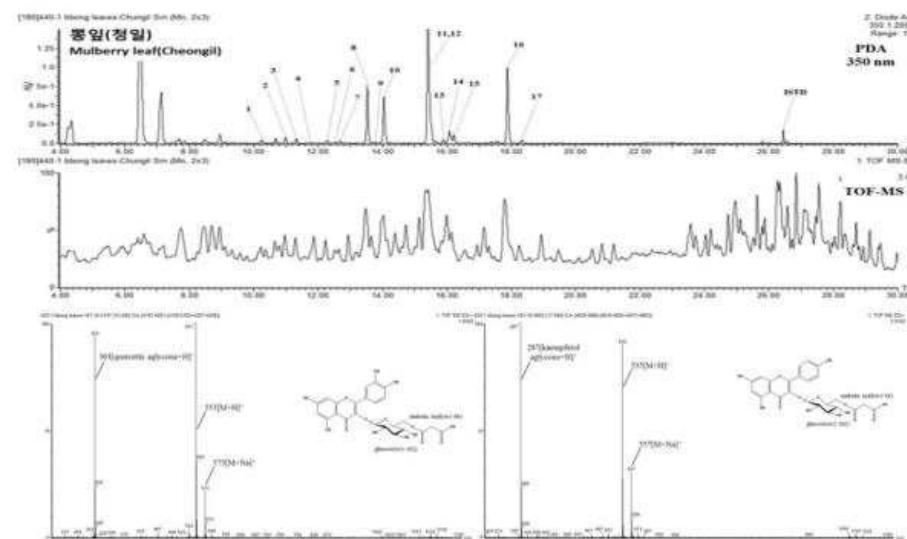
표 4. 플라보노이드 라이브러리(예시)

Chemical library of 29 flavonoids from <i>Zizyphus jujuba</i> L. (대추나무), <i>jujuba</i> var. <i>spinosa</i> (뒷대추나무), <i>spina-christi</i> (L) Wild(야생대추나무) based on literature sources [분석시료 139: 대추나무(열매, 생것) <sup>(1)</sup> , 140: 대추나무(열매, 건조) <sup>(2)</sup> , 141: 대추나무(잎) <sup>(3)</sup> ]													
No.	Compound names	Classes	Molecular formula	Molecular weight	Fragment ions pattern	UV spectrum pattern( $\lambda_{max}$ )	Chemical structure	States	Used parts	Plant resources	Features	mg/100g dry weight	References
1	quercetin 3-O-glucoside (isoquercitrin) <sup>a,b,c</sup>	Flavonols	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464	487[M+Na] <sup>+</sup> , 465[M+H] <sup>+</sup> , 463[M-H] <sup>-</sup> , 303[M+H-Glu] <sup>+</sup> , 301[M-H-Glu] <sup>-</sup>	11 <sup>b</sup> 255,355		Confirmed (NMR, MS)	Fruits <sup>b</sup>	<i>spina-christi</i> <sup>b</sup>	Yellowish amorphous powder	0.2 ± 0.0 <sup>(1)</sup> 0.1 ± 0.0 <sup>(2)</sup> 40.4 ± 0.8 <sup>(3)</sup>	9
2	quercetin 3-O-galactoside (hyperoside)	Flavonols	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464	487[M+Na] <sup>+</sup> , 465[M+H] <sup>+</sup> , 463[M-H] <sup>-</sup> , 303[M+H-Gal] <sup>+</sup> , 301[M-H-Gal] <sup>-</sup>	11 <sup>b</sup> 255,355 13 <sup>b</sup> 264,354 18 <sup>b</sup> 254,354 →80%EtOH <sup>3,d</sup>		Confirmed (NMR, MS)	Fruits <sup>a,b,c</sup>	<i>jujuba</i> <sup>a</sup> <i>spina-christi</i> <sup>b</sup> <i>spinosa</i> <sup>c</sup>	Yellowish amorphous powder		2, 3, 9



### 3. 크로마토그램 및 질량분석 정보(3권)

제3권은 크로마토그램을 포함한 분석정보로서 본 분석결과를 이용해서 지표물질이나 유효물질 등의 기준물질로 활용할 수 있도록 전문가용으로 만들었다. 먼저 분석한 시료의 전체 268개의 크로마토그램과 TIC(total ion current)를 순서대로 수록하고 그 중 각 시료군의 대표시료 84종에 대해서 피크(peak)별로 미지 플라보노이드의 동정 자료를 실었다. 한 차례 고상추출(SPE, solid phase extraction)을 하여 플라보노이드를 분리한 크로마토그램과 질량분석정보를 포함해서 물질별 최소·최대흡광 경향을 나타내는 스펙트럼을 한 면에 표시하였다. 따라서 제시된 크로마토그램상에서 플라보노이드의 위치는 물론 내부표준물질의 위치와 일부 동정되지 않은 폐놀화합물 피크를 포함한다. 정량의 기준인 HPLC 크로마토그램을 위에, 그리고 질량분석정보 TIC 그림을 아래에 배치하여 같은 머무름 시간(retention time)에서 크로마토그램과 TIC를 동시에 비교할 수 있게 하였으며 각 물질의 최대흡광 및 구조동정에 사용된 질량이온패턴(mass fragmentation ion pattern)을 그림으로 나타냈다.



플라보노이드 분리 및 질량단편이온 패턴



UPLC-DAD/QTOF-MS 분석

그림 2. 분석순서

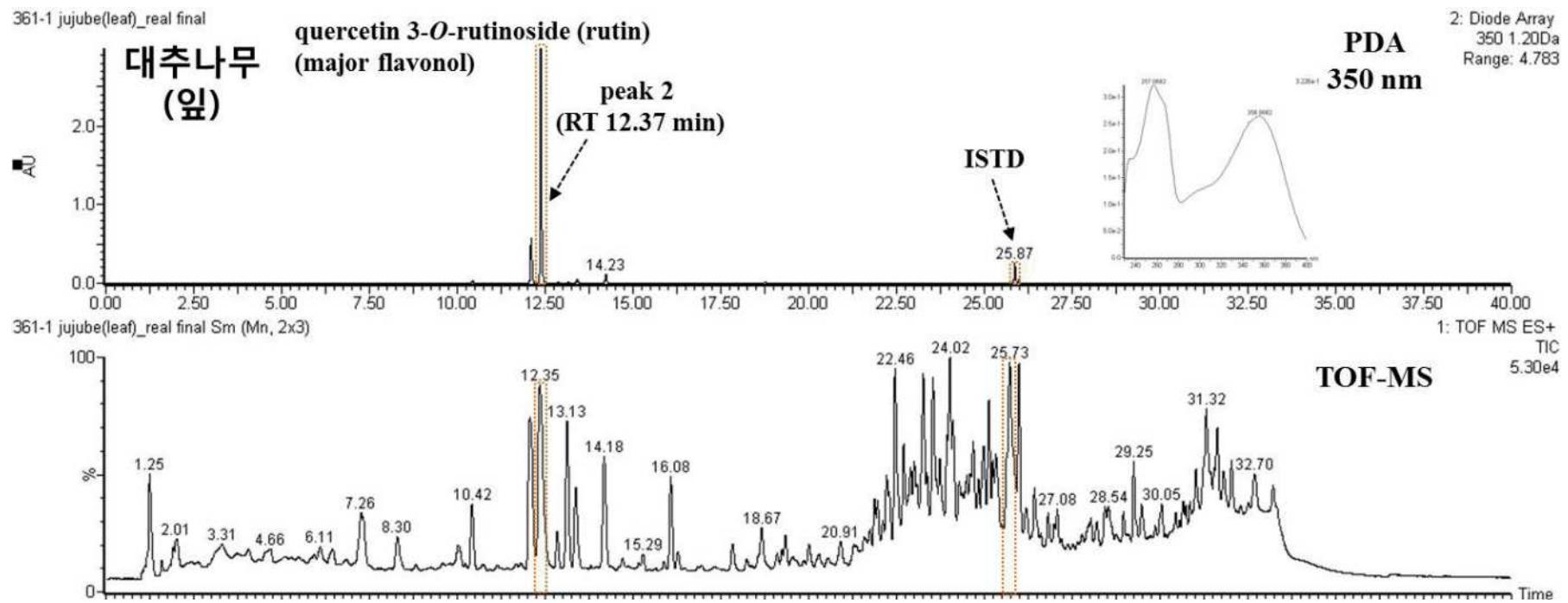


그림 3. 대추나무의 주요성분(peak 2)의 크로마토그램

## 라. 플라보노이드 아글리콘(Aglycone, 비배당체) 61종

표 5. 플라보노이드 아글리콘 종류

Classes	Aglycones
<b>Flavanols</b>	Catechin, Epicatechin, Epigallocatechin
<b>Flavanones</b>	5,7-Dihydroxy-4'-methoxyflavanone, 5,7,4'-Trihydroxy-3,6,3'-trimethoxyflavone, 3,5,7,4'-Tetrahydroxyflavone, 5,7,4'-Trihydroxy-3-methoxyflavone, Eriodictyol, Hesperetin, Isosakuranetin, Naringenin
<b>Flavones</b>	2'-Hydroxyluteolin, Quercetogetin, 7,3',4'-Trihydroxyisoflavone, 7,4'-Dihydroxy-3'-methoxyisoflavone, 5,3',4'-Trihydroxy-3-methoxy-6:7-methylenedioxyflavone, 5,4'-Dihydroxy-3,3'-dimethoxy-6:7-methylenedioxyflavone, Sinensetin, Tetra- <i>o</i> -methylscutellarein, Nobiletin, Tangeretin, Isosinensetin, Tetra- <i>o</i> -methylsoscotellarein, 6-Hydroxyluteolin, Apigenin, Chrysoeriol, Diosmetin, Hispidulin, Jaceidin, Luteolin, Nepetin, Puletin, Scutellarein, Spinacetin, Spinatoside, Tricin
<b>Flavonols</b>	Dihydroisorhamnetin, Isorhamnetin, Isorhamnetin 3-methyl ether, Kaempferol, Kaempferol 3-methyl ether, Laricitrin, Myricetin, Quercetin, Quercetin 3-methyl ether, Rhamnetin, Syringetin
<b>Isoflavones</b>	Isomucronulatol, Methylnissolin, 3'-Hydroxydaidzein, 3'-Methoxydaidzein, Biochanin A, Calcosin, Daidzein, Formononetin, Genistein, Glycitein, Odoratin
<b>Xanthones</b>	Xanthone
<b>Chalcones</b>	Phloretin, Naringenin chalcone



## 마. 플라보노이드 대표물질의 화학구조

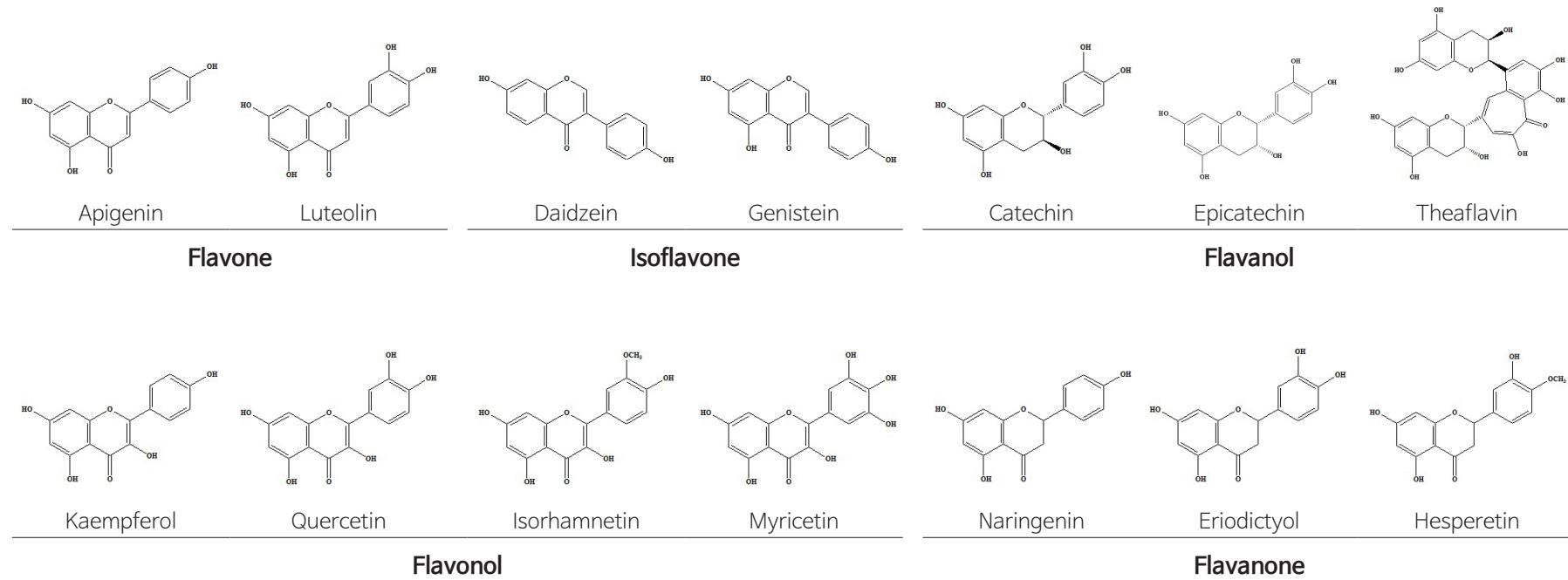


그림 4. 플라보노이드 종류별 화학구조

## 바. DB 작성 및 방법

본 DB에 수록된 자료는 정량값과 구조동정 결과다. 정량값은 플라보노이드를 분리, 질량분석 정보를 이용하여 구조를 동정하고 고성능액체크로마토그라피(HPLC)의 피크면적을 기준으로 정량한 값으로, 실제 분석값은 없으나 문헌에서만 확인된 정보는 빈칸으로 남겨 두었다. 카테킨과 테아플라빈류를 제외한 대부분의 플라보노이드는 배당체 형태로 존재해 내부표준물질을 기준으로 반응지수(conversion factor)를 고려하지 않고 비례적으로 계산하였다. 따라서 본 DB에 실린 모든 자료는 동일한 내부표준물질에 대한 기준을 적용하였다. 3반복으로 분석한 자료의 평균값은 건조 시료를 기준으로 mg/100g 단위로 표시하였으며 표준편차를 함께 제시하였다. 콩(두류)은 대풍, 대원, 선유, 청자3호, 약콩, 흑태 등의 품종을 사용하였고 녹두, 완두 및 작두콩도 시료로 포함하였으며 대원 품종의 콩으로 만든 메주, 된장, 고추장 시료를 사용하여 분석하였다. 녹차나 홍차 역시 가공단계별로 플라바놀의 함량을 정량하였으며 감자나 고구마, 버섯 등과 같이 플라보노이드가 거의 함유되지 않은 시료도 분석 크로마토그램을 포함하였다. 따라서 HPLC 피크로 나타난 모든 플라보노이드 배당체 및 아글리콘(비배당체)을 흡광도(그림3) 범위와 플라보노이드의 기본구조라고 할 수 있는 아글리콘 61개(표 5)에 포함된 물질을 플라보노이드로 규정하였다. 플라보노이드 라이브러리에 기재된 함량 수치는 내부표준물질을 기준으로 직접 정량 분석한 값이다.

플라보노이드 함량은 시료에 따라서 뿐만 아니라 부위에 따라서도 차이가 있는데, 특히 무(radish) 경우에는 뿌리라고 할지라도 지상부에 가까운 부분과 지하 쪽으로 깊은 부분의 함량 차이가 크고, 그 외에도 양파 등 거의 모든 시료가 부위별 큰 차이를 나타냈다. 또한 껍질과 속을 비교했을 때에도 귤나무속의 경우에는 껍질부분에 많았으며, 대추도 열매보다도 잎에 상당한 양의 플라보노이드 함량이 확인되었다. 플라보노이드 함량은 환경스트레스와 관련이 있는 것으로 알려져 있는데 자외선이나 해충, 기후 또는 병(病)적 요인에 기인한다고 한다(Dixon and Palva, 1995; Winkel-Shirley, 2002). 이밖에도 품종이나 재배조건, 농경방법, 가공, 저장조건 또는 분석시 전처리 방법 등에서도 영향을 받는 것으로 알려졌다(Amiot et al., 1995; Hakkinen et al., 2000; Patil et al., 1995; van der Sluis et al., 2001). 자료의 사용자들은 같은 식품명이라 할지라도 조리가 된 식품인지 아니면 원재료인지 주의·확인할 필요가 있다.



# Data Base of Flavonoids 1.0

Flavonoid is a Latin word that originated from the 'flavus', meaning 'yellow'. It is a well-known plant pigment with the basic structure of flavones and has received much interest recently as a functional ingredient in food. Flavonoids have an extensive and diverse distribution range, thus they are considered as ecologically and nutritionally important compounds.

Flavonoids mostly exist as glycosides, the combined form of sugar and aglycone that are foundational in chemical structures. Tens of thousands of flavonoid combinations are possible depending on the types of aglycone and glucose used; thousands of flavonoids can be found in nature. Nutritionally important ingredients, such as catechins in green tea, isoflavones in beans, quercetins in onions, and anthocyanins in berries, have the chemical structure of flavonoids.

Since flavonoids are secondary metabolites that exist in most photosynthetic plants including vegetables and fruits, it is very important to humans who use them as staple food. Particularly, it is essential for Asians, who eat vegetables as a main source of their diet, to determine the functions of flavonoids that have significant possible uses. In addition, flavonoids are used to determine the biosynthetic route of metabolites, manifestation of related genes, and biologically transposable elements and to treat illnesses of animals and plants. The function of flavonoids in the inhibition of heart diseases and cancer prevention received much public attention because of the <sup>1)</sup>French Paradox Report. Whether or not the contents of the report are true, it is evident that flavonoids are closely related to diet regardless of Western and Eastern cultures.

Since there is a myriad of flavonoid types whose functions are unknown at the molecular levels of photosynthesis, phytopathology, genetic breeding, energy metabolism, and storage, its possibilities in the use and development of medicinal food products are highly expected. We hope that the information including the quantitative data of 3,205 flavonoids in this DB can be used as the basic data

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1) Generally among the Westerners who eat food that includes saturated fatty acid such as meats, the rate of heart disease for French people, especially Toulouse people is not high. WHO reported this phenomenon is caused by the fact that they drink lots of wines that include flavonoid or phenolic compounds.

for the study and application of functional food ingredients to contribute to food industry development, understanding of internal metabolic pathways, and discovery of the secrets of biological vitality.

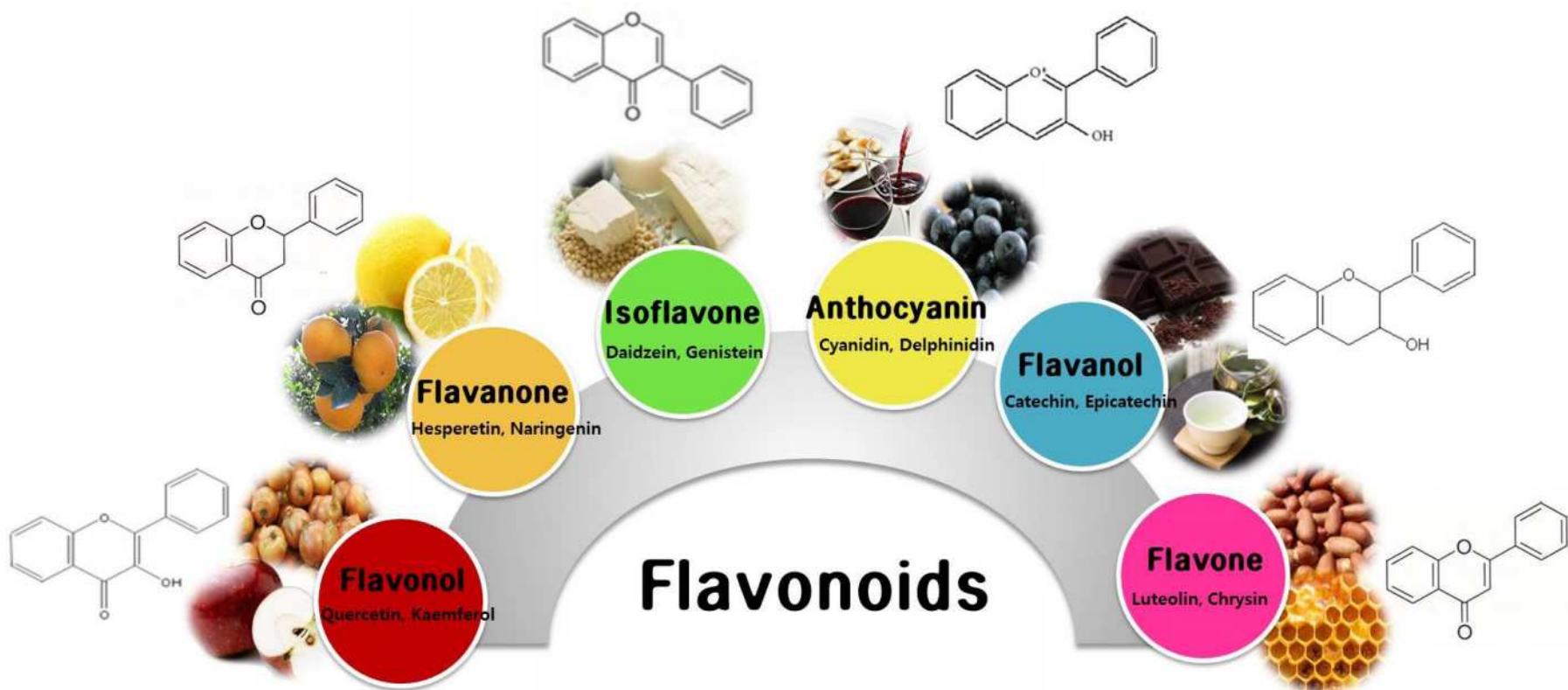


Figure 1. Flavonoid basic structures and types



## A. Data Status

In total, 268 kinds of Agro-food samples were used for this database including purple onions. The cruciferous vegetables, including cabbage and Citrus such as grapefruits, are included. Also, even though cereal crops, mushrooms and root and tuber crops such as potatoes rarely include flavonoids, 1~2 chromatograms are contained for each type. It included 3,205 quantitative values on a real standard substances basis and there are 1,683 kinds of flavonoids among those, 846 kinds of flavonoids that are personally identified and quantitated, 837 kinds of reference ingredients which are quoted into the library and literature of 635 are referred and listed. 476 Kinds of de-duplicated ingredients identified and quantified from Agro-food samples.

Table 1. Data status of flavonoids (November 2016)

Number of Food Types	<sup>1)</sup> Individual Flavonoids	<sup>2)</sup> Total Contents of Analyzed Flavonoid	Flavonoid Library		
			Identified/Quantitated Flavonoid Types	<sup>3)</sup> Other Flavonoids	Number Referenced in Literature
268	476	3,205	846	837	635
				1,683	

<sup>1)</sup>Number of de-duplicated ingredients of 'Identified/Quantified Flavonoid Types'

<sup>2)</sup>Number of total flavonoids analyzed from 268 of Agro-food samples

<sup>3)</sup>The number of ingredients excluded from 'Identified/Quantified Flavonoid Types' in the library

## B. Data Validation

The plant material that this data is based on pertains to the “Frequently Consumed Agricultural Products for Korean” listed in the Korea Center for Disease Control and Prevention. By converting 268 types of material containing flavonoids to powder by removing moisture using the freeze-drying method, the standard deviation of 3 replicates of the analysis value of 1g analyzed by the same method were included. Therefore it is the dry weight and not the living weight that is significant for all assay criteria of this data. The qualitative and quantitative analysis results contained in this publication were obtained using UPLC-DAD/QTOF-MS combined with HPLC and mass spectroscopy. 2 Types of quantitative specification internal standard materials were used, isoflavone quantitation for fluorescein was measured at a wavelength of 254 nm, and flavanones, flavanols, chalcones and flavonols, flavones were calculated based on HPLC peak areas using galangin at a wavelength of 280, 350 nm, respectively. Identification of unknown ingredients was completed by using the mass ion pattern information produced in mass spectroscopy when referring to chromatographic retention time and minimum and maximum absorption (spectrum) pattern and related literature. The structure identification was completed through mass fragmentation patterns of the molecules produced in the positive mode when using the structure identification and quantitation equipment Waters UPLC-TOF. The result is reviewed by an expert of KRISS, and all the quantitative values are measured values of 1:1 relative to the internal standard substance as a standard of dry value and a reaction index for each substance is not considered.

Table 2. Internal standard materials and wavelength by class

Classes	Internal Standard Materials	Wavelength (nm)
Flavonol	Galangin	350 nm
Flavone	Galangin	350 nm
Flavanone	Galangin	280 nm
Flavanol	Galangin	280 nm
Chalcone	Galangin	280 nm
Isoflavone	Fluorescein	254 nm



## C. Composition of Flavonoid DB (1 Publication 3 Volumes)

Volume 1. Flavonoids in Agro-foods

Volume 2. Flavonoids Library

Volume 3. Chromatogram and Mass Spectrometric Data

### 1. Volume 1 (Flavonoids in Agro-foods)

The DB of Flavonoids originating from Agro-food resource is composed of 3 volumes. The first volume starts by describing this Flavonoid DB in Korean and English. The background and introduction to the making of this Flavonoid DB, materials and method, classification, analytical methods such as separation and structural identification are briefly introduced. Also, the sum of quantitative values are marked as a large category with 5 kinds except anthocyanin, in other words, flavanones, flavanols, flavones, flavonols and isoflavones, for certain samples. Also, small categories (kaempferol, quercetin and more) mainly containing aglycone, glycoside, total flavonoid value and related reference are marked in one page. It is a mark that denotes that the composition is mainly pertaining to content so that the general public who didn't major in food can easily understand. The triple repeated mean value of 268 samples includes the result of PLS-DA (Partial Least Squares-Discriminant Analysis) score plot using SIMCA (Soft Independent Modeling of Class Analogy).

Table 3. Example of flavonoids in Agro-foods (sample name: Bracken)

Flavonoids "Data Base 1.0"

**고사리** Bracken

(mg/100g dry weight)

생것	데친것	데친후 침지	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
						고사리		
						생것	데친것	데친후침지
플라바노류(Flavanones)			Flavonols	Kaempferol	kaempferol 3-O-galactoside (trifolin)	7.9	4.0	2.2
					kaempferol 3-O-glucoside (astragalin)	183.7	94.7	58.5
					kaempferol 3-O-(6"-O-malonyl)glucoside	2.9	1.0	0.3
					kaempferol 7-O-rhamnoside-4'-O-glucoside	14.2	6.5	1.3
					kaempferol 3-O-rutinoside (nicotiflorin)	121.6	81.8	38.2
				Quercetin	Total kaempferol contents	330.3	188.0	100.5
					quercetin 3-O-galactoside (hyperoside)	4.1	1.9	1.2
					quercetin 3-O-glucoside (isoquercitrin)	35.7	18.8	12.9
					quercetin 3-O-robinobioside	7.6	6.0	1.4
					quercetin 3-O-rutinoside (rutin)	84.6	50.7	24.7
플라보놀류(Flavonols)					Total quercetin contents	132.0	77.4	40.2
					462.3   265.5   140.7			
					이소플라본류(Isoflavones)	-   -   -		
					총 플라보노이드(Total flavonoids)	462.3   265.5   140.7		



## 2. Volume 2 (Flavonoids Library)

Volume 2 is the library. In other words, all flavonoids are checked in literature research to identify unknown substances which will be contained in the DB and actual identified flavonoid information is listed. Also, referenced literature information of quantitative analysis results is contained. Therefore, most kinds of flavonoids that can exist for certain samples are listed. Input data of quantitative value is data that the research team personally analyzed and the blank value is quoted from reference literature because only identification information is referenced, not the quantitative information. The index structure is in the order of compound names, classes, molecular formula, molecular weight, mass ion pattern, UV, structure, verification, sampling area, appearance, quantitative value and reference literature. However, certain sections including cruciferous is inversely reported for convenience and each sample class is reported in one group. For example, in case of jujube (*Zizyphus jujube* L.), 3 kinds of samples including *spinosa*, *spina-christi* and more are reported together in the table below.

Table 4. Example of chemical library of flavonoids

Chemical library of 29 flavonoids from <i>Zizyphus jujuba</i> L. (대추나무), <i>jujuba</i> var. <i>spinosa</i> ( <i>윗대추나무</i> ), <i>spina-christi</i> (L) Wild( <i>야생대추나무</i> ) based on literature sources [분석시료 139: 대추나무(열매, 생것) <sup>(1)</sup> , 140: 대추나무(열매, 건조) <sup>(2)</sup> , 141: 대추나무(잎) <sup>(3)</sup> ]													
No.	Compound names	Classes	Molecular formula	Molecular weight	Fragment ions pattern	UV spectrum pattern( $\lambda_{max}$ )	Chemical structure	States	Used parts	Plant resources	Features	mg/100g dry weight	References
1	quercetin 3-O-glucoside (isoquercitrin) <sup>a,f</sup>	Flavonols	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464	487[M+Na] <sup>+</sup> , 465[M+H] <sup>+</sup> , 463[M-H] <sup>-</sup> , 303[M+H-Glu] <sup>+</sup> , 301[M-H-Glu] <sup>-</sup>	11255,355		Confirmed (NMR, MS)	Fruits <sup>b</sup>	<i>spina-christi</i> <sup>b</sup>	Yellowish amorphous powder	0.2 ± 0.0 <sup>(1)</sup> 0.1 ± 0.0 <sup>(2)</sup> 40.4 ± 0.8 <sup>(3)</sup>	9
2	quercetin 3-O-galactoside (hyperoside)	Flavonols	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464	487[M+Na] <sup>+</sup> , 465[M+H] <sup>+</sup> , 463[M-H] <sup>-</sup> , 303[M+H-Gal] <sup>+</sup> , 301[M-H-Gal] <sup>-</sup>	11255,355 13254,354 18254,354 →80%EtOH <sup>b,c</sup>		Confirmed (NMR, MS)	Fruits <sup>b,c</sup>	<i>jujuba</i> <sup>a</sup> <i>spina-christi</i> <sup>b</sup> <i>spinosa</i> <sup>c</sup>	Yellowish amorphous powder		2, 3, 9

### 3. Volume 3 (Chromatogram and Mass Spectrometric Data)

Volume 3 is analytical information that includes chromatograms and is made for professionals to be used as a standard substance for index substances or effective substances by using this analysis data. First, chromatogram and TIC (total ion current) of all 268 analysis samples is contained in order and unknown flavonoid identification data by peak for representative 84 kinds of samples among them is included. For analysis level, separated flavonoid chromatograms after SPE (solid phase extraction) and spectrum which shows a minimum and maximum trend per substance including mass analysis information are marked in one page. Therefore, a location of flavonoids in chromatograph, a location of internal standard substance and other partially unidentified phenol compound peak are included. On the page, quantitative standard HPLC chromatogram placed on top, and TIC picture of mass analysis information below to compare chromatogram and TIC at the same retention time. Also, fragmentation ion pattern used in maximum absorption and structure identification on each substance is shown as a picture.



Flavonoids "Data Base 1.0"



'Agro-food  
resources'(cleaning)



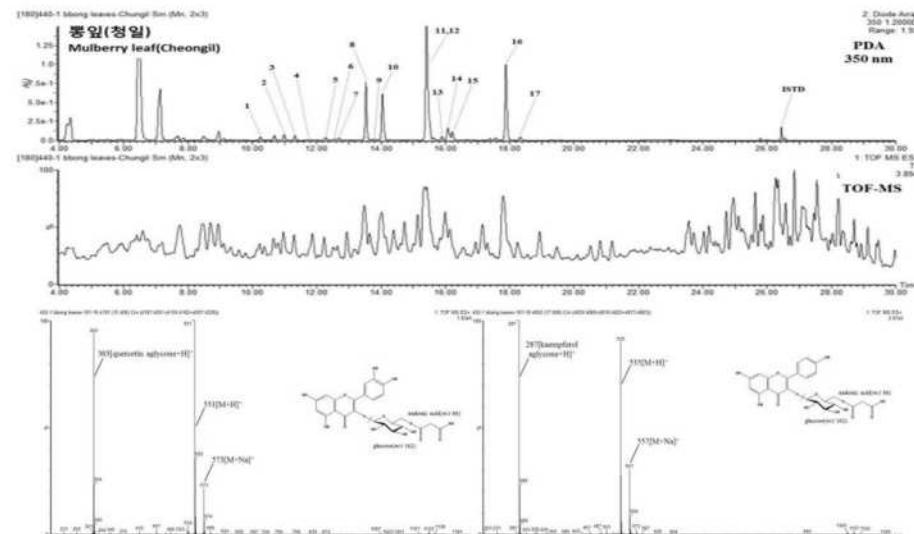
Lyophilization



Solvent extraction



Crude extracts



Flavonoids isolation and MS fragment ion patterns



UPLC-DAD/QTOF-MS  
analysis

Figure 2. Analytical process in flavonoids

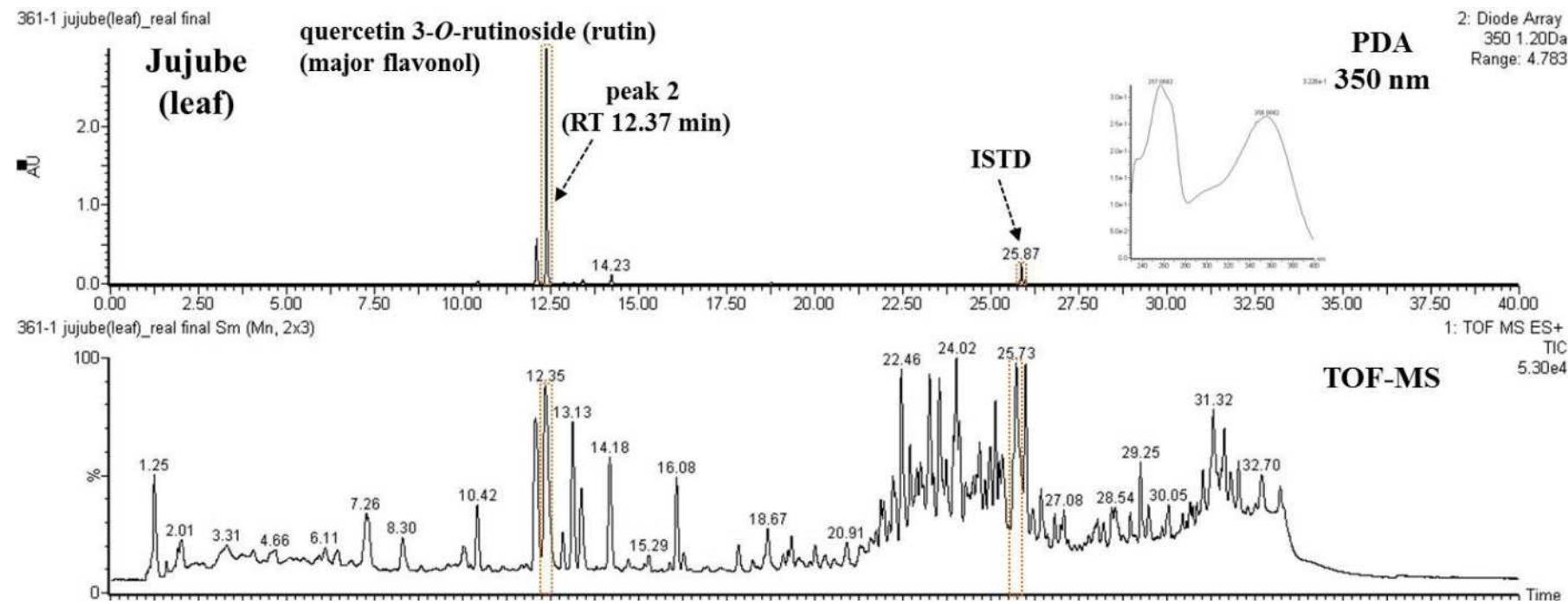


Figure 3. Chromatogram of major flavonoid (peak 2) in jujube samples



## D. Basic Structure of 61 Types of Flavonoid Aglycone

Table 5. Aglycone types of flavonoids

Classes	Aglycones
<b>Flavanols</b>	Catechin, Epicatechin, Epigallocatechin
<b>Flavanones</b>	5,7-Dihydroxy-4'-methoxyflavanone, 5,7,4'-Trihydroxy-3,6,3'-trimethoxyflavone, 3,5,7,4'-Tetrahydroxyflavone, 5,7,4'-Trihydroxy-3-methoxyflavone, Eriodictyol, Hesperetin, Isosakuranetin, Naringenin
<b>Flavones</b>	2'-Hydroxyluteolin, Quercetogetin, 7,3',4'-Trihydroxyisoflavone, 7,4'-Dihydroxy-3'-methoxyisoflavone, 5,3',4'-Trihydroxy-3-methoxy-6:7-methylenedioxyflavone, 5,4'-Dihydroxy-3,3'-dimethoxy-6:7-methylenedioxyflavone, Sinensetin, Tetra- <i>o</i> -methylscutellarein, Nobiletin, Tangeretin, Isosinensetin, Tetra- <i>o</i> -methylsoscotellarein, 6-Hydroxyluteolin, Apigenin, Chrysoeriol, Diosmetin, Hispidulin, Jaceidin, Luteolin, Nepetin, Puletin, Scutellarein, Spinacetin, Spinatoside, Tricin
<b>Flavonols</b>	Dihydroisorhamnetin, Isorhamnetin, Isorhamnetin 3-methyl ether, Kaempferol, Kaempferol 3-methyl ether, Laricitrin, Myricetin, Quercetin, Quercetin 3-methyl ether, Rhamnetin, Syringetin
<b>Isoflavones</b>	Isomucronulatol, Methylnissolin, 3'-Hydroxydaidzein, 3'-Methoxydaidzein, Biochanin A, Calcosin, Daidzein, Formononetin, Genistein, Glycitein, Odoratin
<b>Xanthones</b>	Xanthone
<b>Chalcones</b>	Phloretin, Naringenin chalcone

## E. Representative flavonoid structures

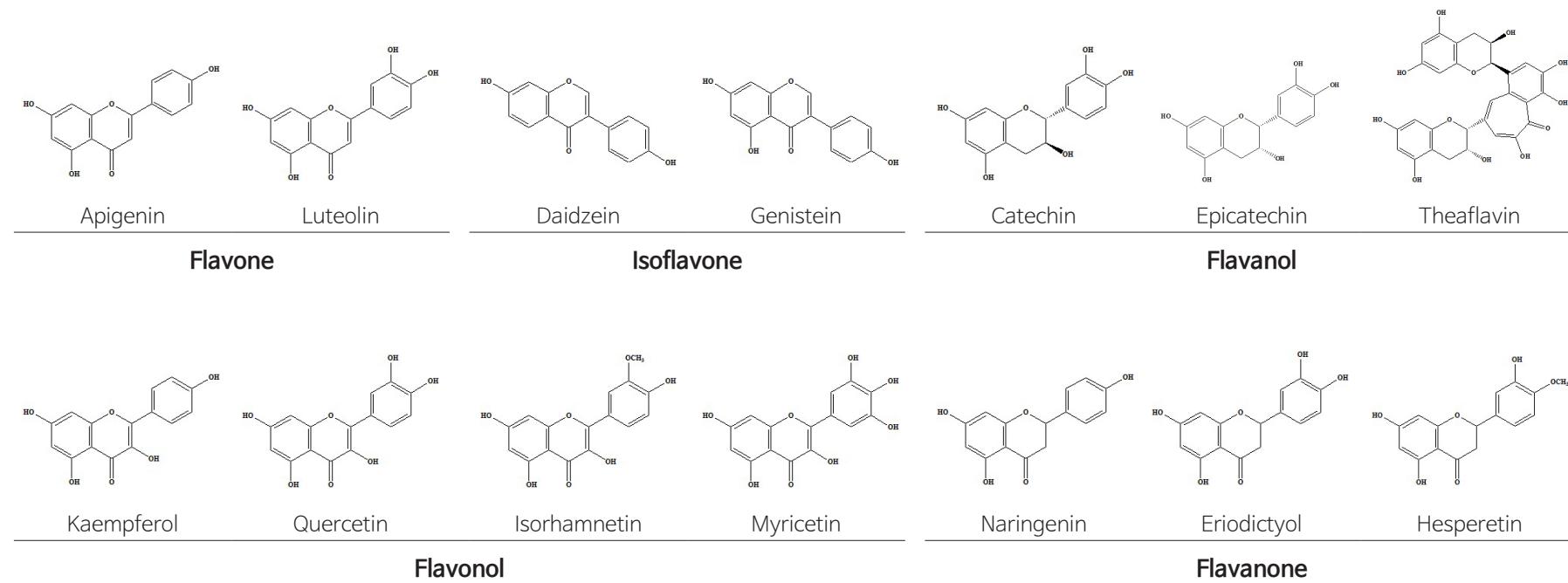


Figure 4. Chemical structure by flavonoid classes



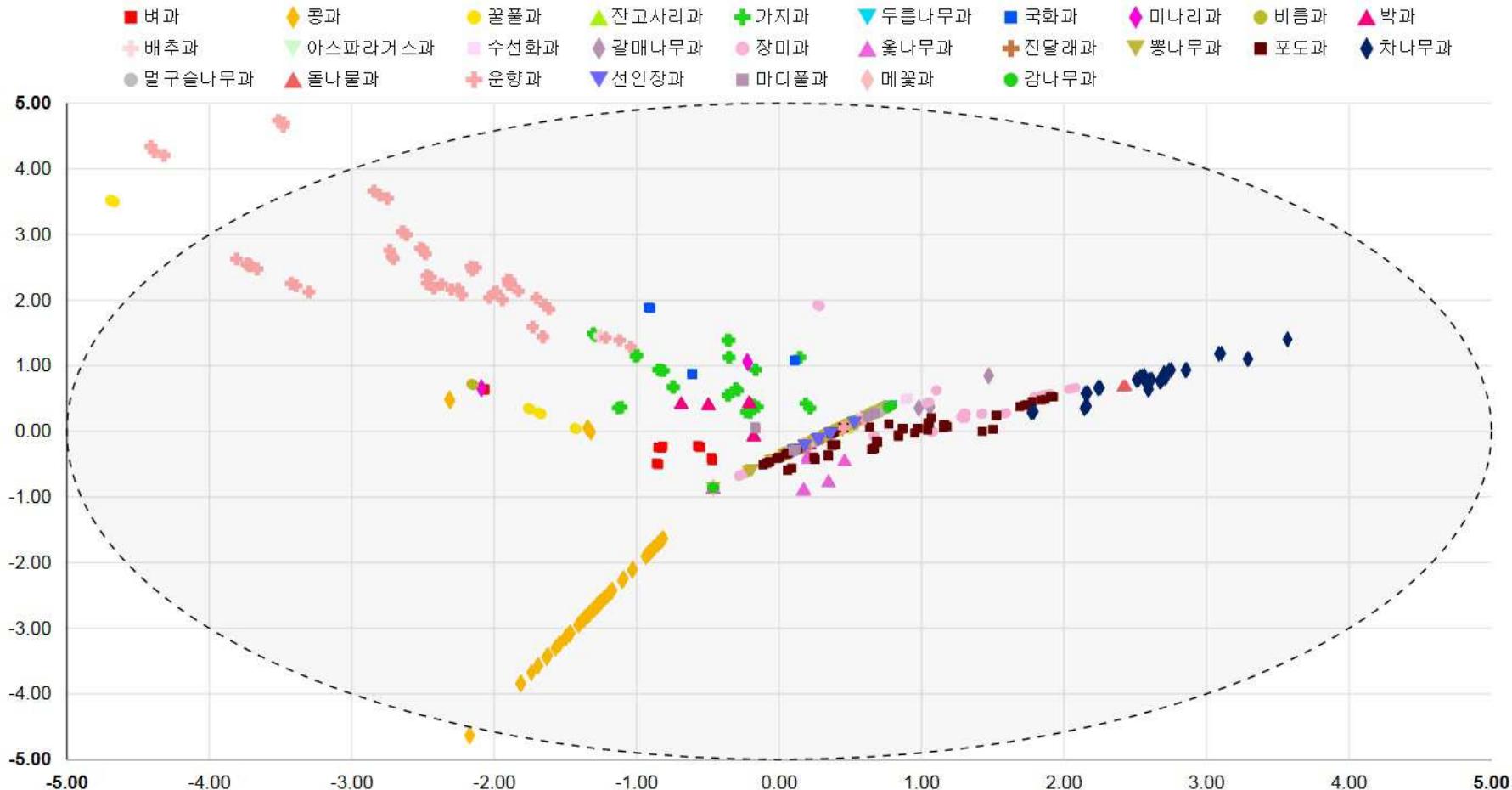
## F. DB Draw Up and Method

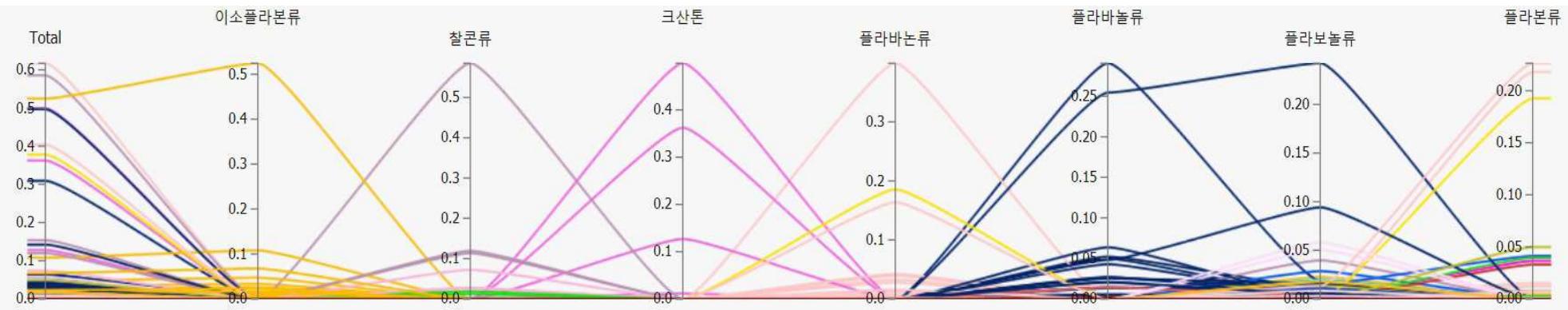
The data in this DB includes the quantitative values and structure identification results. Quantitative value is a value that quantified separated flavonoids using mass analysis information by the peak area of HPLC as a standard. There are no actual analysis values but blanks are left for information that is checked in literature. Because most of the flavonoids except catechins and theaflavins exist as a form of glycoside, calculation was performed proportionally by internal standard material without taking the conversion factor into consideration. Therefore, all data in this DB applies the same standard regarding internal standard material. The average value of three replicate analytical data is marked in mg/100g unit by a standard of dry sample and standard deviation is shown. Daepung, Daewon, Seonyu, Cheonja 3, black beans and more are used for beans, mung beans, pea and sword beans are included as samples, and Daewon varieties are used as samples for all fermented soybean lump, soybean paste and red pepper paste. Flavanol content of green tea and black tea is quantified by processing stages and chromatogram is included even the samples that rarely include flavonoids such as potatoes, sweet potatoes or mushrooms. Therefore, all flavonoid glycoside or aglycone which are shown as HPLC peak into absorbance value range (Fig. 3) and substance which is included in 61 kinds of aglycones, the basic structure of flavonoids (Table 5), are defined as flavonoids. The content value (quantitative value) in library is an actual analysis value by internal standard materials.

There are differences in flavonoid content depending on the samples as well as the sampling area, especially in the case of radishes. Even though it's the same root, there was a big difference between the aerial part and underground part. Also, almost all other samples including onions showed a big difference depending on the sampling area. In addition, when comparing a shell and the inside, there were more flavonoids in a shell in case of Citrus and lots of flavonoid contents were found in leaves than the fruits in case of jujubes. It is known that the content of flavonoid is related to environmental stresses and this resulted from UV rays, harmful insects, weather or pathological factors (Dixon and Palva, 1995; Winkel-Shirley, 2002). Besides that, it is also affected by variety, cultivating condition, agricultural method, process, storage condition or preprocessing method when analysis (Amiot et al.,

1995; Hakkinen et al.; 2000, Patil et al., 1995; van der Sluis et al., 2001). The user of this data needs to aware of that even though it has the same name, the food may be cooked or raw.







## 기능성분 패턴분석기

기능성분 패턴분석기는 [국립농업과학원](#)의 기능성분 데이터를 바탕으로 만들어진 차트입니다. 각 품목군에 해당하는 기능성 성분 데이터베이스를 색깔로 구별하여 평행좌표로 나타내었습니다.

## 사용법

**값 지정** 축의 값을 세로로 드래그해보세요.

**값 지정해제** 축의 배경을 클릭하세요.

**축 경렬하기** 라벨을 좌우로 드래그하여 축을 원하는 곳에 배치할 수 있습니다.

**값 경렬하기** 축의 라벨을 클릭하면 값이 반대로 정렬됩니다.

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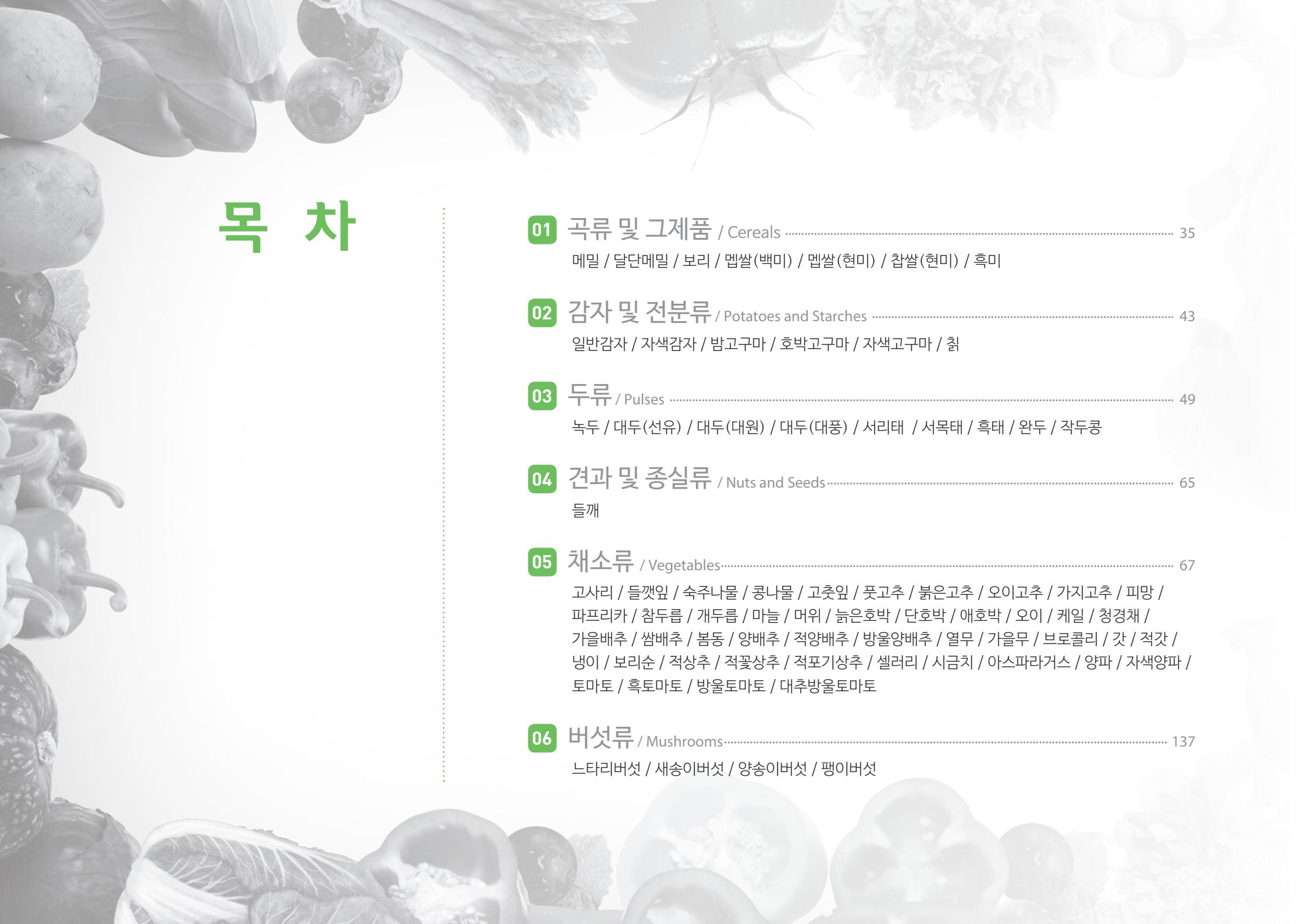
## 식품군

- 17 가지과
- 3 갈매나무과
- 6 감나무과
- 5 국화과
- 4 꿀풀과
- 1 돌나물과
- 2 두릅나무과
- 4 마디풀과
- 1 멀구슬나무과
- 3 메꽃과
- 2 미나리과
- 8 박과
- 16 배추과
- 14 벼과
- 1 비름과
- 24 뽕나무과
- 7 선인장과
- 5 수선화과
- 1 아스파라거스과
- 6 올나무과
- 22 운향과
- 3 잡고사리과
- 31 장미과
- 7 진달래과
- 17 차나무과

## 국가농업자원

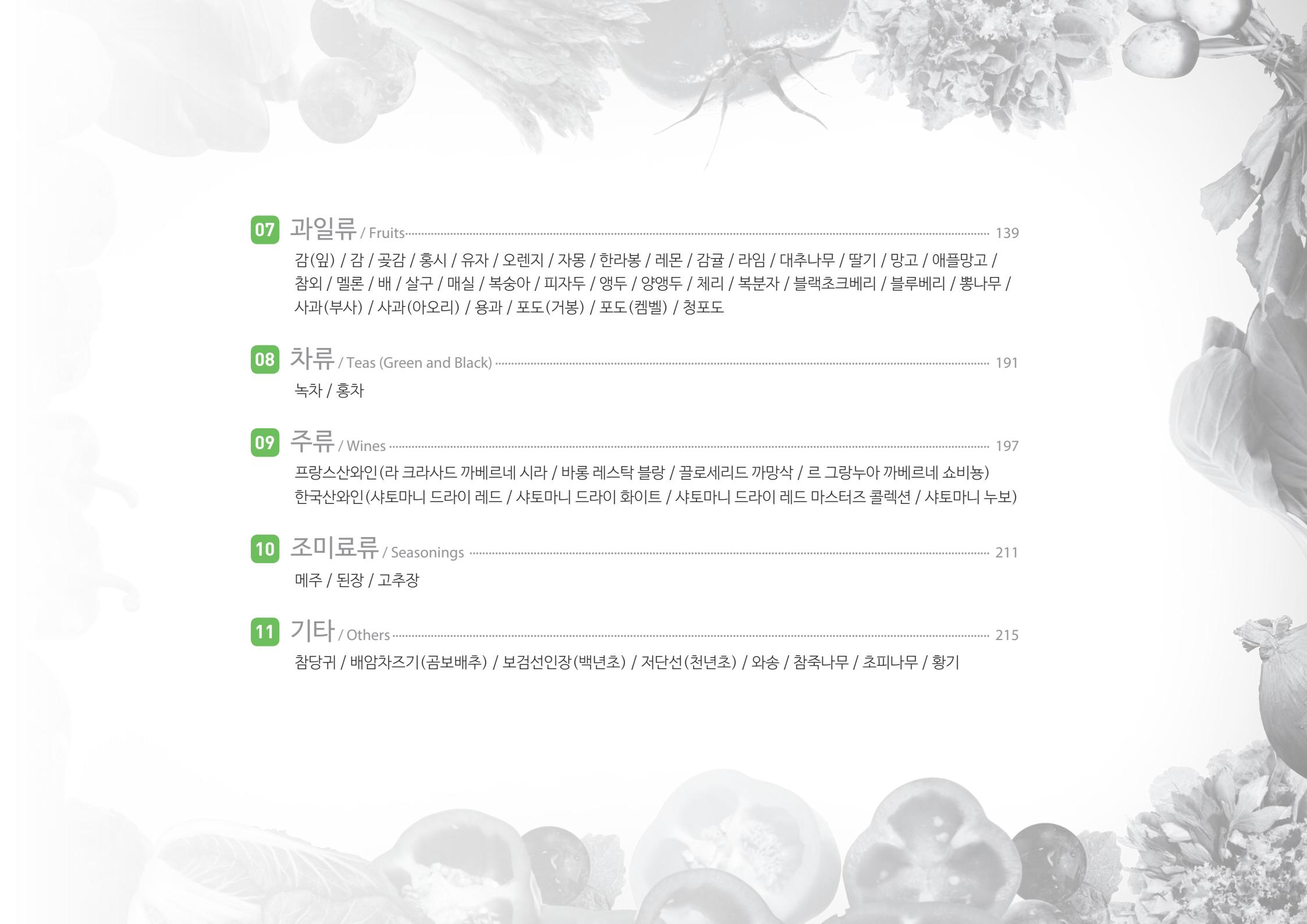
- 고사리(생것)
- 대봉감나무(잎)
- 대풍(가수)
- 대풍(볶음, 170°C)
- 라임(과육)
- 라임(전체)
- 레몬(전체)
- 머위(줄기)
- 메밀(껍질제거)
- 메밀(껍질포함)
- 멜론(과피)
- 복숭아(천도)
- 블루베리(Darrow)
- 오디(수향)
- 오디(캐나다봉)
- 오디(터키 D)
- 저단선(천년초, 업상경)
- 초피나무(미숙과)
- 초피나무(줄기)
- 케일(노지)
- 케일(하우스)
- 파프리카(녹색)
- 프랑스산 와인(바uong 레스탁 블랑)
- 흥차(마무리건조)
- 흑미(무수)

Search Foods...



# 목 차

<b>01</b>	곡류 및 그제품 / Cereals .....	35
	메밀 / 달단메밀 / 보리 / 맵쌀(백미) / 맵쌀(현미) / 찹쌀(현미) / 흑미	
<b>02</b>	감자 및 전분류 / Potatoes and Starches .....	43
	일반감자 / 자색감자 / 밤고구마 / 호박고구마 / 자색고구마 / 칡	
<b>03</b>	두류 / Pulses .....	49
	녹두 / 대두(선유) / 대두(대원) / 대두(대풍) / 서리태 / 서목태 / 흑태 / 완두 / 작두콩	
<b>04</b>	견과 및 종실류 / Nuts and Seeds .....	65
	들깨	
<b>05</b>	채소류 / Vegetables.....	67
	고사리 / 들깻잎 / 숙주나물 / 콩나물 / 고춧잎 / 풋고추 / 붉은고추 / 오이고추 / 가지고추 / 피망 / 파프리카 / 참두릅 / 개두릅 / 마늘 / 머위 / 늙은호박 / 단호박 / 애호박 / 오이 / 케일 / 청경채 / 가을배추 / 쌈배추 / 봄동 / 양배추 / 적양배추 / 방울양배추 / 열무 / 가을무 / 브로콜리 / 갓 / 적갓 / 냉이 / 보리순 / 적상추 / 적꽃상추 / 적포기상추 / 셀러리 / 시금치 / 아스파라거스 / 양파 / 자색양파 / 토마토 / 흑토마토 / 방울토마토 / 대추방울토마토	
<b>06</b>	버섯류 / Mushrooms.....	137
	느타리버섯 / 새송이버섯 / 양송이버섯 / 팽이버섯	



**07 과일류 / Fruits.....** 139

감(잎) / 감 / 꽃감 / 흉시 / 유자 / 오렌지 / 자몽 / 한라봉 / 레몬 / 감귤 / 라임 / 대추나무 / 딸기 / 망고 / 애플망고 /  
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사과(부사) / 사과(아오리) / 용과 / 포도(거봉) / 포도(케벨) / 청포도

**08 차류 / Teas (Green and Black).....** 191

녹차 / 흥차

**09 주류 / Wines .....** 197

프랑스산와인(라 크라사드 까베르네 시라 / 바롱 레스탁 블랑 / 끌로세리드 까망삭 / 르 그랑누아 까베르네 쇼비뇽)  
한국산와인(샤토마니 드라이 레드 / 샤토마니 드라이 화이트 / 샤토마니 드라이 레드 마스터즈 콜렉션 / 샤토마니 누보)

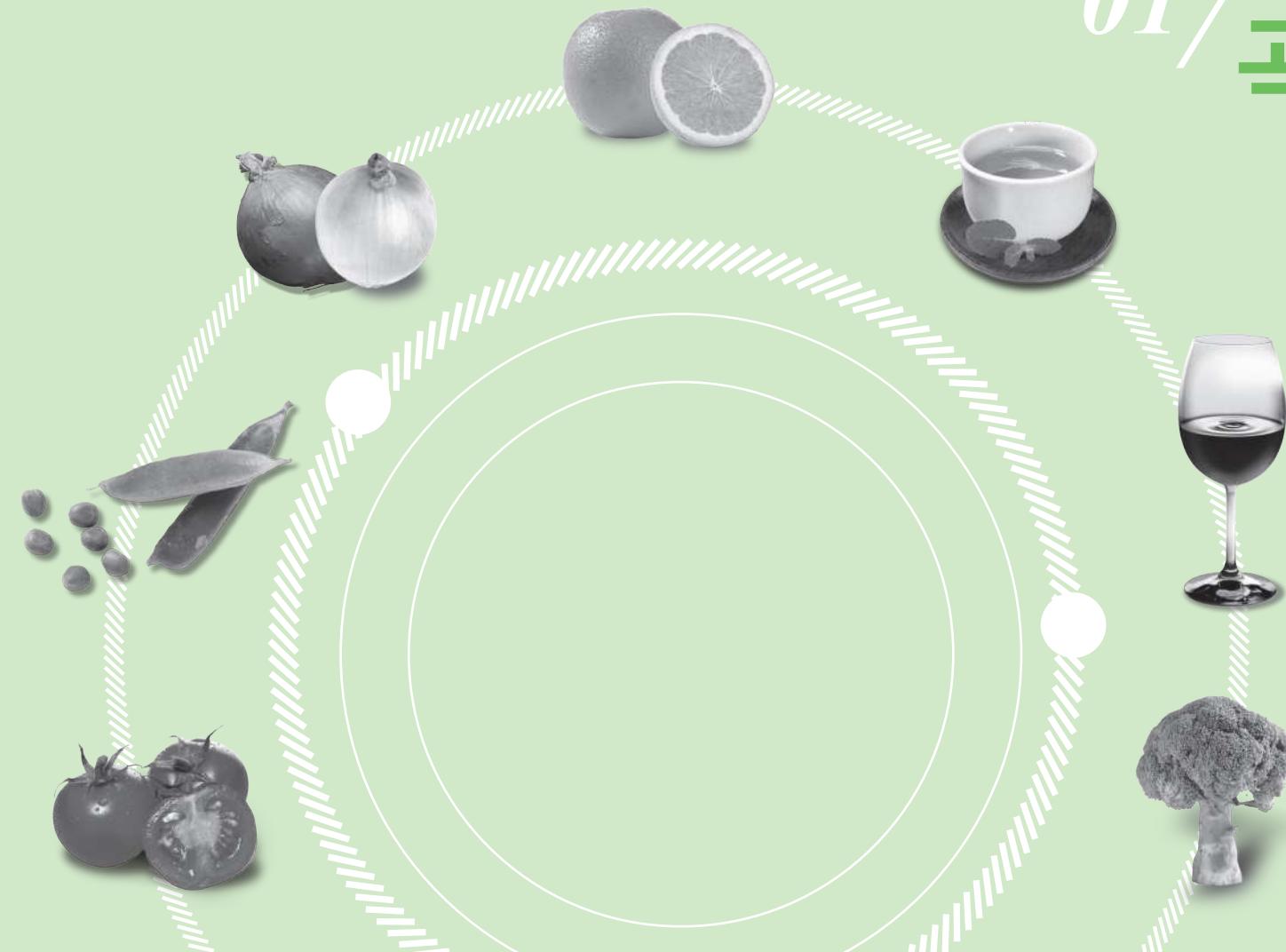
**10 조미료류 / Seasonings .....** 211

메주 / 된장 / 고추장

**11 기타 / Others.....** 215

참당귀 / 배암차즈기(곰보배추) / 보검선인장(백년초) / 저단선(천년초) / 와송 / 참죽나무 / 초피나무 / 황기

01/ 곡류 및 그제품  
Cereals





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# 메밀 Common buckwheat

(mg/100g dry weight)

껍질포함   껍질제거		대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)				
					메밀				
껍질포함	껍질제거								
플라바논류(Flavanones)	-	Flavones	Apigenin	apigenin 8-C-glucoside (vitexin)	0.5	-			
	-			apigenin 6-C-glucoside (isovitexin)	0.9	-			
				Total apigenin contents	1.4	-			
플라바놀류(Flavanols)	-		Luteolin	luteolin 8-C-glucoside (orientin)	0.2	-			
	-			luteolin 6-C-glucoside (isoorientin)	0.3	-			
				Total luteolin contents	0.5	-			
플라본류(Flavones)	1.9	Flavonols	Quercetin	quercetin 3-O-rhamnoside (quercitrin)	0.6	-			
	-			quercetin 3-O-galactoside (hyperoside)	1.7	-			
				quercetin 3-O-glucoside (isoquercitrin)	0.7	0.4			
플라보놀류(Flavonols)	18.3			quercetin 3-O-rutinoside (rutin)	15.3	12.1			
	12.5			Total quercetin contents	18.3	12.5			
이소플라본류(Isoflavones)	-								
	-								
총플라보노이드(Total flavonoids)	20.2								
	12.5								



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# 달단메밀

## Tartary buckwheat

(mg/100g dry weight)

생것	볶은것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					달단메밀	
					생것	볶은것
플라바논류(Flavanones)	-	Flavonols	Kaempferol	kaempferol	0.8	1.5
플라바놀류(Flavanols)	-			kaempferol 3-O-glucoside (astragalin)	2.0	0.8
플라본류(Flavones)	-			kaempferol 3-O-rutinoside (nicotiflorin)	79.0	55.3
플라보놀류(Flavonols)	1428.1			kaempferol 3-O-rutinoside-4'-O-glucoside	1.9	1.6
이소플라본류(Isoflavones)	965.8			Total kaempferol contents	83.7	59.2
총플라보노이드(Total flavonoids)	-		Quercetin	quercetin	4.2	14.9
총플라보노이드(Total flavonoids)	-			quercetin 3-O-glucoside (isoquercitrin)	5.9	2.8
총플라보노이드(Total flavonoids)	1428.1			quercetin 3-O-rutinoside (rutin)	1300.0	861.9
총플라보노이드(Total flavonoids)	965.8			quercetin 3-O-rutinoside-3'-O-glucoside	34.3	27.0
총플라보노이드(Total flavonoids)	965.8			Total quercetin contents	1344.4	906.6



Flavonoids "Data Base 1.0"

# 보리 Barley

(mg/100g dry weight)

	플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
찰보리	-	-	-	-	-	-
서둔찰보리	-	-	-	-	-	-
새쌀보리	-	-	-	-	-	-
흰찰쌀보리	-	-	-	-	-	-



Flavonoids "Data Base 1.0"

# 멥쌀(백미)

White rice

(mg/100g dry weight)

멥쌀(백미)
--------

플라바노류(Flavanones)
-

플라바놀류(Flavanols)
-

플라본류(Flavones)
0.1

플라보놀류(Flavonols)
-

이소플라본류(Isoflavones)
-

총 플라보노이드(Total flavonoids)
0.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			멥쌀(백미)
Flavones	Tricin	tricin 7-O-glucoside Total tricin contents	0.1 0.1



Flavonoids "Data Base 1.0"

# 멥쌀(현미) Brown rice

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			멥쌀(현미)
Flavonoids	Flavones	apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	0.3
		apigenin 6-C-glucoside-8-C-xyloside	0.1
		apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	0.5
		Total apigenin contents	0.9
		luteolin 6-C-arabinoside-8-C-glucoside	0.4
		luteolin 6-C-glucoside-8-C-xyloside	0.2
		luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	0.1
		Total luteolin contents	0.7
		chrysoeriol 6-C-arabinoside-8-C-glucoside	0.1
		chrysoeriol 6-C-glucoside-8-C-arabinoside	0.2
Total Flavonoids	Tricin	Total chrysoeriol contents	0.3
		tricin	0.2
		tricin 7-O-glucoside	1.2
		tricin 7-O-rutinoside	0.3
		Total tricin contents	1.7
총 플라보노이드(Total flavonoids)			3.6
총 플라보노이드(Total flavonoids)			3.6



# 찹쌀현미(화선찰벼) Brown rice(Hwaseonchalbyeo)

(mg/100g dry weight)

찹쌀현미(화선찰벼)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				찹쌀현미(화선찰벼)
플라바노류(Flavanones)	Flavones	Apigenin	apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	0.6
-			apigenin 6-C-glucoside-8-C-xyloside	0.3
			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	1.0
		Luteolin	Total apigenin contents	1.9
			luteolin 6-C-arabinoside-8-C-glucoside	0.3
			luteolin 6-C-glucoside-8-C-xyloside	0.3
		Chrysoeriol	luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	0.1
			Total luteolin contents	0.7
			chrysoeriol 6-C-arabinoside-8-C-glucoside	0.1
	Tricin	Chrysoeriol	chrysoeriol 6-C-glucoside-8-C-arabinoside	0.3
			Total chrysoeriol contents	0.4
		Tricin	tricin	0.1
			tricin 7-O-glucoside	1.7
			tricin 7-O-rutinoside	0.4
			Total tricin contents	2.2
총 플라보노이드(Total flavonoids)				
5.2				



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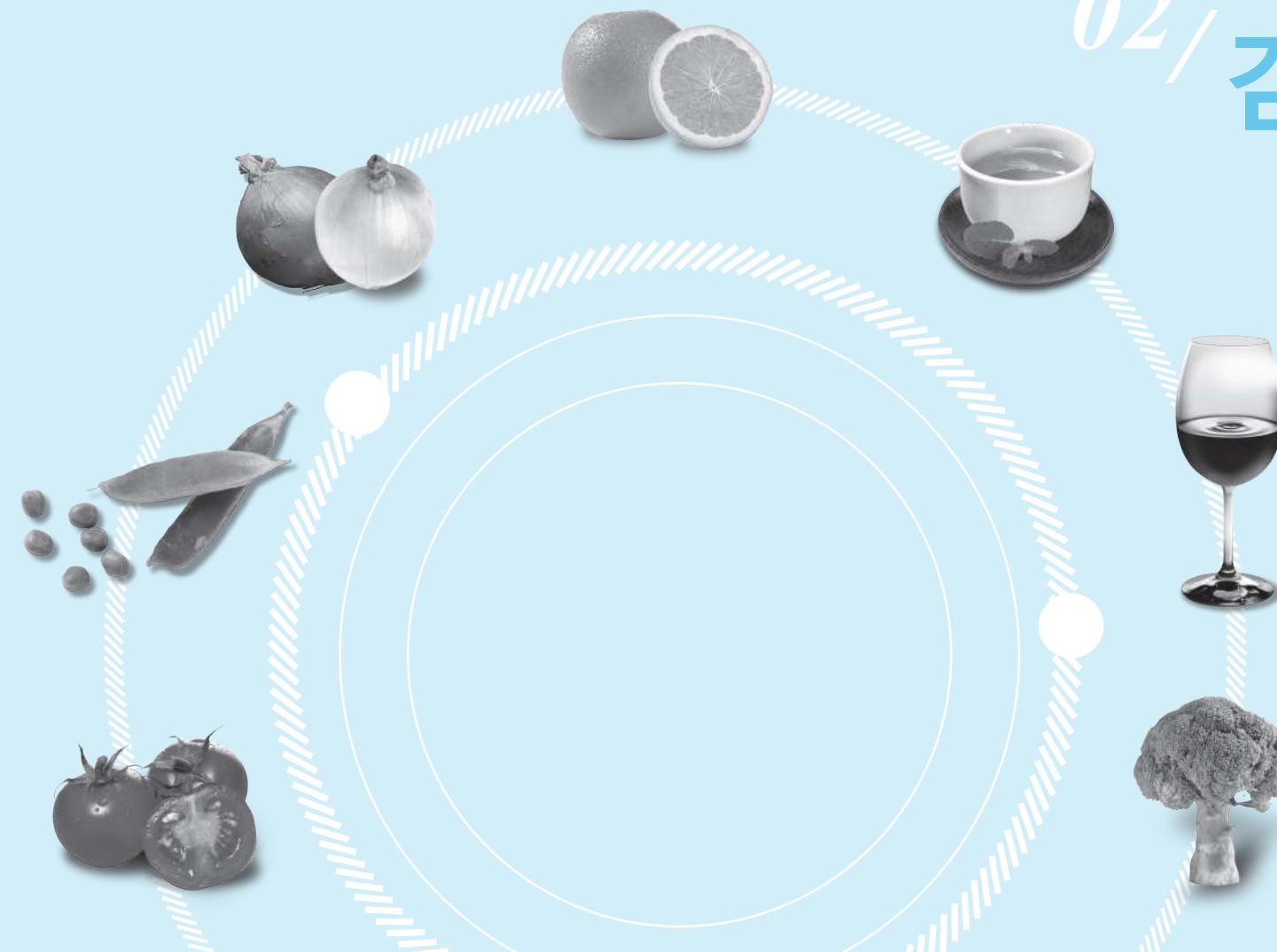
# 흑미

## Black rice

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			흑미	
Flavones	Apigenin	apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	0.4	
		apigenin 6-C-glucoside-8-C-xyloside	0.1	
		apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	0.2	
	Luteolin	Total apigenin contents	0.7	
		luteolin 6-C-arabinoside-8-C-glucoside	0.2	
		luteolin 6-C-glucoside-8-C-xyloside	0.1	
	Chrysoeriol	Total luteolin contents	0.3	
		chrysoeriol 6-C-arabinoside-8-C-glucoside	0.1	
		Total chrysoeriol contents	0.1	
	Tricin	tricin	0.5	
		tricin 7-O-glucoside	1.2	
		tricin 7-O-rutinoside	0.2	
		Total tricin contents	1.9	
Flavonols	Quercetin	quercetin	0.5	
		quercetin 3-O-galactoside (hyperoside)	1.4	
		quercetin 3-O-glucoside (isoquercitrin)	0.4	
		Total quercetin contents	2.3	

02/ 감자 및 전분류  
Potatoes and Starches





Flavonoids "Data Base 1.0"

# 감자 Potato

(mg/100g dry weight)

	플라바논류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
일반감자	-	-	-	-	-	-
자색감자	-	-	-	-	-	-



# 고구마 Sweet potato

(mg/100g dry weight)

	플라바논류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
밤고구마	-	-	-	-	-	-
호박고구마	-	-	-	-	-	-
자색고구마	-	-	-	-	-	-



Flavonoids "Data Base 1.0"

# 칡

## Kudzu vine

(mg/100g dry weight)

첨	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				칡
플라바논류(Flavanones)	Isoflavones	Daidzein	3'-hydroxydaidzein 8-C-glucoside (3'-hydroxypuerarin)	2841.4
-			daidzein 8-C-glucoside (puerarin)	19151.4
플라바놀류(Flavanols)			daidzein 7-O-glucoside (daidzin)	1800.8
-			3'-methoxydaidzein 8-C-glucoside (3'-methoxypuerarin)	1462.0
플라본류(Flavones)			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	3804.4
-			daidzein 8-C-xylosyl(1→6)glucoside (6"-O-xylosylpuerarin)	21.9
플라보놀류(Flavonols)			daidzein 8-C-xylosyl(1→2)glucoside (2"-O-xylosylpuerarin)	403.3
-			daidzein 8-C-apiosyl(1→6)glucoside (6"-O-apiosylpuerarin)	2329.4
이소플라본류(Isoflavones)			daidzein 8-C-glucoside-4'-O-glucoside (puerarin 4'-O-glucoside)	713.4
37561.1			daidzein 7,4'-di-O-glucoside (daidzin 4'-O-glucoside)	1304.5
총 플라보노이드(Total flavonoids)			daidzein 7-O-(6"-O-malonyl)glucoside-4'-O-glucoside	534.4
37561.1			Total daidzein contents	34366.9

다음페이지로 이어서



Flavonoids "Data Base 1.0"

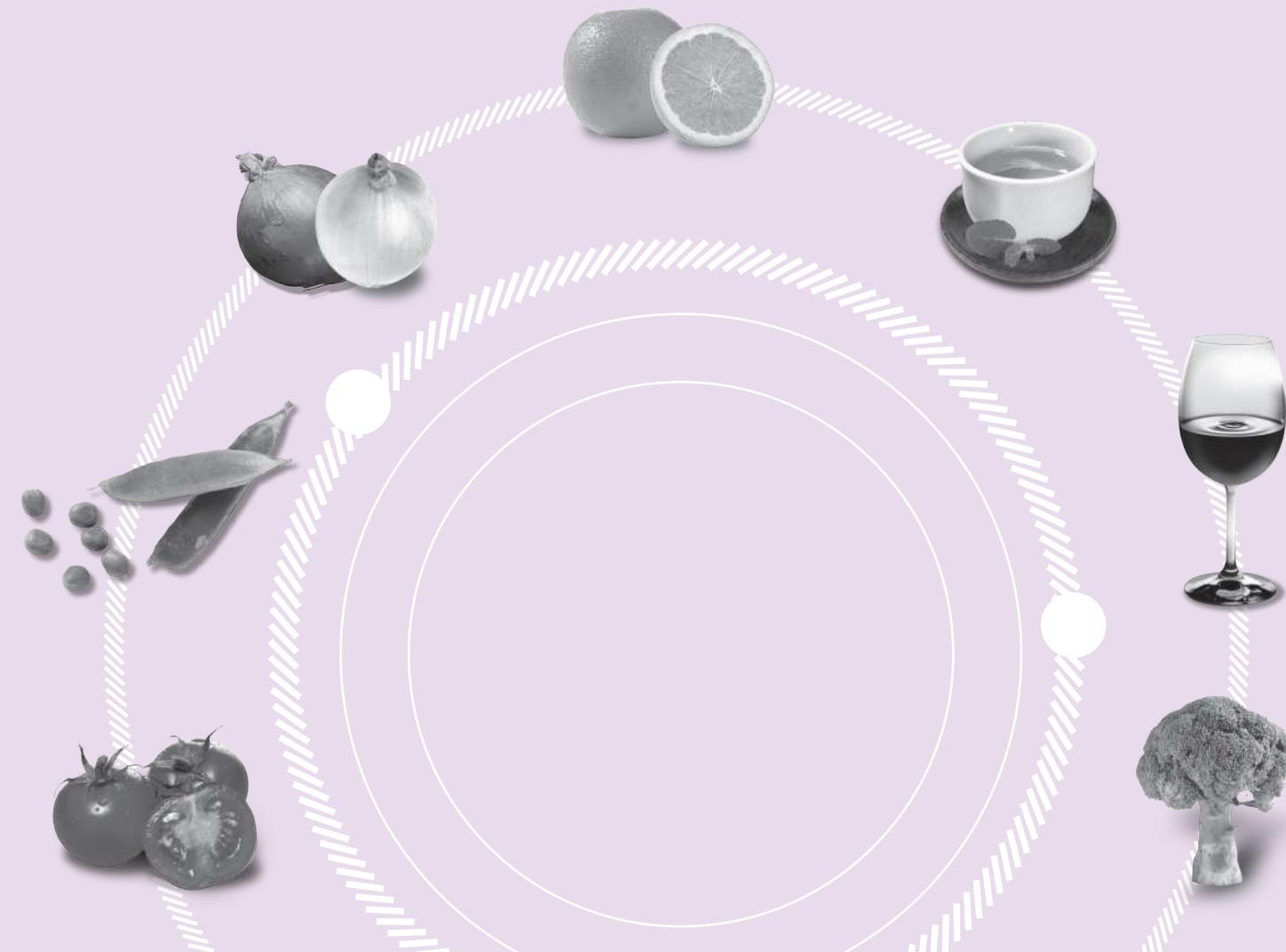
# 칡

## Kudzu vine

(mg/100g dry weight)

칡	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				칡
Isoflavones	Formononetin	Genistein	formononetin 8-C-glucoside (4'-methoxypuerarin)	103.1
			formononetin 7-O-glucoside (ononin)	68.9
			formononetin 7-O-(6"-O-malonyl)glucoside (6"-O-malonylononin)	422.8
			formononetin 8-C-xylosyl(1→6)glucoside (6"-O-xylosyl-4'-methoxypuerarin)	32.6
			formononetin 8-C-apiosyl(1→6)glucoside (6"-O-apiosyl-4'-methoxypuerarin)	148.0
			Total formononetin contents	775.4
	Genistein	Glycitein	genistein 8-C-glucoside (5-hydroxypuerarin)	652.3
			genistein 7-O-glucoside (genistin)	141.8
			genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	427.8
			genistein 8-C-xylosyl(1→6)glucoside (6"-O-xylosyl-5-hydroxypuerarin)	98.3
			genistein 8-C-apiosyl(1→6)glucoside (6"-O-apiosyl-5-hydroxypuerarin)	967.3
			Total genistein contents	2287.5
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	131.3
			Total glycitein contents	131.3

03/ 두류  
Pulses





Flavonoids "Data Base 1.0"

# 녹두 Mung bean

## 녹두

플라바논류(Flavanones)  
-

플라바놀류(Flavanols)  
-

플라본류(Flavones)  
478.1

플라보놀류(Flavonols)  
-

이소플라본류(Isoflavones)  
-

총 플라보노이드(Total flavonoids)  
478.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			녹두
Flavones	Apigenin	apigenin 8-C-glucoside (vitexin)	203.2
		apigenin 6-C-glucoside (isovitexin)	260.4
		vitexin 3-O-rhamnoside	3.4
	Luteolin	Total apigenin contents	467.0
		luteolin 8-C-glucoside (orientin)	6.5
		luteolin 6-C-glucoside (isoorientin)	4.6
		Total luteolin contents	11.1



# 대두(선유) Yellow bean(Seonyu)

(mg/100g dry weight)

생것   찐것   볶은것			개별성분 (Individual components)	함량(Contents)		
대분류 (Classes)	소분류 (Sub-classes)	대두(선유)				
		생것	찐것	볶은것		
Isoflavones	Daidzein	daidzein	3.8	13.1	7.5	
		daidzein 7-O-glucoside (daidzin)	47.1	105.6	78.4	
		daidzein 7-O-(4"-O-acetyl)glucoside (4"-O-acetyldaidzin)	-	-	6.2	
		daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	0.3	7.4	97.6	
		daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	20.8	24.0	-	
		daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	219.9	96.4	5.7	
	Genistein	Total daidzein contents	291.9	246.5	195.4	
		genistein	5.5	33.1	19.8	
		genistein 7-O-glucoside (genistin)	87.1	243.4	182.6	
		genistein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylgenistin)	-	-	12.6	
Others	Total flavonoids	genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	2.8	20.8	251.0	
		genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	26.9	18.6	-	
		genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	861.3	265.6	-	
		Total genistein contents	983.6	581.5	466.0	
총 플라보노이드(Total flavonoids)			다음페이지로 이어서			
1327.7	883.4	694.7	1327.7	883.4	694.7	



Flavonoids "Data Base 1.0"

# 대두(선유) Yellow bean(Seonyu)

(mg/100g dry weight)

생것   찐것   볶은것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				대두(선유)		
				생것	찐것	볶은것
Isoflavones	Glycitein		glycitein	1.4	-	5.5
			glycitein 7-O-glucoside (glycitin)	13.2	24.5	12.5
			glycitein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylglycitin)	-	-	1.4
			glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	8.5	12.9	13.9
			glycitein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylglycitin)	1.9	2.3	-
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	27.2	15.8	-
			Total glycinein contents	52.2	55.5	33.3



# 대두(대원)

## Yellow bean(Daewon)

(mg/100g dry weight)

대원(대원)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				대두(대원)
플라바노류(Flavanones)	Isoflavones	Daidzein	daidzein	5.2
-			daidzein 7-O-glucoside (daidzin)	70.1
플라바놀류(Flavanols)			daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	0.6
-			daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	14.0
플라본류(Flavones)			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	219.5
-		Genistein	Total daidzein contents	309.4
플라보놀류(Flavonols)			genistein	8.2
-			genistein 7-O-glucoside (genistin)	136.6
이소플라본류(Isoflavones)			genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	32.2
총 플라보노이드(Total flavonoids)	Glycitein	Glycitein	genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	456.9
956.5			Total genistein contents	633.9
956.5		Glycitein	glycitein 7-O-glucoside (glycitin)	5.4
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	7.8
			Total glycitein contents	13.2



# 대두(대풍) Yellow bean(Daepung)

(mg/100g dry weight)

생것   찐것   볶은것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				대두(대풍)		
				생것	찐것	볶은것
플라바논류(Flavanones)	Isoflavones	Daidzein	daidzein	2.9	29.4	17.2
-   -   -			daidzein 7-O-glucoside (daidzin)	108.3	300.3	247.0
-   -   -			daidzein 7-O-(4"-O-acetyl)glucoside (4"-O-acetyldaidzin)	-	-	16.6
-   -   -			daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	2.9	20.2	272.5
-   -   -			daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	51.2	78.8	-
-   -   -			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	480.7	303.0	13.8
총 플라보노이드(Total flavonoids)			Total daidzein contents	646.0	731.7	567.1
2970.0   2248.3   1719.4		Genistein	genistein	6.0	50.6	34.0
-   -   -			genistein 7-O-glucoside (genistin)	178.3	557.5	455.5
-   -   -			genistein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylgenistin)	-	-	23.6
-   -   -			genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	3.7	41.6	515.0
-   -   -			genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	57.0	43.8	-
-   -   -			genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	1936.2	660.5	-
총 플라보노이드(Total flavonoids)			Total genistein contents	2181.2	1354.0	1028.1
2970.0   2248.3   1719.4				다음페이지로 이어서		



Flavonoids "Data Base 1.0"

# 대두(대풍) Yellow bean(Daepung)

(mg/100g dry weight)

생것   찐것   볶은것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				대두(대풍)		
				생것	찐것	볶은것
Isoflavones	Glycitein		glycitein	1.8	5.3	19.1
			glycitein 7-O-glucoside (glycitin)	42.2	77.7	47.1
			glycitein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylglycitin)	-	-	5.4
			glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	7.2	13.0	52.5
			glycitein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylglycitin)	6.6	7.3	-
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	85.0	59.3	-
			Total glycitein contents	142.8	162.6	124.1



# 서리태 Black bean

(mg/100g dry weight)

생것   찐것   볶은것			개별성분 (Individual components)	함량(Contents)		
대분류 (Classes)	소분류 (Sub-classes)	서리태		생것	찐것	볶은것
		생것	찐것			
Isoflavones	Daidzein	daidzein	-	3.7	14.1	10.4
		daidzein 7-O-glucoside (daidzin)	-	44.5	113.4	120.0
		daidzein 7-O-(4"-O-acetyl)glucoside (4"-O-acetyldaidzin)	-	0.8	1.0	8.2
		daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	-	1.3	8.4	133.5
		daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	-	21.9	28.0	-
		daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	-	200.1	151.4	7.6
		Total daidzein contents	-	272.3	316.3	279.7
	Genistein	genistein	-	4.0	27.0	24.8
		genistein 7-O-glucoside (genistin)	-	89.7	283.3	295.7
		genistein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylgenistin)	-	-	-	15.6
		genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	-	3.4	20.8	347.3
		genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	-	29.3	24.4	-
		genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	-	1050.2	635.3	-
		Total genistein contents	-	1176.6	990.8	683.4
총 플라보노이드(Total flavonoids)			다음페이지로 이어서			
1483.6	1355.6	992.3	1483.6	1355.6	992.3	



Flavonoids "Data Base 1.0"

# 서리태 Black bean

(mg/100g dry weight)

생것   찐것   볶은것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				서리태		
				생것	찐것	볶은것
Isoflavones	Glycitein		glycitein	0.2	0.8	4.7
			glycitein 7-O-glucoside (glycitin)	10.8	18.2	12.8
			glycitein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylglycitin)	-	-	1.4
			glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	6.0	11.1	10.3
			glycitein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylglycitin)	1.4	5.0	-
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	16.3	13.4	-
			Total glycitein contents	34.7	48.5	29.2



# 서목태 Black bean

(mg/100g dry weight)

서목태	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				서목태
플라바노류(Flavanones)	Isoflavones	Daidzein	daidzein	3.8
-			daidzein 7-O-glucoside (daidzin)	48.1
플라바놀류(Flavanols)			daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	0.3
-			daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	21.2
플라본류(Flavones)			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	224.6
-			Total daidzein contents	298.0
플라보놀류(Flavonols)		Genistein	genistein	5.7
-			genistein 7-O-glucoside (genistin)	88.9
이소플라본류(Isoflavones)			genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	2.8
1438.1			genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	27.5
총플라보노이드(Total flavonoids)			genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	961.8
1438.1			Total genistein contents	1086.7
Glycitein	Glycitein	glycitein	1.4	
		glycitein 7-O-glucoside (glycitin)	13.5	
		glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	8.7	
		glycitein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylglycitin)	2.0	
		glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	27.8	
		Total glycitein contents	53.4	



# 흑태

## Black bean

(mg/100g dry weight)

흑태	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				흑태
플라바노류(Flavanones)	Isoflavones	Daidzein	daidzein	45.2
-			daidzein 7-O-glucoside (daidzin)	224.3
플라바놀류(Flavanols)			daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	2.4
-			daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	35.7
플라본류(Flavones)			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	122.6
-			Total daidzein contents	430.2
플라보놀류(Flavonols)		Genistein	genistein	50.2
-			genistein 7-O-glucoside (genistin)	515.4
이소플라본류(Isoflavones)			genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	8.4
1324.2			genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	17.2
총 플라보노이드(Total flavonoids)			genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	264.1
1324.2		Glycitein	Total genistein contents	855.3
			glycitein	1.5
			glycitein 7-O-glucoside (glycitin)	19.8
			glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	6.4
			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	11.0
			Total glycitein contents	38.7


**완두** Pea

종자 | 꼬투리 | 전체

플라바노류(Flavanones)

-

플라바놀류(Flavanols)

-

플라본류(Flavones)

-

플라보놀류(Flavonols)

-

553.4

189.7

이소플라본류(Isoflavones)

-

총플라보노이드(Total flavonoids)

-

553.4

189.7

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			완두	
			꼬투리	전체
Flavonols	Kaempferol	kaempferol 3-O-sophoroside	3.7	0.9
		kaempferol 3-O-(6"-O-malonyl)sophoroside (pisumol A*)	1.3	0.6
		kaempferol 3-O-(6"-O-sinapoyl)sophoroside	2.4	0.8
		kaempferol 3-O-(6"-O-p-coumaroyl)sophoroside	1.9	0.7
		kaempferol 3-O-(6"-O-feruloyl)sophoroside	0.2	0.1
		kaempferol 3-O-sophorotrioside	1.9	1.1
		kaempferol 3-O-(6"-O-malonyl)sophorotrioside (pisumol B*)	1.9	1.0
		Total kaempferol contents	13.3	5.2
	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	5.4	1.9
		quercetin 3-O-(6"-O-malonyl)glucoside	2.2	0.7
		quercetin 3-O-sophoroside	200.1	59.6
		quercetin 3-O-(6"-O-malonyl)sophoroside (pisumin A*)	42.6	12.6
		quercetin 3-O-(6"-O-p-coumaroyl)sophoroside	9.4	2.8
		quercetin 3-O-(6"-O-cis-p-coumaroyl)sophoroside	1.2	0.4
		quercetin 3-O-(6"-O-feruloyl)sophoroside	0.9	0.1
		quercetin 3-O-(6"-O-sinapoyl)sophoroside	17.8	5.5
		quercetin 3-O-(6"-O-malonyl-6"-O-p-coumaroyl)sophoroside (6"-O-p-coumaroylpisumin A)	1.1	0.3

\* 신규명명

(mg/100g dry weight)

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 완두 Pea

(mg/100g dry weight)

종자   꼬투리   전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				완두	
				꼬투리	전체
Flavonols	Quercetin		quercetin 3-O-sophorotrioside	108.6	39.2
			quercetin 3-O-(6"-O-malonyl)sophorotrioside (pisumin B*)	78.0	31.4
			quercetin 3-O-(6'''-O-p-coumaroyl)sophorotrioside	26.3	10.1
			quercetin 3-O-(6'''-O-cis-p-coumaroyl)sophorotrioside(pisumflavonoside I)	3.4	1.3
			quercetin 3-O-(6'''-O-feruloyl)sophorotrioside	9.3	4.0
			quercetin 3-O-(6'''-O-sinapoyl)sophorotrioside	13.4	5.6
			quercetin 3-O-(6"-O-malonyl-6'''-O-p-coumaroyl)sophorotrioside (6'''-O-p-coumaroylpisumin B)	6.6	2.8
			quercetin 3-O-(6"-O-malonyl-6'''-O-feruloyl)sophorotrioside (6'''-O-feruloylpisumin B)	3.0	1.4
			quercetin 3-O-(6"-O-malonyl-6'''-O-sinapoyl)sophorotrioside (6'''-O-sinapoylpisumin B)	9.1	4.2
	Isorhamnetin		Total quercetin contents	538.4	183.9
			isorhamnetin 3-O-sophoroside	1.7	0.6
			Total isorhamnetin contents	1.7	0.6

\* 신규명명



# 작두콩

Sword bean

종자 (적색)	종자 (백색)	고투리
플라바논류(Flavanones)	-	-
플라바놀류(Flavanols)	-	-
플라본류(Flavones)	-	-
플라보놀류(Flavonols)	67.6	68.7
이소플라본류(Isoflavones)	-	-
총 플라보노이드(Total flavonoids)	67.6	68.7
	35.5	35.5

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			작두콩		
			종자(적색)	종자(백색)	고투리
Flavonols	Kaempferol	kaempferol 3-O-galactoside-7-O-rhamnoside	3.9	5.6	-
		kaempferol 3-O-robinobioside-7-O-rhamnoside (robinin)	12.5	15.9	-
		kaempferol 3-O-(2"-O-rhamnosyl)robinobioside-7-O-rhamnoside (gladiatoside B)	29.7	34.2	-
		kaempferol 3-O-(2"-O-glucosyl)robinobioside-7-O-rhamnoside (gladiatoside A)	2.0	2.0	-
		kaempferol 3-O-(2"-O-rhamnosyl)robinobioside-7-O-(3"-O-o-anisoyl)rhamnoside (gladiatoside B2)	3.2	2.5	-
		kaempferol 3-O-(2"-O-rhamnosyl)robinobioside-7-O-(4"-O-o-anisoyl)rhamnoside (gladiatoside B1)	3.9	3.1	-
		kaempferol 3-O-(2"-O-rhamnosyl)robinobioside-7-O-(2"-O-o-anisoyl)rhamnoside (gladiatoside B3)	0.2	0.3	-
		kaempferol 3-O-(2"-O-glucosyl)robinobioside-7-O-(3"-O-o-anisoyl)rhamnoside (gladiatoside A2)	3.1	2.2	-
		kaempferol 3-O-(2"-O-glucosyl)robinobioside-7-O-(4"-O-o-anisoyl)rhamnoside (gladiatoside A1)	4.2	2.9	-
		kaempferol 3-O-(2"-O-glucosyl)robinobioside-7-O-(2"-O-o-anisoyl)rhamnoside (gladiatoside A3)	0.1	-	-
Quercetin	Quercetin	Total kaempferol contents	62.8	68.7	-
		quercetin 3-O-glucoside (isoquercitrin)	0.7	-	0.3
		quercetin 3-O-robinobioside	0.7	-	-
		quercetin 3-O-rutinoside (rutin)	3.4	-	4.2
		Total quercetin contents	4.8	-	4.5

다음페이지로 이어서



# 작두콩

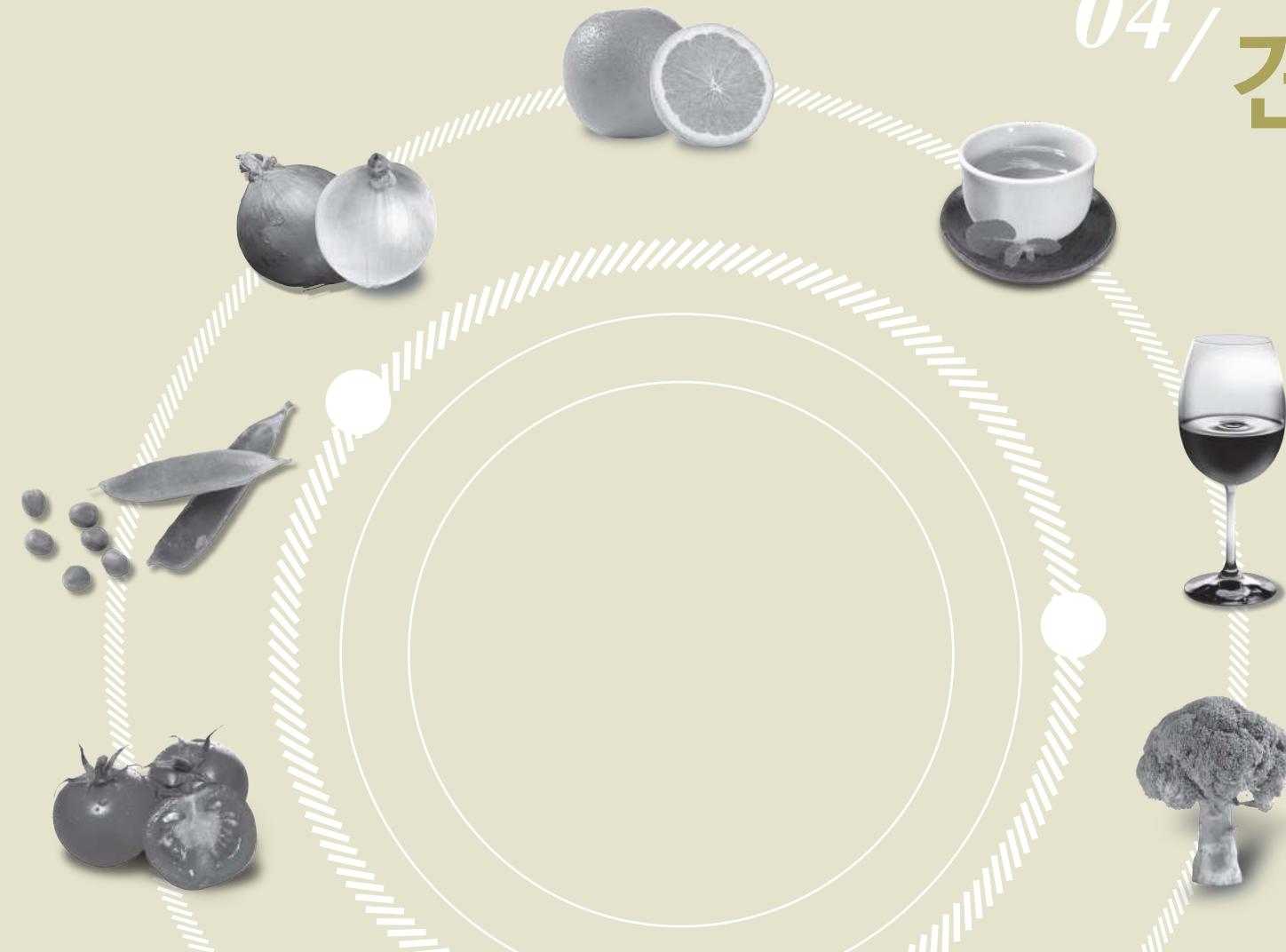
Sword bean

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			작두콩		
			종자(적색)	종자(백색)	고투리
Flavonols	Myricetin	myricetin 3-O-glucoside (isomyricitin)	-	-	2.6
		myricetin 3-O-rutinoside	-	-	14.7
		Total myricetin contents	-	-	17.3
	Laricitrin	laricitrin 3-O-robinobioside	-	-	2.0
		laricitrin 3-O-rutinoside	-	-	5.0
		Total laricitrin contents	-	-	7.0
	Syringetin	syringetin 3-O-glucoside	-	-	0.1
		syringetin 3-O-robinobioside	-	-	2.2
		syringetin 3-O-rutinoside	-	-	4.4
		Total syringetin contents	-	-	6.7

04/ 견과 및 종실류

Nuts and Seeds





Flavonoids "Data Base 1.0"

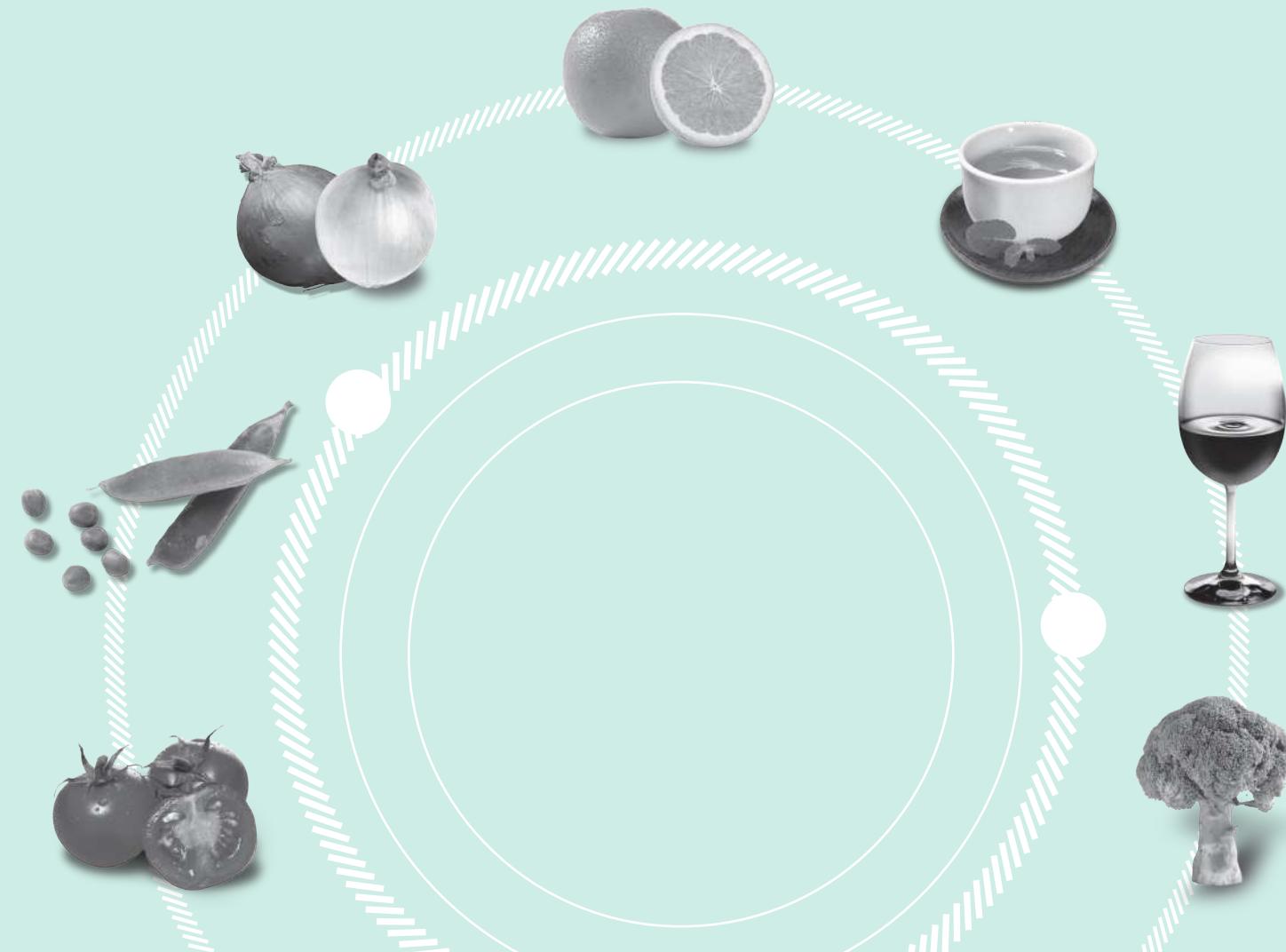
# 들깨

## Perilla

들깨	들깻묵
플라바노류(Flavanones)	-
-	-
플라바놀류(Flavanols)	-
-	-
플라본류(Flavones)	16.3
177.4	
플라보놀류(Flavonols)	-
-	-
이소플라본류(Isoflavones)	-
-	-
총 플라보노이드(Total flavonoids)	16.3
177.4	

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			들깨	들깻묵
Flavones	Apigenin	apigenin	4.0	35.8
		apigenin 7-O-glucoside (cosmosiin)	-	10.5
		Total apigenin contents	4.0	46.3
Flavones	Luteolin	luteolin	8.5	112.8
		luteolin 7-O-glucoside (cynaroside)	1.4	4.8
		Total luteolin contents	9.9	117.6
Chrysoeriol	Chrysoeriol	chrysoeriol	2.4	13.5
		Total chrysoeriol contents	2.4	13.5

05/ 채소류  
Vegetables





# 고사리

Bracken

(mg/100g dry weight)

생것	데친것	데친후 침지
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플라바논류(Flavanones)	-	-
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플라바놀류(Flavanols)	-	-
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플라본류(Flavones)	-	-
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플라보놀류(Flavonols)	462.3	265.5
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이소플라본류(Isoflavones)	-	-
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총 플라보노이드(Total flavonoids)	462.3	265.5
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대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			고사리		데친후침지
생것	데친것	데친후침지			
Flavonols	Kaempferol	kaempferol 3-O-galactoside (trifolin)	7.9	4.0	2.2
		kaempferol 3-O-glucoside (astragalin)	183.7	94.7	58.5
		kaempferol 3-O-(6"-O-malonyl)glucoside	2.9	1.0	0.3
		kaempferol 7-O-rhamnoside-4'-O-glucoside	14.2	6.5	1.3
		kaempferol 3-O-rutinoside (nicotiflorin)	121.6	81.8	38.2
		Total kaempferol contents	330.3	188.0	100.5
Flavonols	Quercetin	quercetin 3-O-galactoside (hyperoside)	4.1	1.9	1.2
		quercetin 3-O-glucoside (isoquercitrin)	35.7	18.8	12.9
		quercetin 3-O-robinobioside	7.6	6.0	1.4
		quercetin 3-O-rutinoside (rutin)	84.6	50.7	24.7
		Total quercetin contents	132.0	77.4	40.2



# 들깻잎

Perilla leaf

(mg/100g dry weight)

들깻잎	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				들깻잎
플라바노류(Flavanones)	Flavones	Apigenin	apigenin 7-O-glucoside (cosmosin)	1.6
-			apigenin 7-O-glucuronide	8.7
플라바놀류(Flavanols)			apigenin 7-O-(6"-O-caffeyl)glucoside	5.1
-			apigenin 7-O-glucuronosyl(1→2)glucuronide (apigenin 7-O-diglucuronide)	174.7
플라본류(Flavones)		Luteolin	Total apigenin contents	190.1
390.5			luteolin 7-O-glucoside (cyanoside)	3.8
플라보놀류(Flavonols)			luteolin 7-O-glucuronide	106.9
-		Scutellarein	luteolin 7-O-glucuronosyl(1→2)glucuronide (luteolin 7-O-diglucuronide)	47.4
이소플라본류(Isoflavones)			Total luteolin contents	158.1
-			scutellarein 7-O-glucuronosyl(1→2)glucuronide (scutellarein 7-O-diglucuronide)	42.3
총 플라보노이드(Total flavonoids)			Total scutellarein contents	42.3
390.5				



Flavonoids "Data Base 1.0"

# 숙주나물

## Mung bean sprout

(mg/100g dry weight)

숙주나물
플라바논류(Flavanones) 1.9
플라바놀류(Flavanols) -
플라본류(Flavones) 31.4
플라보놀류(Flavonols) 70.7
이소플라본류(Isoflavones) 142.6
총 플라보노이드(Total flavonoids) 246.6

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			숙주나물
Flavanones	Naringenin	naringenin 7-O-neohesperidoside (naringin)	1.9
		Total naringenin contents	1.9
	Apigenin	apigenin 8-C-glucoside (vitexin)	5.8
		apigenin 6-C-glucoside (isovitexin)	1.4
	Kaempferol	vitexin 3-O-rhamnoside	24.2
		Total apigenin contents	31.4
Flavones	Kaempferol	kaempferol 3-O-glucoside (astragalin)	17.9
		kaempferol 3-O-rutinoside (nicotiflorin)	34.0
		Total kaempferol contents	51.9
	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	1.3
		quercetin 3-O-rutinoside (rutin)	17.5
		Total quercetin contents	18.8

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 숙주나물

## Mung bean sprout

채소류

(mg/100g dry weight)

숙주나물	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				숙주나물
Isoflavones	Daizein		daidzein	31.1
			daidzein 7-O-glucoside (daidzin)	69.3
			Total daidzein contents	100.4
	Genistein		genistein	25.0
			genistein 7-O-glucoside (genistin)	13.9
			Total genistein contents	38.9
	Biochanin A		biochanin A 7-O-glucoside (sissotrin)	3.3
			Total biochanin A contents	3.3



Flavonoids "Data Base 1.0"

# 콩나물 Soybean sprout

(mg/100g dry weight)

콩나물	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				콩나물
플라바노류(Flavanones)	Isoflavones	Daidzein	daidzein	29.9
-			daidzein 7-O-glucoside (daidzin)	80.4
플라바놀류(Flavanols)			daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin)	4.5
-			daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin)	26.3
플라본류(Flavones)			daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin)	203.5
-			Total daidzein contents	344.6
플라보놀류(Flavonols)		Genistein	genistein	9.9
-			genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin)	6.6
이소플라본류(Isoflavones)			genistein 7-O-glucoside (genistin)	154.0
878.1			genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin)	18.0
총플라보노이드(Total flavonoids)			genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin)	310.2
878.1		Glycitein	Total genistein contents	498.7
glycitein			glycitein	1.6
glycitein 7-O-glucoside (glycitin)			glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin)	8.8
glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)			glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin)	6.0
Total glycinein contents			18.4	34.8



# 고춧잎

Pepper leaf

(mg/100g dry weight)

고춧잎	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				고춧잎
플라바노류(Flavanones)	Flavones	Apigenin	apigenin 7-O-glucoside (cosmosiin)	5.9
-			apigenin 7-O-(2"-O-apiosyl)glucoside (apiin)	79.3
			apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	69.8
			Total apigenin contents	155.0
플라바놀류(Flavanols)		Luteolin	luteolin 7-O-(6"-O-malonyl)glucoside	96.7
-			luteolin 7-O-(2"-O-apiosyl)glucoside	1472.6
플라본류(Flavones)			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	60.2
2960.1			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	1136.3
플라보놀류(Flavonols)		Chrysoeriol	Total luteolin contents	2765.8
66.0			chrysoeriol 7-O-glucoside (thermopsiside)	3.9
이소플라본류(Isoflavones)			chrysoeriol 7-O-(2"-O-apiosyl)glucoside	17.8
-			chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	17.6
총 플라보노이드(Total flavonoids)	Flavonols	Quercetin	Total chrysoeriol contents	39.3
3026.1			quercetin 3-O-rhamnoside (quercitrin)	66.0
			Total quercetin contents	66.0



Flavonoids "Data Base 1.0"

# 풋고추 Green pepper

(mg/100g dry weight)

풋고추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				풋고추
플라바논류(Flavanones)	Flavones	Apigenin	apigenin 7-O-(2"-O-apiosyl)glucoside (apiin)	8.4
-			apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	34.5
			apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	24.1
			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	18.4
			apigenin 6,8-di-C-glucoside (vicenin-2)	38.7
		Luteolin	Total apigenin contents	124.1
			luteolin 7-O-(6"-O-malonyl)glucoside	10.9
			luteolin 7-O-(2"-O-apiosyl)glucoside	98.2
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	18.3
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	1166.7
플라본류(Flavones)	Flavonols	Chrysoeriol	luteolin 8-C-glucoside (orientin)	60.7
1530.3			luteolin 6-C-glucoside (isoorientin)	16.6
플라보놀류(Flavonols)			luteolin 6-C-arabinoside-8-C-glucoside	3.1
175.5			luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	12.9
이소플라본류(Isoflavones)			luteolin 6,8-di-C-glucoside (lucenin-2)	13.0
-			Total luteolin contents	1400.4
총플라보노이드(Total flavonoids)			chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	5.8
1705.8			Total chrysoeriol contents	5.8

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 풋고추

## Green pepper

채소류

(mg/100g dry weight)

풋고추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				풋고추
Flavonols	Quercetin		quercetin 3-O-rhamnoside (quercitrin)	10.9
			quercetin 3-O-glucoside (isoquercitrin)	24.3
			quercetin 3-O-(6"-O-malonyl)glucoside	23.5
			quercetin 3-O-rutinoside (rutin)	6.7
			quercetin 3-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	5.7
			quercetin 3-O-(2"-O-apiosyl)glucoside-7-O-glucoside	27.1
			quercetin 3-O-(2"-O-apiosyl-6"-O-malonyl)glucoside-7-O-glucoside	58.0
	Isorhamnetin		Total quercetin contents	156.2
			isorhamnetin 3-O-(6"-O-malonyl)glucoside	19.3
			Total isorhamnetin contents	19.3



# 붉은고추

Red pepper

생것	태양건조
플라바노류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	114.9      145.6
플라보놀류(Flavonols)	31.8      16.7
이소플라본류(Isoflavones)	-
총플라보노이드(Total flavonoids)	146.7      162.3

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			붉은고추	
			생것	태양건조
Flavones	Apigenin	apigenin 7-O-(2"-O-apiosyl)glucoside (apiin)	6.2	53.6
		apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	29.5	36.1
		apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	5.5	8.5
		apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	4.2	6.7
		apigenin 6,8-di-C-glucoside (vicenin-2)	7.7	7.8
	Luteolin	Total apigenin contents	53.1	112.7
		luteolin 7-O-(6"-O-malonyl)glucoside	4.4	2.3
		luteolin 7-O-(2"-O-apiosyl)glucoside	10.6	13.5
		luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	1.6	-
		luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	34.2	10.4
Chrysoeriol	Luteolin	luteolin 8-C-glucoside (orientin)	4.7	4.1
		luteolin 6-C-glucoside (isoorientin)	2.2	1.3
		luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	1.2	0.6
		luteolin 6,8-di-C-glucoside (lucenin-2)	1.0	-
		Total luteolin contents	59.9	32.2
	Chrysoeriol	chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	1.9	0.7
		Total chrysoeriol contents	1.9	0.7

(mg/100g dry weight)

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 붉은고추

Red pepper

채소류

(mg/100g dry weight)

생것 태양건조	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				붉은고추	
				생것	태양건조
Flavonols	Quercetin	Quercetin	quercetin 3-O-rhamnoside (quercitrin)	18.3	7.6
			quercetin 3-O-glucoside (isoquercitrin)	1.5	-
			quercetin 3-O-(6"-O-malonyl)glucoside	2.4	-
		Isorhamnetin	quercetin 3-O-rhamnoside-7-O-glucoside	6.7	1.8
			Total quercetin contents	28.9	9.4
	Isorhamnetin	Isorhamnetin	isorhamnetin 3-O-(6"-O-malonyl)glucoside	2.9	7.3
			Total isorhamnetin contents	2.9	7.3



# 오이고추 Cucumber pepper

(mg/100g dry weight)

오이고추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				오이고추
플라바논류(Flavanones)	Flavones	Apigenin	apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	4.2
-			apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	8.4
플라바놀류(Flavanols)			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	5.8
-			apigenin 6,8-di-C-glucoside (vicenin-2)	12.5
플라본류(Flavones)			Total apigenin contents	30.9
263.9		Luteolin	luteolin 7-O-(6"-O-malonyl)glucoside	1.0
플라보놀류(Flavonols)			luteolin 7-O-(2"-O-apiosyl)glucoside	4.5
65.9			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	11.4
이소플라본류(Isoflavones)			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	192.9
-			luteolin 8-C-glucoside (orientin)	10.9
총플라보노이드(Total flavonoids)		Chrysoeriol	luteolin 6-C-glucoside (isoorientin)	5.0
329.8			luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	2.5
			Total luteolin contents	230.2
			chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	2.8
			Total chrysoeriol contents	2.8

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 오이고추 Cucumber pepper

채소류

(mg/100g dry weight)

오이고추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				오이고추
Flavonols	Quercetin		quercetin 3-O-rhamnoside (quercitrin)	62.3
			quercetin 3-O-rhamnoside-7-O-glucoside	1.8
			Total quercetin contents	64.1
	Isorhamnetin		isorhamnetin 3-O-(6"-O-malonyl)glucoside	1.8
			Total isorhamnetin contents	1.8



# 가지고추

Purple pepper

(mg/100g dry weight)

가지고추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				가지고추
플라바노류(Flavanones)	Flavones	Apigenin	apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	18.2
-			apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	11.5
플라바놀류(Flavanols)			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	11.7
-			apigenin 6,8-di-C-glucoside (vicenin-2)	7.3
플라본류(Flavones)		Luteolin	Total apigenin contents	48.7
339.4			luteolin 7-O-(6"-O-malonyl)glucoside	3.2
플라보놀류(Flavonols)			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	10.6
813.3			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	195.7
이소플라본류(Isoflavones)		Chrysoeriol	luteolin 8-C-glucoside (orientin)	10.2
-			luteolin 6-C-glucoside (isoorientin)	60.4
총플라보노이드(Total flavonoids)			luteolin 6,8-di-C-glucoside (lucenin-2)	8.1
1152.7			Total luteolin contents	288.2
chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	Flavonols	Quercetin		2.5
Total chrysoeriol contents				2.5
quercetin 3-O-rhamnoside (quercitrin)				733.4
quercetin 3-O-rhamnoside-7-O-glucoside		Isorhamnetin		19.5
quercetin 3-O-rutinoside (rutin)				53.1
Total quercetin contents				806.0
isorhamnetin 3-O-(6"-O-malonyl)glucoside				7.2
Total isorhamnetin contents				7.2



# 피망

Sweet pepper

				(mg/100g dry weight)	
녹색	적색			함량(Contents)	
				피망	
				녹색	적색
플라바노류(Flavanones)	-	Apigenin	apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	1.9	2.1
플라바놀류(Flavanols)	-		apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	1.3	1.2
플라본류(Flavones)	115.3	Flavones	apigenin 6,8-di-C-glucoside (vicenin-2)	4.8	5.0
플라보놀류(Flavonols)	54.4	Luteolin	Total apigenin contents	8.0	8.3
이소플라본류(Isoflavones)	-		luteolin 7-O-(6"-O-malonyl)glucoside	1.9	0.9
총플라보노이드(Total flavonoids)	169.7	Flavonols	luteolin 7-O-(2"-O-apiosyl)glucoside	22.0	15.2
	107.1	Quercetin	luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	3.1	2.7
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	69.3	45.0
			luteolin 8-C-glucoside (orientin)	4.1	4.4
			luteolin 6-C-glucoside (isoorientin)	2.6	2.0
			luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	1.9	2.3
			luteolin 6,8-di-C-glucoside (lucenin-2)	2.4	1.4
			Total luteolin contents	107.3	73.9
			quercetin 3-O-rhamnoside (quercitrin)	53.6	16.2
			quercetin 3-O-rhamnoside-7-O-glucoside	0.8	8.7
			Total quercetin contents	54.4	24.9



# 파프리카 Paprika

(mg/100g dry weight)

녹색   적색   황색			개별성분 (Individual components)	함량(Contents)		
대분류 (Classes)	소분류 (Sub-classes)	파프리카		녹색	적색	황색
		대분류 (Classes)	소분류 (Sub-classes)			
Flavones	Apigenin	Apigenin	apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapien)	0.7	0.5	0.2
			apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	2.6	1.7	1.7
			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	1.6	1.0	0.7
			apigenin 6,8-di-C-glucoside (vicenin-2)	5.8	3.7	4.0
			Total apigenin contents	10.7	6.9	6.6
	Luteolin	Luteolin	luteolin 7-O-(6"-O-malonyl)glucoside	2.8	1.8	1.1
			luteolin 7-O-(2"-O-apiosyl)glucoside	11.6	4.3	5.2
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)galactoside	2.9	0.9	8.9
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	72.3	20.6	22.7
			luteolin 8-C-glucoside (orientin)	6.7	3.2	3.3
Chrysoeriol	Isoflavones	Isoflavones	luteolin 6-C-glucoside (isoorientin)	4.7	2.0	2.4
			luteolin 6-C-glucoside-8-C-arabinoside (carlinoside)	2.8	1.8	1.9
			luteolin 6,8-di-C-glucoside (lucenin-2)	2.8	1.3	1.3
			Total luteolin contents	106.6	35.9	46.8
			chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	1.6	0.9	0.6
	Total flavonoids	Total flavonoids	Total chrysoeriol contents	1.6	0.9	0.6

다음페이지로 이어서



# 파프리카 Paprika

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			파프리카		
			녹색	적색	황색
Flavonols	Quercetin	quercetin 3-O-rhamnoside (quercitrin)	43.9	11.0	10.7
		quercetin 3-O-glucoside (isoquercitrin)	1.1	-	-
		quercetin 3-O-(6"-O-malonyl)glucoside	4.7	-	1.3
		quercetin 3-O-rhamnoside-7-O-glucoside	1.8	4.9	5.4
		Total quercetin contents	51.5	15.9	17.4
	Isorhamnetin	isorhamnetin 3-O-(6"-O-malonyl)glucoside	1.0	0.4	0.2
		Total isorhamnetin contents	1.0	0.4	0.2



Flavonoids "Data Base 1.0"

# 참두릅(두릅나무 순)

Japanese angelica

(mg/100g dry weight)

참두릅(두릅나무 순)
-------------

플라바논류(Flavanones)
-

플라바놀류(Flavanols)
-

플라본류(Flavones)
-

플라보놀류(Flavonols)
552.4

이소플라본류(Isoflavones)
-

총 플라보노이드(Total flavonoids)
552.4

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			참두릅(두릅나무 순)
Flavonols	Kaempferol	kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-rhamnoside (elatanol A*)	43.0
		Total kaempferol contents	43.0
	Quercetin	quercetin 3,7-di-O-rhamnoside	42.7
		quercetin 3-O-glucosyl(1→2)rhamnoside-7-O-rhamnoside (elatanol B*)	466.7
		Total quercetin contents	509.4

\* 신규명명



# 개두릅(엄나무 순) Castor aralia

개두릅(엄나무 순)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	(mg/100g dry weight)	함량(Contents) 개두릅(엄나무 순)
플라바논류(Flavanones)		Kaempferol	kaempferol 3-O-galactoside (trifolin) Total kaempferol contents	88.9 88.9	
플라바놀류(Flavanols)	Flavonols	Quercetin	quercetin quercetin 3-O-galactoside (hyperoside) quercetin 3-O-glucoside (isoquercitrin) quercetin 3-O-galactoside-7-O-rhamnoside	18.9 3036.8 89.4 131.2	
플라본류(Flavones)			Total quercetin contents	3276.3	
플라보놀류(Flavonols)				3365.2	
이소플라본류(Isoflavones)				-	
총 플라보노이드(Total flavonoids)				3365.2	



Flavonoids "Data Base 1.0"

# 마늘 Garlic

(mg/100g dry weight)

플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
-	-	-	-	-	-

마늘



# 머위 Butterbur

잎	줄기
플라바논류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	-
플라보놀류(Flavonols)	2103.5 28.7
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	2103.5 28.7

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			머위	
			잎	줄기
Flavonols	Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	97.4	-
		kaempferol 3-O-(6"-O-acetyl)glucoside-7-O-glucoside	15.1	-
		kaempferol 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	4.9	-
		kaempferol 3-O-glucoside (astragalin)	817.6	21.2
		kaempferol 3-O-(6"-O-malonyl)glucoside	59.9	-
		kaempferol 3-O-(6"-O-acetyl)glucoside	555.4	1.2
	Quercetin	kaempferol 3-O-(6"-O-caffeyl)glucoside	81.5	0.4
		Total kaempferol contents	1631.8	22.8
		quercetin 3-O-rutinoside (rutin)	14.1	-
		quercetin 3-O-(6"-O-acetyl)glucoside-7-O-glucoside	2.8	-
Flavonoids	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	33.6	1.0
		quercetin 3-O-(6"-O-acetyl)glucoside	217.3	1.4
		quercetin 3-O-(6"-O-malonyl)glucoside	165.0	3.5
		quercetin 3-O-(6"-O-caffeyl)glucoside	38.9	-
		Total quercetin contents	471.7	5.9



Flavonoids "Data Base 1.0"

# 늙은호박

## Old pumpkin

(mg/100g dry weight)

과육	전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					늙은호박	과육
플라바논류(Flavanones)	-	Flavonols	Kaempferol	kaempferol 3-O-galactoside-7-O-rhamnoside	0.2	1.4
플라바놀류(Flavanols)	-			kaempferol 3-O-glucoside-7-O-rhamnoside	1.5	9.9
플라본류(Flavones)	-			kaempferol 3-O-robinobioside	1.0	6.4
플라보놀류(Flavonols)	27.7		Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	1.2	7.1
이소플라본류(Isoflavones)	-		Isohamnetin	kaempferol 3-O-robinobioside-7-O-rhamnoside (robinin)	3.9	19.2
총 플라보노이드(Total flavonoids)	27.7			kaempferol 3-O-rutinoside-7-O-rhamnoside (nicotiflorin 7-O-rhamnoside, moragrol B*)	9.6	41.5
	138.6			Total kaempferol contents	17.4	85.5
	-			isorhamnetin 3-O-glucoside	-	0.6
	-			isorhamnetin 3-O-glucoside-7-O-rhamnoside	1.1	5.7
	-			isorhamnetin 3-O-robinobioside	0.7	4.0
	-		Kaempferol	isorhamnetin 3-O-rutinoside (narcissin)	3.6	20.5
	-		Isohamnetin	isorhamnetin 3-O-robinobioside-7-O-rhamnoside	4.1	18.1
	-			isorhamnetin 3-O-rutinoside-7-O-rhamnoside	0.8	4.2
	-			Total isorhamnetin contents	10.3	53.1
	138.6					

\* 신규명명



# 단호박

Sweet pumpkin

## 단호박

플라비노류(Flavanones)

-

플라바놀류(Flavanols)

-

플라본류(Flavones)

-

플라보놀류(Flavonols)

1.8

이소플라본류(Isoflavones)

-

총 플라보노이드(Total flavonoids)

1.8

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			단호박
Flavonols	Kaempferol	kaempferol 3-O-galactoside-7-O-rhamnoside Total kaempferol contents	1.8 1.8



Flavonoids "Data Base 1.0"  
**애호박** Squash

애호박
플라바노류(Flavanones) -
플라바놀류(Flavanols) -
플라본류(Flavones) -
플라보놀류(Flavonols) 28.0
이소플라본류(Isoflavones) -
총 플라보노이드(Total flavonoids) 28.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			애호박
Flavonols	Kaempferol	kaempferol 3-O-glucoside-7-O-rhamnoside	1.6
		kaempferol 3-O-robinobioside	6.9
		kaempferol 3-O-rutinoside (nicotiflorin)	5.5
		kaempferol 3-O-robinobioside-7-O-rhamnoside (robinin)	4.7
		kaempferol 3-O-rutinoside-7-O-rhamnoside (nicotiflorin 7-O-rhamnoside, moragrol B*)	6.3
	Isorhamnetin	Total kaempferol contents	25.0
		isorhamnetin 3-O-rutinoside (narcissin)	3.0
		Total isorhamnetin contents	3.0

\* 신규명명



# 오이 Cucumber

오이

플라비노류(Flavanones)

-

플라바놀류(Flavanols)

-

플라본류(Flavones)

12.2

플라보놀류(Flavonols)

-

이소플라본류(Isoflavones)

-

총 플라보노이드(Total flavonoids)

12.2

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			오이
Flavones	Apigenin	apigenin 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylisovitexin, isobursakotexin*)	3.5
		isovitexin 2"-O-(6'''-O-p-coumaroyl)glucoside	2.3
		isovitexin 2"-O-(6'''-O-feruloyl)glucoside	5.0
	Chrysoeriol	Total apigenin contents	10.8
		isoscoparin 2"-O-(6'''-O-p-coumaroyl)glucoside	1.4
		Total chrysoeriol contents	1.4

\* 신규명명



# 케일 Kale

(mg/100g dry weight)

노지	하우스	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					케일	
					노지	하우스
		플라바논류(Flavanones)		kaempferol 3-O-glucoside (astragalin)	27.2	39.4
-	-			kaempferol 3,7-di-O-glucoside	4.5	13.9
		플라바놀류(Flavanols)		kaempferol 3-O-sophoroside	7.7	4.2
-	-			kaempferol 3-O-sophoroside-7-O-glucoside	80.3	67.0
		플라본류(Flavones)		kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	120.5	116.8
-	-			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	211.5	175.0
		플라보놀류(Flavonols)		kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	176.8	139.7
1296.0	856.2			kaempferol 3-O-(2''-O-p-coumaroyl)gentibioside-7-O-glucoside	5.0	2.6
		이소플라본류(Isoflavones)		kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	60.0	145.6
-	-			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	42.0	9.9
		총 플라보노이드(Total flavonoids)		kaempferol 3-O-sophoroside-7-O-diglucoside	25.9	5.4
1296.0	856.2			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-diglucoside	4.5	2.1
				kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-diglucoside	75.8	11.6
				kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-diglucoside	55.0	7.9
				kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-diglucoside	89.7	22.5
				kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-diglucoside	54.4	28.2
				kaempferol 3-O-(2''-O-sinapoyl)triglucoside-7-O-diglucoside	15.8	10.9
				kaempferol 3-O-(2'',6'''-di-O-sinapoyl)triglucoside-7-O-diglucoside	23.3	10.6
				Total kaempferol contents	1079.9	813.3

다음페이지로 이어서



# 케일 Kale

노지 | 하우스

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			케일	
			노지	하우스
Flavonols	Quercetin	quercetin 3-O-sophoroside	8.1	4.3
		quercetin 3-O-sophoroside-7-O-glucoside	24.3	5.9
		quercetin 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	37.5	7.6
		quercetin 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	12.7	8.9
		quercetin 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	27.7	15.4
		quercetin 3-O-sophoroside-7-O-diglucoside	16.7	-
		quercetin 3-O-(2''-O-caffeyl)sophoroside-7-O-diglucoside	26.7	-
		quercetin 3-O-(2''-O-feruloyl)sophoroside-7-O-diglucoside	22.1	-
		quercetin 3-O-(2''-O-sinapoyl)sophoroside-7-O-diglucoside	24.1	-
		quercetin 3-O-(2'',6'''-di-O-sinapoyl)triglucoside-7-O-diglucoside	16.2	0.8
		Total quercetin contents	216.1	42.9



Flavonoids "Data Base 1.0"

# 청경채

## Bok choy

(mg/100g dry weight)

청경채	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				청경채
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	18.5
-			kaempferol 3,7-di-O-glucoside	8.4
플라바놀류(Flavanols)			kaempferol 3-O-sophoroside	91.2
-			kaempferol 3-O-sophoroside-7-O-glucoside	62.4
플라본류(Flavones)			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	55.8
-			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	19.5
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	11.9
404.8			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	33.9
이소플라본류(Isoflavones)		Isorhamnetin	Total kaempferol contents	301.6
-			isorhamnetin 3-O-glucoside	70.6
총 플라보노이드(Total flavonoids)			isorhamnetin 3,7-di-O-glucoside	32.6
404.8			Total isorhamnetin contents	103.2



# 가을배추 Chinese cabbage

(mg/100g dry weight)

가을배추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				가을배추
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol	1.5
-			kaempferol 3-O-glucoside (astragalin)	6.5
플라바놀류(Flavanols)			kaempferol 3,7-di-O-glucoside	3.9
-			kaempferol 3-O-sophoroside	4.0
플라본류(Flavones)			kaempferol 3-O-sophoroside-7-O-glucoside	4.6
-			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	8.4
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	4.3
72.7			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	4.0
이소플라본류(Isoflavones)		Quercetin	kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	3.2
-			kaempferol 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-glucoside	3.1
총플라보노이드(Total flavonoids)			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	5.6
72.7			kaempferol 3-O-(2'''-O-hydroxyferuloyl)sophorotrioside-7-O-glucoside	3.2
			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	1.7
			Total kaempferol contents	54.0
			quercetin 3-O-glucoside (isoquercitrin)	3.2
			quercetin 3-O-sophoroside	0.7
			Total quercetin contents	3.9

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 가을배추 Chinese cabbage

(mg/100g dry weight)

가을배추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				가을배추
Flavonols	Isorhamnetin		isorhamnetin	1.9
			isorhamnetin 3-O-glucoside	10.9
			isorhamnetin 3,7-di-O-glucoside	2.0
			Total isorhamnetin contents	14.8



# 쌈배추 Chinese cabbage

(mg/100g dry weight)

쌈배추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				쌈배추
플라바논류(Flavanones)			kaempferol 3-O-glucoside (astragalin)	5.3
-			kaempferol 3,7-di-O-glucoside	176.8
플라바놀류(Flavanols)			kaempferol 3-O-sophoroside-7-O-glucoside	48.7
-			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	107.7
플라본류(Flavones)	Flavonols	Kaempferol	kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	55.1
-			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	113.5
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-p-coumaroyl)gentiobioside-7-O-glucoside	9.7
1617.3			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	82.2
이소플라본류(Isoflavones)			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	2.3
-			kaempferol 3-O-sophorotrioside-7-O-glucoside	12.2
총 플라보노이드(Total flavonoids)			kaempferol 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-glucoside	106.9
1617.3			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	94.9
			kaempferol 3-O-(2'''-O-hydroxyferuloyl)sophorotrioside-7-O-glucoside	106.3
			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	171.8
			Total kaempferol contents	1093.4

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 쌈배추 Chinese cabbage

(mg/100g dry weight)

쌈배추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				쌈배추
Flavonols	Quercetin		quercetin 3-O-glucoside (isoquercitrin)	13.4
			quercetin 3-O-(2"-O-caffeyl)sophoroside-7-O-glucoside	54.4
			Total quercetin contents	67.8
	Isorhamnetin		isorhamnetin 3-O-glucoside	5.3
			isorhamnetin 3,7-di-O-glucoside	450.8
			Total isorhamnetin contents	456.1



# 봄동

## Chinese cabbage

(mg/100g dry weight)

봄동	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				봄동
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	1.9
-			kaempferol 3,7-di-O-glucoside	68.1
플라바놀류(Flavanols)			kaempferol 3-O-sophoroside-7-O-glucoside	17.8
-			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	97.7
플라본류(Flavones)			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	12.9
-			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	33.7
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-p-coumaroyl)gentiobioside-7-O-glucoside	2.5
774.3			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	12.2
이소플라본류(Isoflavones)			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	0.9
-			kaempferol 3-O-sophorotrioside-7-O-glucoside	5.7
총 플라보노이드(Total flavonoids)			kaempferol 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-glucoside	58.9
774.3			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	25.4
			kaempferol 3-O-(2'''-O-hydroxyferuloyl)sophorotrioside-7-O-glucoside	31.0
			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	57.9
			Total kaempferol contents	426.6

다음페이지로 이어서



# 봄동

## Chinese cabbage

(mg/100g dry weight)

봄동	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				봄동	봄동
Flavonols	Quercetin	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	4.3	
			quercetin 3,7-di-O-glucoside	16.9	
			quercetin 3-O-(2"-O-caffeyl)sophoroside-7-O-glucoside	18.6	
			quercetin 3-O-(2"-O-feruloyl)sophoroside-7-O-glucoside	11.0	
			quercetin 3-O-(2"-O-sinapoyl)sophoroside-7-O-glucoside	7.9	
			Total quercetin contents	58.7	
	Isorhamnetin	Isorhamnetin	isorhamnetin 3-O-glucoside	1.2	
			isorhamnetin 3,7-di-O-glucoside	287.8	
			Total isorhamnetin contents	289.0	



Flavonoids "Data Base 1.0"

# 양배추 Cabbage

채소류

## 양배추

플라비노류(Flavanones)

-

플라바놀류(Flavanols)

-

플라본류(Flavones)

-

플라보놀류(Flavonols)

7.1

이소플라본류(Isoflavones)

-

총 플라보노이드(Total flavonoids)

7.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			양배추
Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	5.3
		kaempferol 3-O-sophoroside	0.4
		kaempferol 3-O-sophoroside-7-O-glucoside	1.4
		Total kaempferol contents	7.1



Flavonoids "Data Base 1.0"

# 적양배추

## Red cabbage

(mg/100g dry weight)

적양배추
------

플라바노류(Flavanones)
-

플라바놀류(Flavanols)
-

플라본류(Flavones)
-

플라보놀류(Flavonols)
3.3

이소플라본류(Isoflavones)
-

총 플라보노이드(Total flavonoids)
3.3

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			적양배추
Flavonols	Quercetin	quercetin 3-O-sophoroside	3.3
		Total quercetin contents	3.3



Flavonoids "Data Base 1.0"

# 방울양배추 Brussels sprout

채소류

## 방울양배추

플라비노류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	-
플라보놀류(Flavonols)	14.1

이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	14.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			방울양배추
Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	6.7
		kaempferol 3-O-sophoroside	2.9
		kaempferol 3-O-sophoroside-7-O-glucoside	4.5
		Total kaempferol contents	14.1



# 열무 Young radish

(mg/100g dry weight)

열무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				열무
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-rhamnoside (afzelin)	0.8
-			kaempferol 7-O-rhamnoside	11.3
플라바놀류(Flavanols)			kaempferol 3-O-rhamnoside-7-O-arabinoside	36.4
-			kaempferol 3,7-di-O-rhamnoside (kaempferitrin)	79.1
플라본류(Flavones)			kaempferol 3-O-glucoside-7-O-rhamnoside	53.9
-			kaempferol 3-O-rhamnoside-7-O-glucoside	69.5
플라보놀류(Flavonols)			kaempferol 3-O-rhamnoside-7-O-glucosyl(1→2)rhamnoside (raphanol A*)	2.5
314.0			kaempferol 3-O-rhamnoside-7-O-(6"-O-caffeyl)glucosyl(1→2)rhamnoside (raphanol B*)	10.3
이소플라본류(Isoflavones)			kaempferol 3-O-rhamnoside-7-O-(6"-O-feruloyl)glucosyl(1→2)rhamnoside (raphanol C*)	0.5
-			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6"-O-caffeyl)glucosyl(1→2)rhamnoside (raphanol D*)	10.8
총 플라보노이드(Total flavonoids)			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6"-O-feruloyl)glucosyl(1→2)rhamnoside (raphanol E*)	3.3
314.0			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6"-O-caffeyl)glucosyl(1→2)(4"-O-caffeyl)rhamnoside (raphanol F*)	2.0
			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6"-O-feruloyl)glucosyl(1→2)(4"-O-caffeyl)rhamnoside (raphanol G*)	5.2
			Total kaempferol contents	285.6

\* 신규명명

다음페이지로 이어서



# 열무 Young radish

(mg/100g dry weight)

열무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				열무
Flavonols	Quercetin		quercetin 7-O-rhamnoside	1.3
			quercetin 3-O-rhamnoside-7-O-arabinoside	4.2
			quercetin 3,7-di-O-rhamnoside	2.9
			quercetin 3-O-glucoside-7-O-rhamnoside	6.4
			quercetin 3-O-rhamnoside-7-O-glucoside	13.6
			Total quercetin contents	28.4



# 가을무 Radish(autumn)

(mg/100g dry weight)

가을무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				가을무
플라바논류(Flavanones)			kaempferol 7-O-rhamnoside	0.6
-			kaempferol 3-O-rhamnoside-7-O-arabinoside	1.2
플라바놀류(Flavanols)			kaempferol 3,7-di-O-rhamnoside (kaempferitrin)	0.6
-			kaempferol 3-O-glucoside-7-O-rhamnoside	8.3
플라본류(Flavones)	Flavonols	Kaempferol	kaempferol 3-O-rhamnoside-7-O-glucoside	1.7
-			kaempferol 7-O-glucosyl(1→2)rhamnoside	0.3
플라보놀류(Flavonols)			kaempferol 3-O-rhamnoside-7-O-glucosyl(1→2)rhamnoside (raphanol A*)	0.4
26.0			kaempferol 3-O-rhamnoside-7-O-(6''-O-caffeyl)glucosyl(1→2)rhamnoside (raphanol B*)	1.2
			kaempferol 3-O-rhamnoside-7-O-(6''-O-feruloyl)glucosyl(1→2)rhamnoside (raphanol C*)	0.2
			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6''-O-caffeyl)glucosyl(1→2)rhamnoside (raphanol D*)	0.5
			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6''-O-feruloyl)glucosyl(1→2)rhamnoside (raphanol E*)	0.2
			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6''-O-caffeyl)glucosyl(1→2)(4''-O-caffeyl)rhamnoside (raphanol F*)	0.1
			kaempferol 3-O-glucosyl(1→2)rhamnoside-7-O-(6''-O-feruloyl)glucosyl(1→2)(4''-O-caffeyl)rhamnoside (raphanol G*)	0.3
			Total kaempferol contents	15.6
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
26.0				

\* 신규명명

다음페이지로 이어서



# 가을무 Radish(autumn)

(mg/100g dry weight)

가을무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				가을무
Flavonols	Quercetin		quercetin 7-O-rhamnoside	2.2
			quercetin 3-O-rhamnoside-7-O-arabinoside	1.2
			quercetin 3,7-di-O-rhamnoside	0.9
			quercetin 3-O-glucoside-7-O-rhamnoside	0.8
			quercetin 3-O-rhamnoside-7-O-glucoside	4.7
			quercetin 7-O-glucosyl(1→2)rhamnoside	0.6
			Total quercetin contents	10.4



# 브로콜리

## Broccoli

(mg/100g dry weight)

꽃송이 줄기	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				브로콜리	
				꽃송이	줄기
플라바논류(Flavanones)	Flavonols	Kaempferol	kaempferol 3,7-di-O-glucoside	1.8	-
-			kaempferol 3-O-sophoroside	-	3.7
플라바놀류(Flavanols)			kaempferol 3-O-(2''-O-sinapoyl)sophoroside	-	2.3
-			kaempferol 3-O-sophoroside-7-O-glucoside	1.6	2.2
플라본류(Flavones)			kaempferol 3-O-glucoside-7-O-sophoroside	5.0	0.5
-			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	0.8	0.8
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	2.3	5.9
78.5			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside	-	1.6
이소플라본류(Isoflavones)			kaempferol 3-O-(2''',6'''-di-O-sinapoyl)sophorotrioside	-	3.5
-			kaempferol 3-O-sophoroside-7-O-sophoroside	-	0.7
총플라보노이드(Total flavonoids)			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	2.7	1.1
78.5			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	5.5	3.6
41.6			kaempferol 3-O-(2'''-O-caffeyl)-6'''-O-sinapoyl)sophorotrioside-7-O-glucoside	0.6	-
			kaempferol 3-O-(2'''-O-feruloyl-6'''-O-sinapoyl)sophorotrioside-7-O-glucoside	4.8	0.6
			kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	18.1	6.5
			kaempferol 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-sophoroside	2.3	-
			kaempferol 3-O-(2'''-O-methoxycaffeoyl)sophorotrioside-7-O-sophoroside	0.8	-

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 브로콜리

## Broccoli

채소류

(mg/100g dry weight)

꽃송이	줄기	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)			
					브로콜리			
					꽃송이	줄기		
Flavonols	Kaempferol			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-sophoroside	1.7	0.2		
				kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-sophoroside	2.9	3.0		
				kaempferol 3-O-(2'''-O-caffeyl-6'''-O-sinapoyl)sophorotrioside-7-O-sophoroside	3.9	0.3		
				kaempferol 3-O-(2'''-O-methoxycaffeoyl-6'''-O-sinapoyl)sophorotrioside-7-O-sophoroside	2.4	0.4		
				kaempferol 3-O-(2'''-O-feruloyl-6'''-O-sinapoyl)sophorotrioside-7-O-sophoroside	6.7	0.7		
				kaempferol 3-O-(2'''',6'''-di-O-sinapoyl)sophorotrioside-7-O-sophoroside	14.6	4.0		
				Total kaempferol contents	78.5	41.6		



# 갓 Mustard

(mg/100g dry weight)

갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				갓
플라바논류(Flavanones)			kaempferol	3.1
-			kaempferol 3-O-glucoside (astragalin)	13.1
플라바놀류(Flavanols)			kaempferol 3,7-di-O-glucoside	3.2
-			kaempferol 3-O-sophoroside	7.7
플라본류(Flavones)	Flavonols	Kaempferol	kaempferol 7-O-sophoroside	6.5
-			kaempferol 3-O-(2''-O-caffeyl)sophoroside	5.8
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-feruloyl)sophoroside	8.8
730.6			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside	4.6
이소플라본류(Isoflavones)			kaempferol 3-O-(2''-O-sinapoyl)sophoroside	5.5
-			kaempferol 3-O-sophoroside-7-O-glucoside	8.9
총플라보노이드(Total flavonoids)			kaempferol 3-O-triglucoside	5.3
730.6			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	6.1
			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	9.3
			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	24.9
			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	22.8
			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	1.7
			kaempferol 3-O-(2'''-O-sinapoyl)sophorotriose	2.9

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 갓 Mustard

채소류

(mg/100g dry weight)

갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				갓	
Flavonols	Kaempferol		kaempferol 3-O-triglucoside-7-O-glucoside	7.3	
			kaempferol 3-O-(2''-O-caffeyl)triglucoside-7-O-glucoside	17.4	
			kaempferol 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-glucoside	4.1	
			kaempferol 3-O-(2'''-O-feruloyl)triglucoside-7-O-glucoside	13.8	
			kaempferol 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	2.3	
			kaempferol 3-O-(2'''-O-hydroxyferuloyl)triglucoside-7-O-glucoside	13.1	
			kaempferol 3-O-(2'''-O-hydroxyferuloyl)sophorotrioside-7-O-glucoside	6.0	
			kaempferol 3-O-(2'''-O-sinapoyl)triglucoside-7-O-glucoside	20.3	
	Quercetin		kaempferol 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	9.5	
			Total kaempferol contents	234.0	
Quercetin	Quercetin		quercetin	1.5	
			quercetin 3-O-glucoside (isoquercitrin)	18.3	
			quercetin 3,7-di-O-glucoside	6.2	
			quercetin 3-O-sophoroside	8.3	
			quercetin 7-O-sophoroside	2.3	
			quercetin 3-O-(2''-O-caffeyl)sophoroside	7.4	
			quercetin 3-O-(2''-O-hydroxyferuloyl)sophoroside	6.8	

다음페이지로 이어서



# 갓 Mustard

(mg/100g dry weight)

갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				갓	
Flavonols	Quercetin		quercetin 3-O-(2''-O-feruloyl)sophoroside	6.0	
			quercetin 3-O-(2''-O-sinapoyl)sophoroside	9.5	
			quercetin 3-O-sophoroside-7-O-glucoside	2.0	
			quercetin 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	11.8	
			quercetin 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	8.2	
			quercetin 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	17.8	
			quercetin 3-O-(2'''-O-sinapoyl)sophorotrioside	4.6	
			quercetin 3-O-(2'''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	48.6	
			quercetin 3-O-triglucoside-7-O-glucoside	2.5	
			quercetin 3-O-(2''-O-caffeyl)triglucoside-7-O-glucoside	16.0	
			quercetin 3-O-(2'''-O-caffeyl)sophorotrioside-7-O-glucoside	2.6	
			quercetin 3-O-(2''-O-feruloyl)triglucoside-7-O-glucoside	13.0	
			quercetin 3-O-(2'''-O-feruloyl)sophorotrioside-7-O-glucoside	2.2	
			quercetin 3-O-(2'''-O-hydroxyferuloyl)triglucoside-7-O-glucoside	2.9	
			quercetin 3-O-(2'''-O-hydroxyferuloyl)sophorotrioside-7-O-glucoside	6.9	
			quercetin 3-O-(2''-O-sinapoyl)triglucoside-7-O-glucoside	20.3	
			quercetin 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside	20.5	
Total quercetin contents				246.2	

다음페이지로 이어서



# 갓 Mustard

갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				갓	(mg/100g dry weight)
Flavonols	Isorhamnetin		isorhamnetin	27.7	
			isorhamnetin 3-O-glucoside	138.1	
			isorhamnetin 7-O-glucoside	3.0	
			isorhamnetin 3,7-di-O-glucoside	58.7	
			isorhamnetin 7-O-sophoroside	9.0	
			isorhamnetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	2.3	
			isorhamnetin 3-O-triglucoside	11.6	
			Total isorhamnetin contents	250.4	



# 적갓 Red mustard

(mg/100g dry weight)

적갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				적갓
플라바논류(Flavanones)	Flavonols	Kaempferol	kaempferol 3,7-di-O-glucoside	24.7
-			kaempferol 3-O-sophoroside	3.1
플라바놀류(Flavanols)			kaempferol 3-O-sophoroside-7-O-glucoside	119.4
-			kaempferol 3-O-triglucoside	28.9
플라본류(Flavones)			kaempferol 3-O-(2''-O-caffeyl)sophoroside-7-O-glucoside	9.6
-			kaempferol 3-O-(2''-O-feruloyl)sophoroside-7-O-glucoside	56.4
플라보놀류(Flavonols)			kaempferol 3-O-(2''-O-hydroxyferuloyl)sophoroside-7-O-glucoside	154.9
2154.7			kaempferol 3-O-(2''-O-sinapoyl)sophoroside-7-O-glucoside	174.1
이소플라본류(Isoflavones)			kaempferol 3-O-(2''-O-p-coumaroyl)sophoroside-7-O-glucoside	40.7
-			kaempferol 3-O-triglucoside-7-O-glucoside	68.1
총 플라보노이드(Total flavonoids)	Quercetin		kaempferol 3-O-(2''-O-caffeyl)triglucoside-7-O-glucoside	13.3
2154.7			kaempferol 3-O-(2''-O-feruloyl)triglucoside-7-O-glucoside	43.5
			kaempferol 3-O-(2''-O-hydroxyferuloyl)triglucoside-7-O-glucoside	42.0
			kaempferol 3-O-(2''-O-sinapoyl)triglucoside-7-O-glucoside	84.3
			Total kaempferol contents	863.0
			quercetin 3,7-di-O-glucoside	23.9
			quercetin 3-O-sophoroside	4.0
				다음페이지로 이어서



# 적갓 Red mustard

(mg/100g dry weight)

적갓	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				적갓	
Flavonols	Quercetin	Isorhamnetin	quercetin 3-O-sophoroside-7-O-glucoside	92.6	
			quercetin 3-O-(2"-O-caffeyl)sophoroside-7-O-glucoside	42.5	
			quercetin 3-O-(2"-O-feruloyl)sophoroside-7-O-glucoside	28.5	
			quercetin 3-O-(2"-O-sinapoyl)sophoroside-7-O-glucoside	147.4	
			quercetin 3-O-(2"-O-hydroxyferuloyl)sophoroside-7-O-glucoside	89.0	
			quercetin 3-O-triglucoside-7-O-glucoside	20.1	
			quercetin 3-O-(2"-O-caffeyl)triglucoside-7-O-glucoside	11.7	
			quercetin 3-O-(2"-O-feruloyl)triglucoside-7-O-glucoside	8.1	
			quercetin 3-O-(2"-O-hydroxyferuloyl)triglucoside-7-O-glucoside	10.6	
			quercetin 3-O-(2"-O-sinapoyl)triglucoside-7-O-glucoside	84.8	
Total quercetin contents				563.2	
Isorhamnetin	Isorhamnetin		isorhamnetin 3-O-glucoside	22.6	
			isorhamnetin 3,7-di-O-glucoside	623.9	
			isorhamnetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	19.3	
			isorhamnetin 3-O-sophoroside-7-O-glucoside	17.4	
			isorhamnetin 3-O-triglucoside	45.3	
			Total isorhamnetin contents	728.5	



# 냉이 Shepherd's purse

(mg/100g dry weight)

냉이	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				냉이
플라바논류(Flavanones)	Flavones	Apigenin	apigenin 7-O-glucoside (cosmosiin)	7.0
-			apigenin 6-C-glucoside (isovitexin)	5.9
플라바놀류(Flavanols)			apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	19.5
-			apigenin 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylvitexin, bursakonin*)	4.5
플라본류(Flavones)			apigenin 6-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylisovitexin, isobursakonin*)	1.7
1538.7			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	2.9
플라보놀류(Flavonols)			apigenin 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylisovitexin, isobursakotexin*)	4.1
96.1			Total apigenin contents	45.6
이소플라본류(Isoflavones)		Luteolin	luteolin 7-O-glucoside (cynaroside)	37.4
-			luteolin 8-C-glucoside (orientin)	242.0
총플라보노이드(Total flavonoids)			luteolin 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylorientin, bursakolin*)	324.2
1634.8			luteolin 6-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylisoorientin, isobursakolin*)	192.5
			luteolin 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylisoorientin, isobursakorientin*)	625.2
			Total luteolin contents	1421.3
		Chrysoeriol	chrysoeriol 6-C-glucoside (isoscoparin)	7.9
			chrysoeriol 7-O-glucoside (thermopsiside)	4.1
			chrysoeriol 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylscoparin, bursakorol*)	11.4

\* 신규명명

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# 냉이

## Shepherd's purse

(mg/100g dry weight)

냉이	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				냉이
Flavones	Chrysoeriol	Kaempferol	chrysoeriol 6-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylisoscoparin, isobursakorol*)	19.5
			chrysoeriol 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylisoscoparin, isobursakoparin*)	28.9
			Total chrysoeriol contents	71.8
Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	4.3	
			kaempferol 3-O-(6"-O-malonyl)glucoside	2.7
		kaempferol 3-O-rutinoside (nicotiflorin)	2.0	
		kaempferol 3-O-(3'''-O-glucosyl)rutinoside	2.4	
		Total kaempferol contents	11.4	
	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	21.3	
		quercetin 3-O-(6"-O-malonyl)glucoside	34.4	
		quercetin 3-O-rutinoside (rutin)	7.8	
		quercetin 3-O-(3'''-O-glucosyl)rutinoside	21.2	
		Total quercetin contents	84.7	

\* 신규명명



# 보리순 Barley sprout

(mg/100g dry weight)

보리순	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				보리순
플라바논류(Flavanones)	Flavones	Apigenin	apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside)	2.5
-			apigenin 6-C-glucoside-8-C-arabinoside (schaftoside)	90.7
플라바놀류(Flavanols)			apigenin 6-C-glucoside (isovitexin)	16.4
-			isovitexin 7-O-(6"-O-feruloyl)glucoside (6"-O-feruloylsaponarin)	39.1
플라본류(Flavones)			isovitexin 7-O-(6"-O-feruloyl)glucoside-4'-O-glucoside	7.7
1517.8			isovitexin 7-O-(6"-O-sinapoyl)glucoside (6"-O-sinapoylsaponarin)	21.8
플라보놀류(Flavonols)			isovitexin 7-O-glucoside (saponarin)	255.8
-			isovitexin 7-O-rutinoside	34.7
이소플라본류(Isoflavones)		Luteolin	Total apigenin contents	468.7
-			luteolin 6-C-glucoside (isoorientin)	58.0
총플라보노이드(Total flavonoids)			isoorientin 7-O-(6"-O-feruloyl)glucoside (6"-O-feruloyllutonarin)	105.2
1517.8			isoorientin 7-O-(6"-O-p-coumaroyl)glucoside (6"-O-p-coumaroyllutonarin)	1.8
			isoorientin 7-O-(6"-O-sinapoyl)glucoside (6"-O-sinapoyllutonarin)	45.0
			isoorientin 7-O-glucoside (lutonarin)	641.3

다음페이지로 이어서



# 보리순 Barley sprout

(mg/100g dry weight)

보리순	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)			
				보리순			
Flavones	Chrysoeriol		chrysoeriol 6-C-glucoside-8-C-arabinoside	4.3			
			chrysoeriol 7-O-rutinoside	4.6			
			chrysoeriol 6-C-glucoside (isoscoparin)	17.0			
			isoscoparin 7-O-(6"-O-feruloyl)glucoside	6.2			
			isoscoparin 7-O-(6"-O-sinapoyl)glucoside	3.9			
			isoscoparin 7-O-glucoside	36.5			
			isoscoparin 7-O-rutinoside	8.4			
	Tricin		Total chrysoeriol contents	80.9			
			tricin	28.3			
			tricin 7-O-glucoside	8.1			
			tricin 7-O-rutinoside	8.3			
			Total tricin contents	44.7			



Flavonoids "Data Base 1.0"

# 적상추 Red lettuce

(mg/100g dry weight)

적상추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				적상추
플라바노류(Flavanones)	Flavones	Luteolin	luteolin 7-O-glucoside (cynaroside)	1160.8
-			luteolin 7-O-glucuronide	100.6
-			luteolin 7-O-(6"-O-malonyl)glucoside	4.2
-			Total luteolin contents	1265.6
플라바놀류(Flavanols)		Quercetin	quercetin 3-O-glucoside (isoquercitrin)	138.0
-			quercetin 3-O-glucuronide (miquelianin)	254.8
플라본류(Flavones)			quercetin 3-O-(6"-O-malonyl)glucoside	1866.3
1265.6			quercetin 3-O-(4"-O-malonyl)glucuronide	8.8
플라보놀류(Flavonols)			quercetin 3-O-glucoside-7-O-glucuronide	9.5
2370.9			quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	64.2
이소플라본류(Isoflavones)			quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucuronide	29.3
-			Total quercetin contents	2370.9
총 플라보노이드(Total flavonoids)				
3636.5				



# 적꽃상추

Red lettuce

적꽃상추
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플라바논류(Flavanones)	-
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플라바놀류(Flavanols)	-
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플라본류(Flavones)	2257.9
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플라보놀류(Flavonols)	1446.8
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이소플라본류(Isoflavones)	-
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총 플라보노이드(Total flavonoids)	3704.7
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대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			적꽃상추
Flavones	Luteolin	luteolin 7-O-glucoside (cynaroside)	2045.4
		luteolin 7-O-glucuronide	205.2
		luteolin 7-O-(6"-O-malonyl)glucoside	7.3
		Total luteolin contents	2257.9
		quercetin 3-O-glucoside (isoquercitrin)	94.8
	Quercetin	quercetin 3-O-glucuronide (miquelianin)	78.3
		quercetin 3-O-(6"-O-malonyl)glucoside	1222.6
		quercetin 3-O-(4"-O-malonyl)glucuronide	5.4
		quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	25.9
		quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucuronide	19.8
		Total quercetin contents	1446.8



Flavonoids "Data Base 1.0"

# 적포기상추

## Red lettuce

(mg/100g dry weight)

적포기상추	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				적포기상추
플라바논류(Flavanones) -	Flavones	Luteolin	luteolin 7-O-glucoside (cynaroside)	1098.5
플라바놀류(Flavanols) -			luteolin 7-O-glucuronide	244.9
플라본류(Flavones) 1348.3			luteolin 7-O-(6"-O-malonyl)glucoside	4.9
플라보놀류(Flavonols) 810.9			Total luteolin contents	1348.3
이소플라본류(Isoflavones) -		Quercetin	quercetin 3-O-glucoside (isoquercitrin)	62.0
총 플라보노이드(Total flavonoids) 2159.2			quercetin 3-O-glucuronide (miquelianin)	49.9
			quercetin 3-O-(6"-O-malonyl)glucoside	666.3
			quercetin 3-O-(4"-O-malonyl)glucuronide	3.3
			quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside	14.2
			quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucuronide	15.2
			Total quercetin contents	810.9



# 셀러리 Celery

		개별성분 (Individual components)		함량(Contents)
				셀러리
대분류 (Classes)	소분류 (Sub-classes)			
셀러리	Flavonoids	Apigenin	apigenin 7-O-glucoside (cosmosiin)	7.5
			apigenin 7-O-(6"-O-malonyl)glucoside	7.7
			apigenin 7-O-(2"-O-apiosyl)glucoside (apiin)	520.9
			apigenin 7-O-(2"-O-apiosyl-4"-O-malonyl)glucoside (4"-O-malonylapiin)	35.8
			apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin)	274.4
			apigenin 7-O-[2"-O-(5"-O-feruloyl)apiosyl]glucoside	7.4
			Total apigenin contents	853.7
		Flavones	luteolin 7-O-glucoside (cynaroside)	40.6
			luteolin 7-O-(6"-O-malonyl)glucoside	19.3
			luteolin 7-O-(2"-O-apiosyl)glucoside	227.6
			luteolin 7-O-(2"-O-apiosyl-4"-O-malonyl)glucoside	12.4
			luteolin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	121.0
총 플라보노이드(Total flavonoids)	Flavonols	Luteolin	luteolin 7-O-[2"-O-(5"-O-feruloyl)apiosyl]glucoside	3.1
			Total luteolin contents	424.0
			chrysoeriol 7-O-glucoside (thermopsoside)	6.6
			chrysoeriol 7-O-(6"-O-malonyl)glucoside	5.3
			chrysoeriol 7-O-(2"-O-apiosyl)glucoside	182.0
		Chrysoeriol	다음페이지로 이어서	



Flavonoids "Data Base 1.0"

# 셀러리 Celery

(mg/100g dry weight)

셀러리	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				셀러리
Flavones	Chrysoeriol		chrysoeriol 7-O-(2"-O-apiosyl-4"-O-malonyl)glucoside	20.1
			chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside	187.8
			chrysoeriol 7-O-[2"-O-(5"-O-feruloyl)apiosyl]glucoside	2.6
			Total chrysoeriol contents	404.4



# 시금치 Spinach

				(mg/100g dry weight)
			함량(Contents)	
			시금치	
시금치	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	
플라바논류(Flavanones) -			patuletin 3-O-glucoside	15.3
플라바놀류(Flavanols) -			patuletin 3-O-gentiobioside	79.7
플라본류(Flavones) 2288.2	Flavones	Patuletin	patuletin 3-O-(2"-O-p-coumaroylglucosyl)(1→6)glucoside	9.1
플라보놀류(Flavonols) -			patuletin 3-O-(2"-O-feruloylglucosyl)(1→6)glucoside	40.1
이소플라본류(Isoflavones) -			patuletin 3-O-glucosyl(1→6)-[apiosyl(1→2)]-glucoside	191.2
총플라보노이드(Total flavonoids) 2288.2			patuletin 3-O-(2"-O-p-coumaroylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside	37.9
			patuletin 3-O-(2"-O-feruloylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside	45.0
			Total patuletin contents	418.3
			spinacetin 3-O-gentiobioside	143.7
	Flavones	Spinacetin	spinacetin 3-O-(2"-O-feruloylglucosyl)(1→6)glucoside	40.1
			spinacetin 3-O-glucosyl(1→6)-[apiosyl(1→2)]-glucoside	120.1
			spinacetin 3-O-(2"-O-p-coumaroylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside	14.7
			spinacetin 3-O-(2"-O-feruloylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside	61.2
			Total spinacetin contents	379.8
			spinatoside 4'-O-glucuronide	447.0
			Total spinatoside contents	447.0

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 시금치 Spinach

(mg/100g dry weight)

시금치	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				시금치
Flavones	Jaceidin	jaceidin 4'-O-glucuronide		135.8
		Total jaceidin contents		135.8
	Methoxy flavone	5,3',4'-trihydroxy-3-methoxy-6:7-methylenedioxyflavone 4'-O-glucuronide (spinaasonin*)		771.1
		5,4'-dihydroxy-3-methoxy-6:7-methylenedioxyflavone 4'-O-glucuronide (spinaasanin*)		14.6
		5,4'-dihydroxy-3,3'-dimethoxy-6:7-methylenedioxyflavone 4'-O-glucuronide (spinaasocin*)		121.6
		Total methoxy flavone contents		907.3

\* 신규명명



Flavonoids "Data Base 1.0"

# 아스파라거스 Asparagus

채소류

## 아스파라거스

플라비노류(Flavanones)  
-

플라바놀류(Flavanols)  
-

플라본류(Flavones)  
-

플라보놀류(Flavonols)  
347.0

이소플라본류(Isoflavones)  
-

총 플라보노이드(Total flavonoids)  
347.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			아스파라거스	(mg/100g dry weight)
Flavonols	Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	5.6	
		Total kaempferol contents	5.6	
		quercetin	2.4	
	Quercetin	quercetin 3-O-rutinoside (rutin)	289.1	
		quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A*)	5.5	
		quercetin 3-O-(2"-O-glucosyl-6"-O-rhamnosyl)glucoside	28.1	
	Isorhamnetin	Total quercetin contents	325.1	
		isorhamnetin 3-O-rutinoside (narcissin)	14.7	
		isorhamnetin 3-O-(2"-O-glucosyl-6"-O-rhamnosyl)glucoside	1.6	
		Total isorhamnetin contents	16.3	

\* 신규명명


**양파** Onion

껍질 제거	데친것
플라바노류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	-
플라보놀류(Flavonols)	930.0      241.8
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	930.0      241.8

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			양파	
			껍질제거	데친 것
Flavonols	Kaempferol	kaempferol 4'-O-glucoside	3.0	0.9
		kaempferol 3,4'-di-O-glucoside (allixin)	2.8	0.4
		Total kaempferol contents	5.8	1.3
		quercetin	3.7	2.1
		naascenin A* (quercetin derivatives)	-	-
	Quercetin	naascenin B* (quercetin derivatives)	-	-
		naascenin C* (quercetin dimer)	-	-
		naascenin E* (quercetin trimer)	-	-
		quercetin 3-O-glucoside (isoquercitrin)	7.8	3.3
		quercetin 4'-O-glucoside (spiraeside)	385.3	138.5
Isoflavonoids	Quercetin	naascenin F* (quercetin 4'-O-glucoside derivatives)	-	-
		naascenin D* (4'-O-glucoside of quercetin dimer)	-	-
		quercetin 7,4'-di-O-glucoside	5.8	2.6
		quercetin 3,4'-di-O-glucoside	420.4	84.3
		quercetin 3,7,4'-tri-O-glucoside	3.0	0.5
	Total quercetin contents	Total quercetin contents	826.0	231.3

\* 신규명명

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 양파 Onion

채소류

(mg/100g dry weight)

껍질 제거	데친 것	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)			
					양파			
					껍질제거	데친 것		
Flavonols	Isorhamnetin			isorhamnetin 4'-O-glucoside	79.6	7.1		
				isorhamnetin 3,4'-di-O-glucoside	18.6	2.1		
				Total isorhamnetin contents	98.2	9.2		



# 자색양파

Purple onion

(mg/100g dry weight)

껍질	껍질제거	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					자색양파	
					껍질	껍질제거
플라바노류(Flavanones)	-	Flavonols	Kaempferol	kaempferol 4'-O-glucoside	2.9	3.1
				kaempferol 3,4'-di-O-glucoside (allixinic)	-	5.7
				Total kaempferol contents	2.9	8.8
				quercetin	8312.6	5.0
				naascenin A* (quercetin derivatives)	69.8	-
				naascenin B* (quercetin derivatives)	50.2	-
				naascenin C* (quercetin dimer)	226.7	-
				naascenin E* (quercetin trimer)	144.2	-
				quercetin 3-O-glucoside (isoquercitrin)	16.7	18.6
				quercetin 4'-O-glucoside (spiraeside)	6083.3	432.6
플라보놀류(Flavonols)	15369.8	Quercetin		naascenin F* (quercetin 4'-O-glucoside derivatives)	68.4	-
				naascenin D* (4'-O-glucoside of quercetin dimer)	120.8	-
				quercetin 7,4'-di-O-glucoside	101.6	12.9
				quercetin 3,4'-di-O-glucoside	121.8	2079.0
				quercetin 3,7,4'-tri-O-glucoside	-	12.3
				Total quercetin contents	15316.1	2560.4
이소플라본류(Isoflavones)	-					
총 플라보노이드(Total flavonoids)	15369.8					

\* 신규명명

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 자색양파

Purple onion

채소류

(mg/100g dry weight)

껍질	껍질제거	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)			
					자색양파			
					껍질	껍질제거		
Flavonols	Isorhamnetin			isorhamnetin 4'-O-glucoside	39.5	33.7		
				isorhamnetin 3,4'-di-O-glucoside	11.3	21.5		
				Total isorhamnetin contents	50.8	55.2		



# 토마토 Tomato

토마토
플라바노류(Flavanones) 0.3
플라바놀류(Flavanols) -
플라본류(Flavones) -
플라보놀류(Flavonols) 20.3
이소플라본류(Isoflavones) -
칼콘류(Chalcones) 10.7
총 플라보노이드(Total flavonoids) 31.3

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			토마토
<b>Flavanones</b>	<b>Naringenin</b>	naringenin	0.3
		Total naringenin contents	0.3
	<b>Kaempferol</b>	kaempferol 3-O-rutinoside (nicotiflorin)	1.2
		kaempferol 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrol*)	0.3
	<b>Flavonols</b>	Total kaempferol contents	1.5
		quercetin 3-O-rutinoside (rutin)	10.2
		quercetin 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrotin*)	6.1
		quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A)	2.5
<b>Isoflavones</b>	<b>Quercetin</b>	Total quercetin contents	18.8
		phloretin 3',5'-di-C-glucoside	5.4
	<b>Phloretin</b>	Total phloretin contents	5.4
		naringenin chalcone (chalconaringenin)	5.3
<b>Chalcones</b>	<b>Naringenin chalcone</b>	Total naringenin chalcone contents	5.3

\* 신규명명



Flavonoids "Data Base 1.0"

# 흑토마토

## Purple tomato

(mg/100g dry weight)

흑토마토	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				흑토마토
플라바노류(Flavanones)	Flavanones	Naringenin	naringenin	0.1
0.1			Total naringenin contents	0.1
플라바놀류(Flavanols)		Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	0.7
-			kaempferol 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrol*)	0.7
플라본류(Flavones)		Flavonols	Total kaempferol contents	1.4
-			quercetin 3-O-rutinoside (rutin)	8.1
플라보놀류(Flavonols)			quercetin 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrotin*)	13.4
26.2			quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A*)	3.3
이소플라본류(Isoflavones)		Phloretin	Total quercetin contents	24.8
-			phloretin 3',5'-di-C-glucoside	3.8
칼콘류(Chalcones)		Chalcones	Total phloretin contents	3.8
5.5			naringenin chalcone (chalconaringenin)	1.7
총 플라보노이드(Total flavonoids)		Naringenin chalcone	Total naringenin chalcone contents	1.7
31.8				

\* 신규명명



Flavonoids "Data Base 1.0"

# 방울토마토 Cherry tomato

(mg/100g dry weight)

방울토마토	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				방울토마토
플라바노류(Flavanones)	Flavanones	Naringenin	naringenin	2.3
2.3			Total naringenin contents	2.3
플라바놀류(Flavanols)		Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	7.8
-			kaempferol 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrol*)	1.0
플라본류(Flavones)			Total kaempferol contents	8.8
-		Flavonols	quercetin 3-O-rutinoside (rutin)	247.2
플라보놀류(Flavonols)			quercetin 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrotin*)	9.0
271.5			quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A*)	6.5
이소플라본류(Isoflavones)			Total quercetin contents	262.7
-		Phloretin	phloretin 3',5'-di-C-glucoside	30.5
칼콘류(Chalcones)			Total phloretin contents	30.5
95.9		Naringenin chalcone	naringenin chalcone (chalconaringenin)	65.4
총 플라보노이드(Total flavonoids)			Total naringenin chalcone contents	65.4
369.7	* 신규명명			



# 대추방울토마토

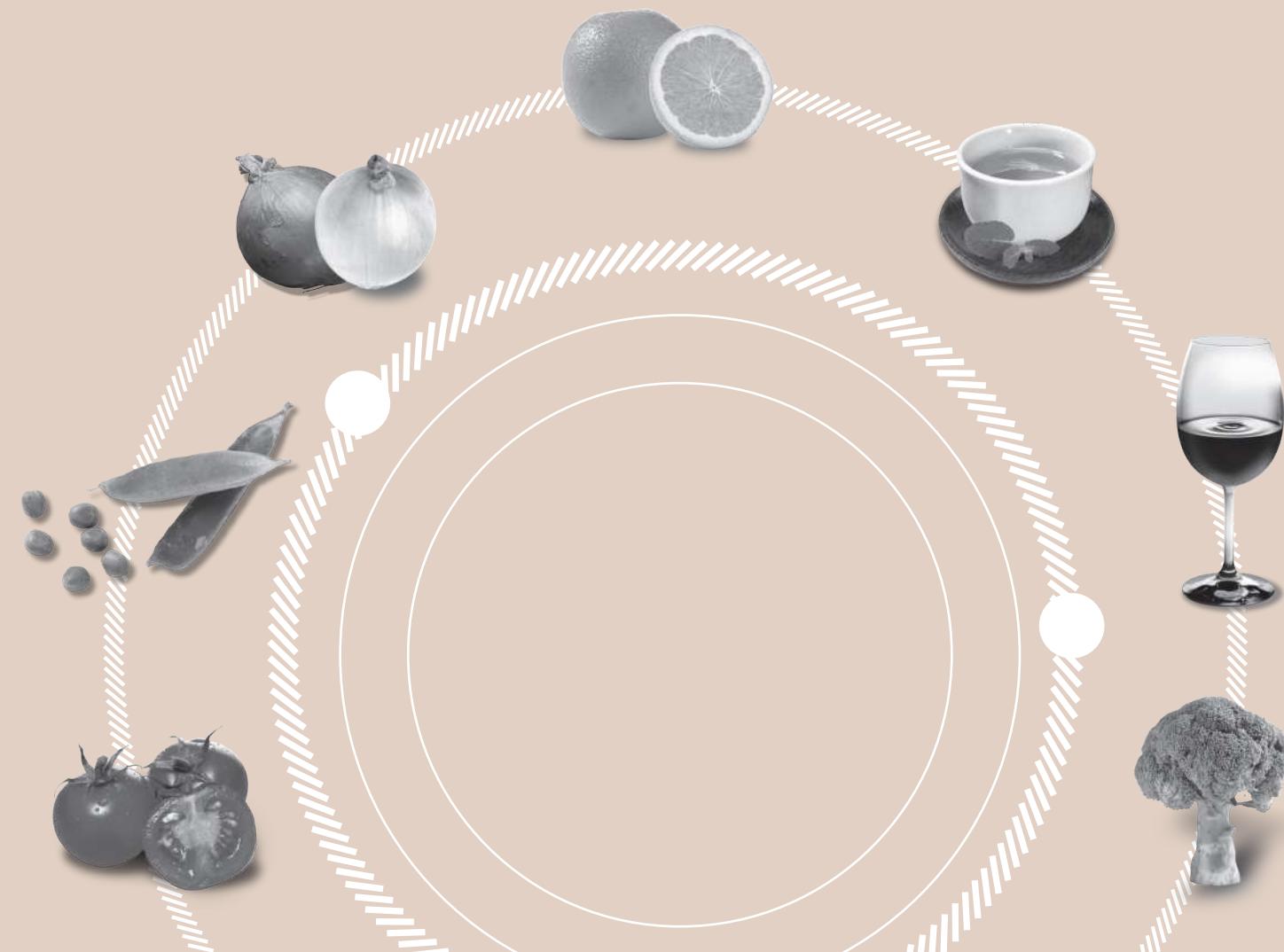
Jujube-shaped cherry tomato

(mg/100g dry weight)

대추방울토마토	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				대추방울토마토
플라바노류(Flavanones) 0.7	Flavanones	Naringenin	naringenin Total naringenin contents	0.7 0.7
플라바놀류(Flavanols) -		Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin) kaempferol 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrol*) Total kaempferol contents	2.2 1.6 3.8
플라본류(Flavones) -	Flavonols	Quercetin	quercetin 3-O-rutinoside (rutin) quercetin 3-O-rhamnosyl (1→6)-(2"-O-apiosyl)glucoside (solagrotin*) quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A*) Total quercetin contents	26.8 5.2 8.1 40.1
플라보놀류(Flavonols) 43.9		Phloretin	phloretin 3',5'-di-C-glucoside Total phloretin contents	6.8 6.8
이소플라본류(Isoflavones) -	Chalcones	Naringenin chalcone	naringenin chalcone (chalconaringenin) Total naringenin chalcone contents	17.7 17.7
칼콘류(Chalcones) 24.5				
총 플라보노이드(Total flavonoids) 69.1				

\* 신규명명

06/ 버섯류  
Mushrooms





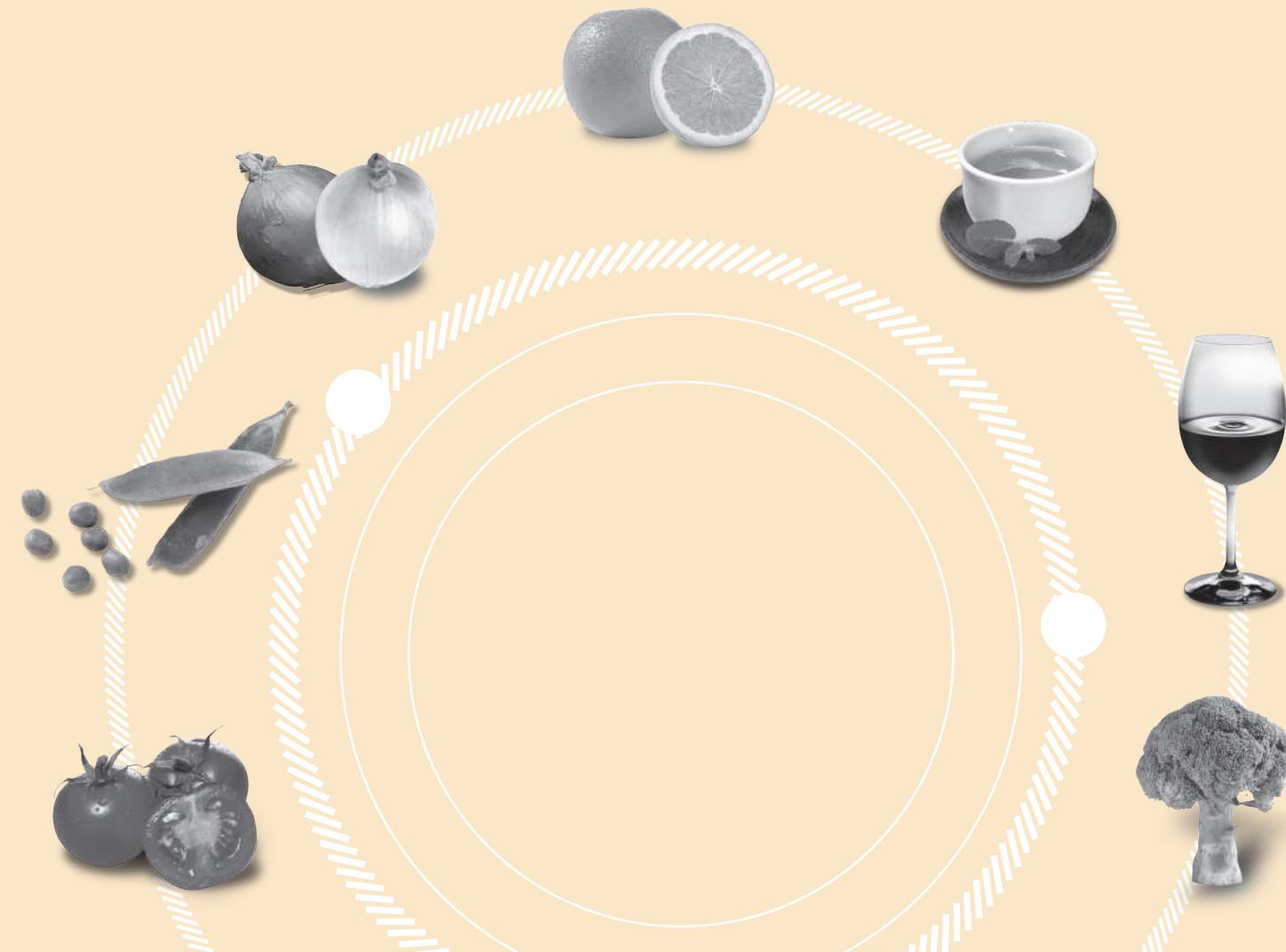
Flavonoids "Data Base 1.0"

## 버섯류 Mushroom

(mg/100g dry weight)

	플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
느타리버섯	-	-	-	-	-	-
새송이버섯	-	-	-	-	-	-
양송이버섯	-	-	-	-	-	-
팽이버섯	-	-	-	-	-	-

07/ 과일류  
Fruits





Flavonoids "Data Base 1.0"

# 감나무잎

## Persimmon leaf

(mg/100g dry weight)

단감나무   대봉감나무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				감나무 잎	
				단감나무	대봉감나무
플라바논류(Flavanones)	Flavonols	Kaempferol	kaempferol	9.5	11.8
			kaempferol 3-O-xyloside	58.6	38.5
			kaempferol 3-O-arabinoside (juglalin)	12.0	9.7
			kaempferol 3-O-galactoside (trifolin)	425.6	302.9
			kaempferol 3-O-glucoside (astragalin)	855.1	607.4
			kaempferol 3-O-(2"-O-galloyl)galactoside	249.6	298.1
			kaempferol 3-O-(2"-O-galloyl)glucoside	460.5	461.1
			Total kaempferol contents	2070.9	1729.5
			quercetin	8.4	7.8
			quercetin 3-O-xyloside (reynoutrin)	21.6	14.4
플라보놀류(Flavonols)	Quercetin		quercetin 3-O-arabinoside (gvajaverin)	57.0	35.3
			quercetin 3-O-galactoside (hyperoside)	380.4	179.4
			quercetin 3-O-glucoside (isoquercitrin)	743.5	399.4
			quercetin 3-O-(2"-O-galloyl)galactoside	131.8	122.5
			quercetin 3-O-(2"-O-galloyl)glucoside	284.2	224.2
			Total quercetin contents	1626.9	983.0
이소플라본류(Isoflavones)					
총 플라보노이드(Total flavonoids)					

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 감나무잎

## Persimmon leaf

(mg/100g dry weight)

단감나무   대봉감나무	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				감나무 잎	
				단감나무	대봉감나무
Flavonols	Isorhamnetin		isorhamnetin 3-O-galactoside	40.9	35.1
			isorhamnetin 3-O-glucoside	75.9	93.9
			Total isorhamnetin contents	116.8	129.0
	Myricetin		myricetin 3-O-galactoside	48.9	30.9
			myricetin 3-O-glucoside (isomyricitrin)	97.7	58.8
			Total myricetin contents	146.6	89.7



Flavonoids "Data Base 1.0"

## 감 Persimmon

(mg/100g dry weight)

	플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
단감	-	-	-	-	-	-
대봉감	-	-	-	-	-	-



Flavonoids "Data Base 1.0"

## 곶감 Dried persimmon

(mg/100g dry weight)

	플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
반건시	-	-	-	-	-	-
건시	-	-	-	-	-	-



Flavonoids "Data Base 1.0"

## 홍시 Ripe persimmon

(mg/100g dry weight)

플라바논류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
-	-	-	-	-	-

홍시



# 유자 Citron

(mg/100g dry weight)

유자	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				유자
플라바논류(Flavanones)	Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	558.8
2034.5			naringenin 7-O-neohesperidoside (naringin)	304.4
플라바놀류(Flavanols)			naringenin 7-O-(2",6"-di-O-rhamnosyl)glucoside	65.5
-			naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside)	50.8
플라본류(Flavones)			naringenin 7-O-neohesperidoside-4'-O-glucoside (naringin 4'-O-glucoside)	18.8
48.4			naringenin 7-O-(2",6"-di-O-rhamnosyl)glucoside-4'-O-glucoside	26.3
플라보놀류(Flavonols)			Total naringenin contents	1024.6
-		Isosakuranetin	isosakuranetin 7-O-rutinoside (didymin)	21.3
이소플라본류(Isoflavones)			isosakuranetin 7-O-neohesperidoside (poncirin)	12.2
-			Total isosakuranetin contents	33.5
총플라보노이드(Total flavonoids)		Eriodictyol	eriodictyol 7-O-rutinoside (eriocitrin)	3.8
2082.9			eriodictyol 7-O-neohesperidoside (neobericitrin)	7.7
			Total eriodictyol contents	11.5
		Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	552.1
			hesperetin 7-O-neohesperidoside (neohesperidin)	276.8
			hesperetin 7-O-(2",6"-di-O-rhamnosyl)glucoside	136.0
			Total hesperetin contents	964.9

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 유자 Citron

(mg/100g dry weight)

유자	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				유자
Flavones	Apigenin	Apigenin	apigenin 7-O-rutinoside (isorhoifolin)	2.9
			apigenin 7-O-neohesperidoside (rhoifolin)	3.9
			apigenin 6,8-di-C-glucoside (vicenin-2)	21.7
	Chrysoeriol	Chrysoeriol	Total apigenin contents	28.5
			chrysoeriol 6,8-di-C-glucoside (stellarin-2)	17.1
	Diosmetin	Diosmetin	Total chrysoeriol contents	17.1
			diosmetin 7-O-rutinoside (diosmin)	2.8
			Total diosmetin contents	2.8



Flavonoids "Data Base 1.0"

# 오렌지 Orange

(mg/100g dry weight)

과육	과피	전체
플라바논류(Flavanones)		
896.8	1202.1	1410.5
플라바놀류(Flavanols)		
-	-	-
플라본류(Flavones)		
53.4	308.0	209.1
플라보놀류(Flavonols)		
-	-	-
이소플라본류(Isoflavones)		
-	-	-
총플라보노이드(Total flavonoids)		
950.2	1510.1	1619.6

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			오렌지		
			과육	과피	전체
Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	203.3	133.2	191.9
		naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside)	51.4	47.1	56.2
		Total naringenin contents	254.7	180.3	248.1
	Isosakuranetin	isosakuranetin 7-O-rutinoside (didymin)	86.4	56.7	81.5
		Total isosakuranetin contents	86.4	56.7	81.5
	Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	555.7	965.1	1080.9
		Total hesperetin contents	555.7	965.1	1080.9
	Methoxy flavone	5,6,7,4'-tetramethoxyflavone (tetra-O-methylscutellarein)	-	13.6	8.3
		5,6,7,3',4'-pentamethoxyflavone (sinensetin)	-	60.5	35.4
		5,6,7,8,4'-pentamethoxyflavone (tangeretin)	-	0.7	0.4
		3,5,6,7,3',4'-hexamethoxyflavone (quercetogetin)	-	17.0	10.0
		5,6,7,8,3',4'-hexamethoxyflavone (nobiletin)	-	75.5	44.7
Flavones	Apigenin	3,5,6,7,8,3',4'-heptamethoxyflavone	-	38.6	23.1
		Total methoxy flavone contents	-	205.9	121.9
	Apigenin	apigenin 8-C-(2"-O-xylosyl)glucoside (2"-O-xylosylvitexin)	6.1	12.0	8.7
		apigenin 6,8-di-C-glucoside (vicenin-2)	43.5	27.9	45.6
		Total apigenin contents	49.6	39.9	54.3

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 오렌지 Orange

(mg/100g dry weight)

과육	과피	전체	개별성분 (Individual components)	함량(Contents)		
				오렌지		
				과육	과피	전체
Flavones	Luteolin		luteolin 7-O-rutinoside (scolymoside)	-	13.1	4.4
			luteolin 6,8-di-C-glucoside (lucenin-2)	0.6	8.2	2.8
			Total luteolin contents	0.6	21.3	7.2
	Chrysoeriol		chrysoeriol 7-O-rutinoside	-	8.1	4.4
			chrysoeriol 6,8-di-C-glucoside (stellarin-2)	-	22.6	13.9
			Total chrysoeriol contents	-	30.7	18.3
	Diosmetin		diosmetin 7-O-rutinoside (diosmin)	0.7	4.3	3.6
			diosmetin 6,8-di-C-glucoside (lucenin-2 4'-methyl ether)	2.5	5.9	3.8
			Total diosmetin contents	3.2	10.2	7.4



# 자몽 Grapefruit

(mg/100g dry weight)

과육 과피 전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				자몽		
				과육	과피	전체
플라바논류(Flavanones)	Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	262.3	538.0	289.4
1492.3   7102.3   3381.0			naringenin 7-O-neohesperidoside (naringin)	1018.2	5688.8	2713.6
-   -   -			naringenin 7-O-(4"-O-malonyl)rutinoside (4"-O-malonylnarirutin)	4.1	29.3	8.6
플라바놀류(Flavanols)			naringenin 7-O-(4"-O-malonyl)neohesperidoside (4"-O-malonylnaringin)	51.7	262.5	98.9
-   -   -			naringenin 7-O-(2"-O-rhamnosyl)(6"-O-3'''-hydroxy-3'''-methylglutaryl)glucoside (melitidin)	13.5	34.5	18.2
플라본류(Flavones)			naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside)	20.4	87.5	40.9
39.2   86.2   45.8			naringenin 7-O-neohesperidoside-4'-O-glucoside (naringin 4'-O-glucoside)	13.9	87.7	41.3
-   -   -		Isosakuranetin	Total naringenin contents	1384.1	6728.3	3210.9
플라보놀류(Flavonols)			isosakuranetin 7-O-rutinoside (didymin)	12.4	26.6	12.7
-   -   -			isosakuranetin 7-O-neohesperidoside (poncirin)	56.1	306.5	123.6
이소플라본류(Isoflavones)		Hesperetin	Total isosakuranetin contents	68.5	333.1	136.3
-   -   -			hesperetin 7-O-rutinoside (hesperidin)	17.1	8.1	11.9
총 플라보노이드(Total flavonoids)			hesperetin 7-O-neohesperidoside (neohesperidin)	22.6	32.8	21.9
1531.5   7188.5   3426.8			Total hesperetin contents	39.7	40.9	33.8

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 자몽 Grapefruit

(mg/100g dry weight)

과육   과피   전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				자몽		
				과육	과피	전체
Flavones	Methoxy flavone		5,6,7,3',4'-pentamethoxyflavone (sinensetin)	-	1.4	0.5
			5,6,7,8,4'-pentamethoxyflavone (tangeretin)	-	7.3	2.5
			5,6,7,8,3',4'-hexamethoxyflavone (nobiletin)	-	25.1	9.0
			3,5,6,7,8,3',4'-heptamethoxyflavone	-	12.3	3.2
			Total methoxy flavone contents	-	46.1	15.2
	Apigenin		apigenin 7-O-neohesperidoside (rhoifolin)	4.9	8.1	2.8
			apigenin 6,8-di-C-glucoside (vicenin-2)	34.3	32.0	27.8
			Total apigenin contents	39.2	40.1	30.6



Flavonoids "Data Base 1.0"

# 한라봉 Hanlabong

(mg/100g dry weight)

과육	과피	전체
플라바논류(Flavanones)		
834.6	2878.9	1119.8
플라바놀류(Flavanols)		
-	-	-
플라본류(Flavones)		
53.0	414.1	160.7
플라보놀류(Flavonols)		
-	-	-
이소플라본류(Isoflavones)		
-	-	-
총플라보노이드(Total flavonoids)		
887.6	3293.0	1280.5

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			한라봉		
			과육	과피	전체
Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	398.8	914.0	325.5
		naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside)	65.8	107.0	58.2
		Total naringenin contents	464.6	1021.0	383.7
	Isosakuranetin	isosakuranetin 7-O-rutinoside (didymin)	59.8	166.9	60.7
		Total isosakuranetin contents	59.8	166.9	60.7
	Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	310.2	1691.0	675.4
		Total hesperetin contents	310.2	1691.0	675.4
	Flavones	5,7,8,4'-tetramethoxyflavone (tetra-O-methylisoscitellarein)	-	6.6	1.7
		5,6,7,4'-tetramethoxyflavone (tetra-O-methylscutellarein)	-	70.0	16.3
		5,7,8,3',4'-pentamethoxyflavone (isosinensetin)	-	5.7	1.5
		5,6,7,3',4'-pentamethoxyflavone (sinensetin)	-	53.4	13.4
		5,6,7,8,4'-pentamethoxyflavone (tangeretin)	-	21.4	6.7
		3,5,6,7,3',4'-hexamethoxyflavone (quercetogetin)	-	23.5	5.7
		5,6,7,8,3',4'-hexamethoxyflavone (nobiletin)	-	45.4	14.5
	Methoxy flavone	3,5,6,7,8,3',4'-heptamethoxyflavone	-	34.2	13.4
		Total methoxy flavone contents	-	260.2	73.2

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 한라봉 Hanlabong

(mg/100g dry weight)

과육    과피    전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				한라봉		
				과육	과피	전체
Flavones	Apigenin	Apigenin	apigenin 8-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylvitexin)	6.6	10.5	8.3
			apigenin 6-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylisovitexin)	3.9	2.1	1.9
			apigenin 7-O-rutinoside (isorhoifolin)	4.4	33.3	9.1
			apigenin 6,8-di-C-glucoside (vicenin-2)	34.3	35.5	27.4
			apigenin 7-O-rutinoside-4'-O-glucoside (isorhoifolin 4'-O-glucoside)	-	7.4	3.6
	Luteolin	Luteolin	Total apigenin contents	49.2	88.8	50.3
			luteolin 7-O-rutinoside (scolymoside)	-	10.7	4.8
			Total luteolin contents	0.5	13.9	7.1
	Chrysoeriol	Chrysoeriol	chrysoeriol 7-O-rutinoside	0.6	6.9	3.3
			chrysoeriol 6,8-di-C-glucoside (stellarin-2)	-	20.2	11.8
			Total chrysoeriol contents	0.6	27.1	15.1
Flavonols	Diosmetin	Diosmetin	diosmetin 7-O-rutinoside (diosmin)	0.3	12.2	5.9
			diosmetin 6,8-di-C-glucoside (lucenin-2 4'-methyl ether)	-	6.5	4.3
			Total diosmetin contents	0.3	18.7	10.2
	Quercetin	Quercetin	quercetin 3-O-rutinoside (rutin)	2.4	2.2	2.7
			quercetin 3-O-sophoroside	-	3.2	2.1
			Total quercetin contents	2.4	5.4	4.8



# 레몬 Lemon

(mg/100g dry weight)

과육	과피	전체
<b>플라바논류(Flavanones)</b>		
703.4	1816.0	1018.5
<b>플라바놀류(Flavanols)</b>		
-	-	-
<b>플라본류(Flavones)</b>		
243.0	488.0	270.9
<b>플라보놀류(Flavonols)</b>		
9.2	10.0	7.0
<b>이소플라본류(Isoflavones)</b>		
-	-	-
<b>총 플라보노이드(Total flavonoids)</b>		
955.6	2314.0	1296.4

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			레몬		
			과육	과피	전체
Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	6.0	23.5	10.4
		Total naringenin contents	6.0	23.5	10.4
	Eriodictyol	eriodictyol 7-O-rutinoside (eriocitrin)	441.2	881.6	481.1
		Total eriodictyol contents	441.2	881.6	481.1
	Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	256.2	910.9	527.0
		Total hesperetin contents	256.2	910.9	527.0
Flavones	Apigenin	apigenin 7-O-rutinoside (isorhoifolin)	4.1	18.2	8.1
		apigenin 6,8-di-C-glucoside (vicienin-2)	22.0	78.3	34.1
		Total apigenin contents	26.1	96.5	42.2
	Luteolin	luteolin 7-O-rutinoside (scolymoside)	23.5	61.9	31.5
		luteolin 6,8-di-C-glucoside (lucenin-2)	5.0	14.9	7.1
		Total luteolin contents	28.5	76.8	38.6
	Chrysoeriol	chrysoeriol 7-O-rutinoside	3.5	15.0	5.9
		chrysoeriol 6,8-di-C-glucoside (stellarin-2)	4.1	18.9	7.7
		Total chrysoeriol contents	7.6	33.9	13.6

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 레몬 Lemon

(mg/100g dry weight)

		개별성분 (Individual components)		함량(Contents)		
				레몬		
				과육	과피	전체
Flavones	Diosmetin	diosmetin 8-C-glucoside (orientin 4'-methyl ether)		28.0	42.7	30.7
		diosmetin 6-C-glucoside (isoorientin 4'-methyl ether)		14.7	35.7	19.5
		diosmetin 7-O-rutinoside (diosmin)		52.2	59.7	40.2
		diosmetin 6,8-di-C-glucoside (lucenin-2 4'-methyl ether)		85.9	142.7	86.1
		Total diosmetin contents		180.8	280.8	176.5
	Quercetin	quercetin 3-O-robinobioside		9.2	10.0	7.0
		Total quercetin contents		9.2	10.0	7.0



Flavonoids "Data Base 1.0"

# 감귤 Mandarin

(mg/100g dry weight)

과육	과피	전체
플라바논류(Flavanones)		
704.1	2879.1	1557.0
플라바놀류(Flavanols)		
-	-	-
플라본류(Flavones)		
15.3	318.5	140.7
플라보놀류(Flavonols)		
96.7	34.0	143.3
이소플라본류(Isoflavones)		
-	-	-
총 플라보노이드(Total flavonoids)		
816.1	3231.6	1841.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			과육	과피	전체
Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	334.4	1034.0	583.7
		naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside)	50.8	213.7	119.3
		Total naringenin contents	385.2	1247.7	703.0
	Isosakuranetin	isosakuranetin 7-O-rutinoside (didymin)	19.8	112.2	51.4
		Total isosakuranetin contents	19.8	112.2	51.4
	Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	299.1	1498.7	791.1
		hesperetin 7-O-rutinoside-3'-O-glucoside (hesperidin 3'-O-glucoside)	-	20.5	11.5
		Total hesperetin contents	299.1	1519.2	802.6
		5,7,8,4'-tetramethoxyflavone (tetra-O-methylisoscutellarein)	-	5.0	2.1
Flavones	Methoxy flavone	5,6,7,4'-tetramethoxyflavone (tetra-O-methylscutellarein)	-	1.1	-
		5,7,8,3',4'-pentamethoxyflavone (isosinensetin)	-	4.1	1.6
		5,6,7,3',4'-pentamethoxyflavone (sinensetin)	-	4.2	1.6
		5,6,7,8,4'-pentamethoxyflavone (tangeretin)	-	17.5	7.0
		5,6,7,8,3',4'-hexamethoxyflavone (nobiletin)	-	46.5	18.4
		3,5,6,7,8,3',4'-heptamethoxyflavone	-	20.4	7.6
		Total methoxy flavone contents	-	98.8	38.3

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 감귤 Mandarin

(mg/100g dry weight)

과육 과피 전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				감귤		
				과육	과피	전체
Flavones	Apigenin		apigenin 8-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylvitexin)	-	15.4	9.0
			apigenin 6-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylisovitexin)	-	10.6	3.5
			apigenin 7-O-rutinoside (isorhoifolin)	-	4.9	2.3
			apigenin 6,8-di-C-glucoside (vicenin-2)	15.3	74.7	36.0
			Total apigenin contents	15.3	105.6	50.8
	Luteolin		luteolin 7-O-rutinoside (scolymoside)	-	11.6	3.7
			luteolin 6,8-di-C-glucoside (lucenin-2)	-	14.3	5.6
			Total luteolin contents	-	25.9	9.3
	Chrysoeriol		chrysoeriol 7-O-rutinoside	-	33.7	14.5
			chrysoeriol 6,8-di-C-glucoside (stellarin-2)	-	44.7	23.3
			Total chrysoeriol contents	-	78.4	37.8
Diosmetin	Diosmetin		diosmetin 7-O-rutinoside (diosmin)	-	1.8	0.7
			diosmetin 6,8-di-C-glucoside (lucenin-2 4'-methyl ether)	-	8.0	3.8
			Total diosmetin contents	-	9.8	4.5

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 감귤 Mandarin

(mg/100g dry weight)

과육   과피   전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				감귤		
				과육	과피	전체
Flavonols	Kaempferol	Quercetin	kaempferol 3-O-rutinoside (nicotiflorin)	16.8	-	18.9
			kaempferol 3-O-rutinoside-7-O-rhamnoside (nicotiflorin 7-O-rhamnoside, moragrol B*)	12.2	-	11.4
			kaempferol 3-O-rutinoside-7-O-glucoside (nicotiflorin 7-O-glucoside, moragrol A*)	8.6	-	8.4
			Total kaempferol contents	37.6	-	38.7
	Quercetin	Quercetin	quercetin 3-O-rutinoside (rutin)	-	34.0	37.1
			quercetin 3-O-rutinoside-7-O-rhamnoside (rutin 7-O-rhamnoside, morkotin B*)	7.1	-	9.8
			quercetin 3-O-rutinoside-7-O-glucoside (rutin 7-O-glucoside, morkotin A*)	27.9	-	34.7
			Total quercetin contents	35.0	34.0	81.6
Isorhamnetin	Isorhamnetin	Isorhamnetin	isorhamnetin 7-O-rutinoside	13.5	-	16.4
			isorhamnetin 3-O-rutinoside (narcissin)	5.9	-	3.3
			isorhamnetin 3-O-rutinoside-7-O-glucoside (narcissin 7-O-glucoside)	4.7	-	3.3
			Total isorhamnetin contents	24.1	-	23.0

\* 신규명명



# 라임 Lime

(mg/100g dry weight)

과육	과피	전체
<b>플라바논류(Flavanones)</b>		
550.4	1808.4	1117.2
<b>플라바놀류(Flavanols)</b>		
-	-	-
<b>플라본류(Flavones)</b>		
290.6	883.8	486.5
<b>플라보놀류(Flavonols)</b>		
16.1	-	12.5
<b>이소플라본류(Isoflavones)</b>		
-	-	-
<b>총 플라보노이드(Total flavonoids)</b>		
857.3	2692.2	1616.4

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			라임		
			과육	과피	전체
Flavanones	Naringenin	naringenin 7-O-rutinoside (narirutin)	24.7	145.1	76.8
		Total naringenin contents	24.7	145.1	76.8
	Isosakuranetin	isosakuranetin 7-O-rutinoside (didymin)	-	19.7	7.5
		Total isosakuranetin contents	-	19.7	7.5
	Eriodictyol	eriodictyol 7-O-rutinoside (eriocitrin)	302.8	376.3	343.7
		Total eriodictyol contents	302.8	376.3	343.7
	Hesperetin	hesperetin 7-O-rutinoside (hesperidin)	222.9	1267.3	689.2
		Total hesperetin contents	222.9	1267.3	689.2
	Apigenin	apigenin 8-C-glucoside (vitexin)	5.0	29.6	12.8
		apigenin 6-C-glucoside (isovitexin)	4.3	52.7	14.7
		apigenin 8-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylvitexin)	5.0	16.4	7.0
		apigenin 6-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylisovitexin)	4.6	18.3	9.1
		apigenin 7-O-rutinoside (isorhoifolin)	33.2	137.6	69.1
		apigenin 6,8-di-C-glucoside (vicienin-2)	73.7	245.8	134.4
		Total apigenin contents	125.8	500.4	247.1

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 라임 Lime

(mg/100g dry weight)

과육 과피 전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				라임		
				과육	과피	전체
Flavones	Luteolin	Luteolin	luteolin 8-C-glucoside (orientin)	1.9	7.8	3.8
			luteolin 6-C-glucoside (isoorientin)	2.0	7.6	3.7
			luteolin 7-O-rutinoside (scolymoside)	13.1	56.9	28.8
			Total luteolin contents	17.0	72.3	36.3
	Chrysoeriol	Chrysoeriol	chrysoeriol 7-O-rutinoside	3.1	13.5	7.7
			chrysoeriol 6,8-di-C-glucoside (stellarin-2)	3.3	25.3	11.5
			Total chrysoeriol contents	6.4	38.8	19.2
	Diosmetin	Diosmetin	diosmetin 8-C-glucoside (orientin 4'-methyl ether)	32.8	58.5	41.6
			diosmetin 6-C-glucoside (isoorientin 4'-methyl ether)	21.7	50.5	31.7
			diosmetin 7-O-rutinoside (diosmin)	23.7	30.8	19.2
			Total diosmetin contents	63.2	132.5	91.4
Flavonols	Quercetin	Quercetin	quercetin 3-O-robinobioside	141.4	272.3	183.9
			Total quercetin contents	16.1	-	12.5



Flavonoids "Data Base 1.0"

# 대추나무 Jujube

(mg/100g dry weight)

열매 (생것)	열매 (건조)	잎
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플라바노류(Flavanones)		
-	-	-

플라바놀류(Flavanols)		
-	-	-

플라본류(Flavones)		
-	-	-

플라보놀류(Flavonols)		
13.6	9.1	8150.7

이소플라본류(Isoflavones)		
-	-	-

찰콘류(Chalcones)		
-	-	205.8

총 플라보노이드(Total flavonoids)		
13.6	9.1	8356.5

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			대추나무		
			열매(생것)	열매(건조)	잎
Flavonols	Kaempferol	kaempferol 3-O-robinobioside	0.6	0.4	105.2
		kaempferol 3-O-rutinoside (nicotiflorin)	0.7	0.4	215.8
		Total kaempferol contents	1.3	0.8	321.0
Flavonols	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	0.2	0.1	40.4
		quercetin 3-O-robinobioside	5.2	3.3	1054.1
		quercetin 3-O-rutinoside (rutin)	6.9	4.9	6735.2
Chalcones	Phloretin	Total quercetin contents	12.3	8.3	7829.7
		phloretin 3',5'-di-C-glucoside	-	-	205.8
		Total phloretin contents	-	-	205.8



Flavonoids "Data Base 1.0"

# 딸기 Strawberry

(mg/100g dry weight)

딸기	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				딸기
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	3.8
-			kaempferol 3-O-glucuronide	7.1
플라바놀류(Flavanols)			kaempferol 3-O-(6"-O-acetyl)glucoside	1.2
-			kaempferol 3-O-(6"-O-malonyl)glucoside	0.6
플라본류(Flavones)			kaempferol 3-O-rutinoside (nicotiflorin)	1.0
-			Total kaempferol contents	13.7
플라보놀류(Flavonols)		Quercetin	quercetin 3-O-glucoside (isoquercitrin)	0.9
31.5			quercetin 3-O-glucuronide (miquelianin)	15.3
이소플라본류(Isoflavones)		Isorhamnetin	Total quercetin contents	16.2
-			isorhamnetin 3-O-glucuronide	1.6
총 플라보노이드(Total flavonoids)			Total isorhamnetin contents	1.6
31.5				



Flavonoids "Data Base 1.0"

# 망고 Mango

과육	과피	전체
플라바노류(Flavanones)	-	-
플라바놀류(Flavanols)	-	-
플라본류(Flavones)	-	-
플라보놀류(Flavonols)	-	49.3 22.3
이소플라본류(Isoflavones)	-	-
잔토류(Xanthones)	9.2	4.6
총플라보노이드(Total flavonoids)	58.5	26.9

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual component)	함량(Contents)	
			망고	
			과피	전체
Flavonols	Quercetin	kaempferol 3-O-galactoside (trifolin)	1.5	0.3
		kaempferol 3-O-glucoside (astragalin)	1.6	0.7
		kaempferol 3-O-xyloside	0.3	-
		kaempferol 3-O-arabinoside (juglalin)	0.3	0.4
		kaempferol 3-O-arabinofuranoside	0.5	-
		Total kaempferol contents	4.2	1.4
		quercetin 3-O-xyloside (reynoutrin)	5.3	2.5
		quercetin 3-O-arabinoside (gvajaverin)	3.2	1.0
		quercetin 3-O-arabinofuranoside (avicularin)	2.1	1.0
		quercetin 3-O-rhamnoside (quercitrin)	0.6	0.2
Xanthones	Rhamnetin	quercetin 3-O-galactoside (hyperoside)	19.7	9.8
		quercetin 3-O-glucoside (isoquercitrin)	12.7	6.0
		quercetin 3-O-xylosyl(1→2)glucoside	0.9	0.3
		Total quercetin contents	44.5	20.8
		rhamnetin 3-O-galactoside	0.1	-
Xanthones	Xanthone	rhamnetin 3-O-glucoside	0.5	0.1
		Total rhamnetin contents	0.6	0.1
		xanthone 2-C-glucoside (mangiferin)	9.2	4.6
		Total xanthone contents	9.2	4.6



# 애플망고 Apple mango

(mg/100g dry weight)

과육 과피 전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual component)	함량(Contents)	
				애플망고	
				과피	전체
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-galactoside (trifolin)	2.6	0.3
-			kaempferol 3-O-glucoside (astragalin)	2.0	0.3
-			kaempferol 3-O-xyloside	0.6	-
-			kaempferol 3-O-arabinoside (juglalin)	0.2	-
-			kaempferol 3-O-arabinofuranoside	0.4	-
플라바놀류(Flavanols)		Quercetin	Total kaempferol contents	5.8	0.6
-			quercetin	0.4	-
-			quercetin 3-O-xyloside (reynoutrin)	13.2	2.2
-			quercetin 3-O-arabinoside (gvajaverin)	5.5	0.9
-			quercetin 3-O-arabinofuranoside (avicularin)	5.6	1.0
플라본류(Flavones)	Isoflavones	Quercetin	quercetin 3-O-rhamnoside (quercitrin)	1.9	0.2
-			quercetin 3-O-galactoside (hyperoside)	123.7	13.6
-			quercetin 3-O-glucoside (isoquercitrin)	38.6	6.8
-			quercetin 3-O-xylosyl(1→2)glucoside	1.5	0.3
-			Total quercetin contents	190.2	25.0
이소플라본류(Isoflavones)		Xanthones			
-					
-					
잔톤류(Xanthones)					
-					
총 플라보노이드(Total flavonoids)	Xanthones				
-					
206.4			27.0		

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 애플망고 Apple mango

(mg/100g dry weight)

과육	과피	전체	개별성분 (Individual component)	함량(Contents)	
				애플망고	
				과피	전체
Flavonols	Rhamnetin		rhamnetin 3-O-galactoside	2.0	0.3
			rhamnetin 3-O-glucoside	7.7	1.1
			Total rhamnetin contents	9.7	1.4
Xanthones	Xanthone		xanthone 2-C-glucoside (mangiferin)	0.6	-
			Total xanthone contents	0.6	-



Flavonoids "Data Base 1.0"

## 참외 Oriental melon

(mg/100g dry weight)

플라바노류  
(Flavanones)

플라바놀류  
(Flavanols)

플라본류  
(Flavones)

플라보놀류  
(Flavonols)

이소플라본류  
(Isoflavones)

총 플라보노이드  
(Total flavonoids)

참외

-

-

-

-

-

-



Flavonoids "Data Base 1.0"

# 멜론 Melon

(mg/100g dry weight)

	플라바노류 (Flavanones)	플라바놀류 (Flavanols)	플라본류 (Flavones)	플라보놀류 (Flavonols)	이소플라본류 (Isoflavones)	총 플라보노이드 (Total flavonoids)
과육	-	-	-	-	-	-
과피	-	-	-	-	-	-



Flavonoids "Data Base 1.0"

# 배

## Pear

과육	과피
플라바노류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	58.1
플라보놀류(Flavonols)	5.9
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	75.9

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			과피
Flavanols	Epicatechin	(-)-epicatechin (EC)	58.1
		Total epicatechin contents	58.1
	Luteolin	luteolin 7-O-glucoside (cynaroside)	3.1
		luteolin 7-O-rutinoside (scolymoside)	2.8
	Quercetin	Total luteolin contents	5.9
		quercetin 3-O-galactoside (hyperoside)	1.2
		quercetin 3-O-glucoside (isoquercitrin)	3.5
		quercetin 3-O-rutinoside (rutin)	1.5
Flavonols	Total quercetin contents		6.2
		isorhamnetin 3-O-galactoside	2.4
	Isorhamnetin	isorhamnetin 3-O-rutinoside (narcissin)	3.3
		Total isorhamnetin contents	5.7



Flavonoids "Data Base 1.0"

# 살구 Apricot

살구
플라바노류(Flavanones) -
플라바놀류(Flavanols) 32.5
플라본류(Flavones) -
플라보놀류(Flavonols) 35.5
이소플라본류(Isoflavones) -
총 플라보노이드(Total flavonoids) 68.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			살구
Flavanols	Epicatechin	(-)-epicatechin (EC)	32.5
		Total epicatechin contents	32.5
	Kaempferol	kaempferol 3-O-glucoside (astragalin)	0.4
		kaempferol 3-O-rutinoside (nicotiflorin)	0.6
Flavonols	Quercetin	Total kaempferol contents	1.0
		quercetin 3-O-glucoside (isoquercitrin)	1.7
		quercetin 3-O-(6"-O-acetyl)glucoside	1.8
		quercetin 3-O-rutinoside (rutin)	31.0
		Total quercetin contents	34.5



# 매실

## Japanese apricot

(mg/100g dry weight)

매실	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				매실
플라바노류(Flavanones)	Flavanols	Epicatechin	(-)-epicatechin (EC)	99.8
-			Total epicatechin contents	99.8
플라바놀류(Flavanols)			quercetin 3-O-galactoside (hyperoside)	1.3
99.8			quercetin 3-O-glucoside (isoquercitrin)	1.8
-			quercetin 3-O-(6"-O-acetyl)glucoside	1.4
플라본류(Flavones)		Quercetin	quercetin 3-O-(2"-O-acetyl)glucoside	0.6
-			quercetin 3-O-neohesperidoside	2.9
플라보놀류(Flavonols)			quercetin 3-O-rutinoside (rutin)	6.3
46.0			quercetin 3-O-(2"-O-acetyl)neohesperidoside (mumikotin B*)	3.2
-			quercetin 3-O-(2"-O-acetyl)rutinoside (mumikotin A*)	12.1
이소플라본류(Isoflavones)			quercetin 3-O-(2",6"-di-O-rhamnosyl)galactoside	8.0
-			quercetin 3-O-(2",6"-di-O-rhamnosyl)glucoside	8.4
총 플라보노이드(Total flavonoids)			Total quercetin contents	46.0
145.8				

\* 신규명명



Flavonoids "Data Base 1.0"  
**복숭아** Peach

(mg/100g dry weight)

백도	천도	황도
----	----	----

플라바노류(Flavanones)	-	-	-
-------------------	---	---	---

플라바놀류(Flavanols)	-	-	-
------------------	---	---	---

플라본류(Flavones)	-	-	-
----------------	---	---	---

플라보놀류(Flavonols)	4.6	16.5	5.5
------------------	-----	------	-----

이소플라본류(Isoflavones)	-	-	-
---------------------	---	---	---

총 플라보노이드(Total flavonoids)	4.6	16.5	5.5
----------------------------	-----	------	-----

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			복숭아		
			백도	천도	황도
Flavonols	Kaempferol	kaempferol 3-O-galactoside (trifolin)	0.1	0.9	0.4
		kaempferol 3-O-glucoside (astragalin)	2.1	2.5	2.5
		kaempferol 3-O-rutinoside (nicotiflorin)	1.2	0.4	0.8
		Total kaempferol contents	3.4	3.8	3.7
	Quercetin	quercetin 3-O-galactoside (hyperoside)	0.4	4.0	0.5
		quercetin 3-O-glucoside (isoquercitrin)	0.5	7.6	0.5
		quercetin 3-O-rutinoside (rutin)	0.3	1.1	0.8
Total quercetin contents			1.2	12.7	1.8



Flavonoids "Data Base 1.0"  
**피자두** Chinese plum

(mg/100g dry weight)

피자두	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				피자두
플라바노류(Flavanones)	Flavanols	Epicatechin	(-)-epicatechin (EC) Total epicatechin contents quercetin quercetin 3-O-xyloside (reynoutrin) quercetin 3-O-arabinoside (gvajaverin) quercetin 3-O-rhamnoside (quercitrin)	77.3 77.3 0.2 2.4 13.0 4.5
플라바놀류(Flavanols)	Flavonols	Quercetin	quercetin 3-O-galactoside (hyperoside) quercetin 3-O-glucoside (isoquercitrin) quercetin 3-O-(6"-O-acetyl)glucoside quercetin 3-O-rutinoside (rutin) Total quercetin contents	0.5 32.7 1.4 17.1 71.8
플라본류(Flavones)				
플라보놀류(Flavonols)				
이소플라본류(Isoflavones)				
총 플라보노이드(Total flavonoids)				149.1



Flavonoids "Data Base 1.0"

# 앵두 Korean cherry

앵두	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	(mg/100g dry weight)	함량(Contents) 앵두
플라바노류(Flavanones)			kaempferol	0.6	
-			kaempferol 3-O-xyloside	0.4	
플라바놀류(Flavanols)	Kaempferol		kaempferol 3-O-rhamnoside (afzelin)	23.6	
-			kaempferol 3-O-glucoside (astragalin)	1.1	
플라본류(Flavones)	Flavonols		kaempferol 3-O-rutinoside (nicotiflorin)	2.6	
-			kaempferol 3-O-(4"-O-acetyl)rutinoside (cerakorin*)	42.0	
플라보놀류(Flavonols)			Total kaempferol contents	70.3	
110.2			quercetin 3-O-xyloside (reynoutrin)	0.6	
이소플라본류(Isoflavones)	Quercetin		quercetin 3-O-rhamnoside (quercitrin)	31.2	
-			quercetin 3-O-glucoside (isoquercitrin)	0.4	
총 플라보노이드(Total flavonoids)			quercetin 3-O-rutinoside (rutin)	1.7	
110.2			quercetin 3-O-(4"-O-acetyl)rutinoside (cerakocetin*)	6.0	
			Total quercetin contents	39.9	

\* 신규명명



Flavonoids "Data Base 1.0"

# 양액두

## Sweet cherry

(mg/100g dry weight)

양액두	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				양액두
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	2.9
-			Total kaempferol contents	2.9
플라바놀류(Flavanols)		Quercetin	quercetin 3-O-glucoside (isoquercitrin)	0.2
-			quercetin 3-O-rutinoside (rutin)	6.3
플라본류(Flavones)			Total quercetin contents	6.5
플라보놀류(Flavonols)				
9.4				
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
9.4				



Flavonoids "Data Base 1.0"

# 체리 Cherry

(mg/100g dry weight)

체리	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				체리
플라바노류(Flavanones)	Flavonols	Kaempferol	kaempferol	0.1
-			kaempferol 3-O-glucoside (astragalin)	0.2
플라바놀류(Flavanols)			kaempferol 3-O-rutinoside (nicotiflorin)	2.1
-			Total kaempferol contents	2.4
플라본류(Flavones)		Quercetin	quercetin	0.1
-			quercetin 3-O-glucoside (isoquercitrin)	0.3
플라보놀류(Flavonols)			quercetin 3-O-rutinoside (rutin)	8.2
11.0			Total quercetin contents	8.6
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
11.0				



Flavonoids "Data Base 1.0"

# 복분자(A지역) Raspberry(A area)

(mg/100g dry weight)

복분자(A지역)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				복분자(A지역)
플라바논류(Flavanones)	Flavonols	Quercetin	quercetin	2.9
-			quercetin 3-O-galactoside (hyperoside)	0.5
플라바놀류(Flavanols)			quercetin 3-O-glucoside (isoquercitrin)	3.5
-			quercetin 3-O-glucuronide (miquelianin)	55.5
플라본류(Flavones)			quercetin 3-O-rutinoside (rutin)	52.2
-			Total quercetin contents	114.6
플라보놀류(Flavonols)				
114.6				
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
114.6				



Flavonoids "Data Base 1.0"

# 복분자(B지역) Raspberry(B area)

(mg/100g dry weight)

복분자(B지역)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				복분자(B지역)
플라바노류(Flavanones)	Flavonols	Quercetin	quercetin	1.7
-			quercetin 3-O-galactoside (hyperoside)	0.2
플라바놀류(Flavanols)			quercetin 3-O-glucoside (isoquercitrin)	3.6
-			quercetin 3-O-glucuronide (miquelianin)	47.8
플라본류(Flavones)			quercetin 3-O-rutinoside (rutin)	52.8
-			Total quercetin contents	106.1
플라보놀류(Flavonols)				
106.1				
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
106.1				



Flavonoids "Data Base 1.0"

# 복분자(C지역) Raspberry(C area)

(mg/100g dry weight)

복분자(C지역)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				복분자(C지역)
플라바논류(Flavanones)	Flavonols	Quercetin	quercetin	54.2
-			quercetin 3-O-galactoside (hyperoside)	0.5
플라바놀류(Flavanols)			quercetin 3-O-glucoside (isoquercitrin)	4.6
-			quercetin 3-O-glucuronide (miquelianin)	45.2
플라본류(Flavones)			quercetin 3-O-rutinoside (rutin)	0.2
104.7			Total quercetin contents	104.7
플라보놀류(Flavonols)				
이소플라본류(Isoflavones)				
총 플라보노이드(Total flavonoids)				
104.7				



Flavonoids "Data Base 1.0"

# 복분자(D지역) Raspberry(D area)

(mg/100g dry weight)

복분자(D지역)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				복분자(D지역)
플라바노류(Flavanones)	Flavonols	Quercetin	quercetin	33.4
-			quercetin 3-O-galactoside (hyperoside)	2.3
플라바놀류(Flavanols)			quercetin 3-O-glucoside (isoquercitrin)	8.5
-			quercetin 3-O-glucuronide (miquelianin)	13.7
플라본류(Flavones)			quercetin 3-O-rutinoside (rutin)	1.8
-			Total quercetin contents	59.7
플라보놀류(Flavonols)				
59.7				
이소플라본류(Isoflavones)				
-				
총 플라보노이드(Total flavonoids)				
59.7				



Flavonoids "Data Base 1.0"

# 블랙초크베리

Black chokeberry

(mg/100g dry weight)

블랙초크베리
--------

플라바논류(Flavanones)
75.5

플라바놀류(Flavanols)
15.4

플라본류(Flavones)
-

플라보놀류(Flavonols)
168.2

이소플라본류(Isoflavones)
-

총 플라보노이드(Total flavonoids)
259.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			블랙초크베리
Flavanones	Eriodictyol	eriodictyol 7-O-glucuronide	75.5
		Total eriodictyol contents	75.5
Flavanols	Epicatechin	(-)–epicatechin (EC)	15.4
		Total epicatechin contents	15.4
Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	0.5
		kaempferol 3-O-vicianoside	0.9
Flavonols	Quercetin	kaempferol 3-O-rutinoside (nicotiflorin)	1.8
		Total kaempferol contents	3.2
Flavonols	Quercetin	quercetin	0.9
		quercetin 3-O-xyloside (reynoutrin)	0.6
Flavonols	Quercetin	quercetin 3-O-arabinoside (gvajaverin)	1.8
		quercetin 3-O-galactoside (hyperoside)	40.4
Flavonols	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	27.7
		quercetin 3-O-vicianoside	26.6
Flavonols	Quercetin	quercetin 3-O-robinobioside	11.3
		quercetin 3-O-rutinoside (rutin)	20.0
Flavonols	Quercetin	quercetin 3-O-glucosyl(1→2)galactoside (aronin*)	20.1

\* 신규명명

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 블랙초크베리

Black chokeberry

(mg/100g dry weight)

블랙초크베리	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				블랙초크베리
Flavonols	Quercetin	quercetin 3-O-sophoroside	6.8	
		Total quercetin contents	156.2	
	Isorhamnetin	isorhamnetin 3-O-galactoside	1.0	
		isorhamnetin 3-O-glucoside	0.6	
		isorhamnetin 3-O-vicianoside	2.2	
		isorhamnetin 3-O-robinobioside	2.1	
		isorhamnetin 3-O-rutinoside (narcissin)	2.9	
		Total isorhamnetin contents	8.8	



# 블루베리

## Blueberry

(mg/100g dry weight)

블루베리	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				블루베리
플라바노류(Flavanones)	Flavonol	Kaempferol	kaempferol 3-O-glucoside (astragalin)	2.4
-			kaempferol 3-O-rutinoside (nicotiflorin)	0.4
Total kaempferol contents			2.8	
플라바놀류(Flavanols)		Quercetin	quercetin	4.5
-			quercetin 3-O-arabinoside (gvajaverin)	13.7
플라본류(Flavones)			quercetin 3-O-rhamnoside (quercitern)	8.7
-			quercetin 3-O-galactoside (hyperoside)	76.1
플라보놀류(Flavonols)			quercetin 3-O-glucoside (isoquercitrin)	13.9
165.6			quercetin 3-O-(6"-O-malonyl)glucoside	5.6
이소플라본류(Isoflavones)			quercetin 3-O-robinobioside	1.6
-		Isorhamnetin	quercetin 3-O-rutinoside (rutin)	4.8
총 플라보노이드(Total flavonoids)			Total quercetin contents	128.9
165.6			isorhamnetin 3-O-galactoside	0.9
			isorhamnetin 3-O-glucoside	0.9
			isorhamnetin 3-O-robinobioside	0.5
			isorhamnetin 3-O-rutinoside (narcissin)	1.2
			Total isorhamnetin contents	3.5

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 블루베리 Blueberry

(mg/100g dry weight)

블루베리	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				블루베리
Flavonol	Myricetin	Laricitrin	myricetin 3-O-arabinoside	1.9
			myricetin 3-O-galactoside	13.4
			myricetin 3-O-glucoside (isomyricitrin)	0.5
			Total myricetin contents	15.8
	Laricitrin	Laricitrin	laricitrin 3-O-arabinoside	1.0
			laricitrin 3-O-galactoside	6.9
			laricitrin 3-O-glucoside	0.4
	Syringetin	Syringetin	Total laricitrin contents	8.3
			syringetin 3-O-galactoside	5.2
			syringetin 3-O-glucoside	1.1
			Total syringetin contents	6.3



Flavonoids "Data Base 1.0"  
**뽕나무** Mulberry

오디	뽕잎
플라바논류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	-
플라보놀류(Flavonols)	86.5      1238.6
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	86.5      1238.6

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			뽕나무	뽕잎
Flavonols	Kaempferol	kaempferol 3-O-glucoside (astragalin)	2.2	71.0
		kaempferol 3-O-rhamnoside-7-O-glucoside	-	16.7
		kaempferol 3-O-rutinoside (nicotiflorin)	4.4	164.2
		kaempferol 3,7-di-O-glucoside	0.3	16.3
		kaempferol 3-O-rutinoside-7-O-rhamnoside (moragrol B*)	-	64.6
		kaempferol 3-O-rutinoside-7-O-glucoside (moragrol A*)	-	7.3
	Quercetin	Total kaempferol contents	6.9	340.1
		quercetin 3-O-glucoside (isoquercitrin)	8.9	296.6
		quercetin 3-O-rhamnoside-7-O-glucoside	-	20.4
		quercetin 3-O-rutinoside (rutin)	67.8	425.5
	Quercetin	quercetin 3,7-di-O-glucoside	0.8	37.1
		quercetin 3-O-rutinoside-7-O-rhamnoside (morkotin B*)	-	95.0
		quercetin 3-O-rutinoside-7-O-glucoside (morkotin A*)	2.1	23.9
		Total quercetin contents	79.6	898.5

\* 신규명명



# 사과(부사) Apple(Fuji)

(mg/100g dry weight)

과육	과피	전체
----	----	----

플라바노류(Flavanones)		
-	-	-

플라바놀류(Flavanols)		
15.5	39.1	20.3

플라본류(Flavones)		
-	-	-

플라보놀류(Flavonols)		
-	391.4	50.3

이소플라본류(Isoflavones)		
-	-	-

칼콘류(Chalcones)		
13.2	42.6	18.2

총 플라보노이드(Total flavonoids)		
28.7	473.1	88.8

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			부사		
			과육	과피	전체
Flavanols	Epicatechin	(-)-epicatechin (EC)	15.5	39.1	20.3
		Total epicatechin contents	15.5	39.1	20.3
		quercetin 3-O-xyloside (reynoutrin)	-	44.8	6.4
		quercetin 3-O-arabinoside (gvajaverin)	-	14.6	1.8
		quercetin 3-O-arabinofuranoside (avicularin)	-	75.5	10.5
	Quercetin	quercetin 3-O-rhamnoside (quercitrin)	-	51.0	8.1
		quercetin 3-O-galactoside (hyperoside)	-	150.9	17.8
		quercetin 3-O-glucoside (isoquercitrin)	-	28.4	3.2
		quercetin 3-O-rutinoside (rutin)	-	26.2	2.5
Chalcones	phloretin	Total quercetin contents	-	391.4	50.3
		phloretin 2'-O-glucoside (phloridzin)	7.0	25.2	10.0
		phloretin 2'-O-(2"-O-xylosyl)glucoside	6.2	17.4	8.2
		Total phloretin contents	13.2	42.6	18.2



# 사과(아오리) Apple(Aorie)

(mg/100g dry weight)

과육	과피	전체
----	----	----

플라바노류(Flavanones)		
-	-	-

플라바놀류(Flavanols)		
8.1	44.6	8.2

플라본류(Flavones)		
-	-	-

플라보놀류(Flavonols)		
5.1	337.1	58.2

이소플라본류(Isoflavones)		
-	-	-

칼콘류(Chalcones)		
11.7	85.5	15.6

총 플라보노이드(Total flavonoids)		
24.9	467.2	82.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			아오리		
			과육	과피	전체
Flavanols	Epicatechin	(-)-epicatechin (EC)	8.1	44.6	8.2
		Total epicatechin contents	8.1	44.6	8.2
		quercetin 3-O-xyloside (reynoutrin)	0.5	47.9	8.2
		quercetin 3-O-arabinoside (gvajaverin)	-	5.0	0.7
	Quercetin	quercetin 3-O-arabinofuranoside (avicularin)	0.5	73.7	12.4
		quercetin 3-O-rhamnoside (quercitrin)	4.1	84.7	17.3
		quercetin 3-O-galactoside (hyperoside)	-	113.9	17.7
Chalcones	phloretin	quercetin 3-O-glucoside (isoquercitrin)	-	11.9	1.9
		Total quercetin contents	5.1	337.1	58.2
		phloretin 2'-O-glucoside (phloridzin)	5.9	45.6	8.4
		phloretin 2'-O-(2"-O-xylosyl)glucoside	5.8	39.9	7.2
		Total phloretin contents	11.7	85.5	15.6



Flavonoids "Data Base 1.0"

# 용과 Pitaya

과육	과피
플라바논류(Flavanones)	-
플라바놀류(Flavanols)	-
플라본류(Flavones)	-
플라보놀류(Flavonols)	3.8 148.6
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	3.8 148.6

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			용과	
			과육	과피
Flavonols	Kaempferol	kaempferol 3-O-robinobioside	-	0.2
		kaempferol 3-O-rutinoside (nicotiflorin)	0.3	1.1
		Total kaempferol contents	0.3	1.3
		quercetin 3-O-galactoside (hyperoside)	-	0.3
		quercetin 3-O-glucoside (isoquercitrin)	0.1	3.1
	Quercetin	quercetin 3-O-robinobioside	-	6.2
		quercetin 3-O-rutinoside (rutin)	3.4	2.8
		Total quercetin contents	3.5	12.4
		isorhamnetin 3-O-galactoside	-	1.7
		isorhamnetin 3-O-glucoside	-	5.3
Isorhamnetin	isorhamnetin	isorhamnetin 7-O-rutinoside	-	13.6
		isorhamnetin 3-O-rutinoside (narcissin)	-	58.7
		isorhamnetin 3-O-robinobioside	-	21.6
		isorhamnetin 3-O-rhamnoside-7-O-rutinoside	-	23.7
	isorhamnetin	isorhamnetin 3-O-rutinoside-7-O-rhamnoside	-	10.3
		Total isorhamnetin contents	-	134.9

# 포도(거봉) Grape(Geobong)

(mg/100g dry weight)

과육 과피 전체	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
				거봉	
				과피	전체
플라바노류(Flavanones)	Flavanols	Catechin	(+)-catechin	24.4	8.3
-			Total catechin contents	24.4	8.3
플라바놀류(Flavanols)		Epicatechin	(-)-epicatechin (EC)	4.2	1.5
-			Total epicatechin contents	4.2	1.5
플라본류(Flavones)		Kaempferol	kaempferol 3-O-glucoside (astragalin)	2.0	0.8
-			Total kaempferol contents	2.0	0.8
플라보놀류(Flavonols)		Quercetin	quercetin 3-O-glucuronide (miquelianin)	9.6	2.7
-			quercetin 3-O-galactoside (hyperoside)	1.0	0.5
이소플라본류(Isoflavones)			quercetin 3-O-glucoside (isoquercitrin)	14.8	5.1
-			quercetin 3-O-rhamnoside (quercitrin)	3.0	1.1
총플라보노이드(Total flavonoids)			Total quercetin contents	28.4	9.4
-	Flavonols	Isorhamnetin	isorhamnetin 3-O-glucoside	3.3	1.1
89.3			Total isorhamnetin contents	3.3	1.1
29.4		Myricetin	myricetin 3-O-glucoside (isomyricitrin)	22.6	6.8
-		Total myricetin contents	22.6	6.8	
-		Laricitrin	laricitrin 3-O-glucoside	4.4	1.5
-		Total laricitrin contents	4.4	1.5	



Flavonoids "Data Base 1.0"

# 포도(캠벨) Grape(Campbell)

(mg/100g dry weight)

과육	과피	전체
플라바노류(Flavanones)		
-	-	-
플라바놀류(Flavanols)		
-	11.4	27.2
플라본류(Flavones)		
-	-	-
플라보놀류(Flavonols)		
-	174.5	58.9
이소플라본류(Isoflavones)		
-	-	-
총 플라보노이드(Total flavonoids)		
-	185.9	86.3

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			과피	전체
Flavanols	Catechin	(+)-catechin	6.4	11.3
		Total catechin contents	6.4	11.3
	Epicatechin	(-)-epicatechin (EC)	5.0	11.3
		(-)-epicatechin 3-O-gallate (ECG)	-	4.6
	Quercetin	Total epicatechin contents	5.0	15.9
		quercetin 3-O-glucuronide (miquelianin)	38.9	17.4
Flavonols	Myricetin	quercetin 3-O-glucoside (isoquercitrin)	80.2	24.9
		Total quercetin contents	119.1	42.3
	Laricitrin	myricetin 3-O-glucoside (isomyricitrin)	49.6	15.4
		Total myricetin contents	49.6	15.4
	Laricitrin	laricitrin 3-O-glucoside	5.8	1.2
		Total laricitrin contents	5.8	1.2



Flavonoids "Data Base 1.0"

# 청포도

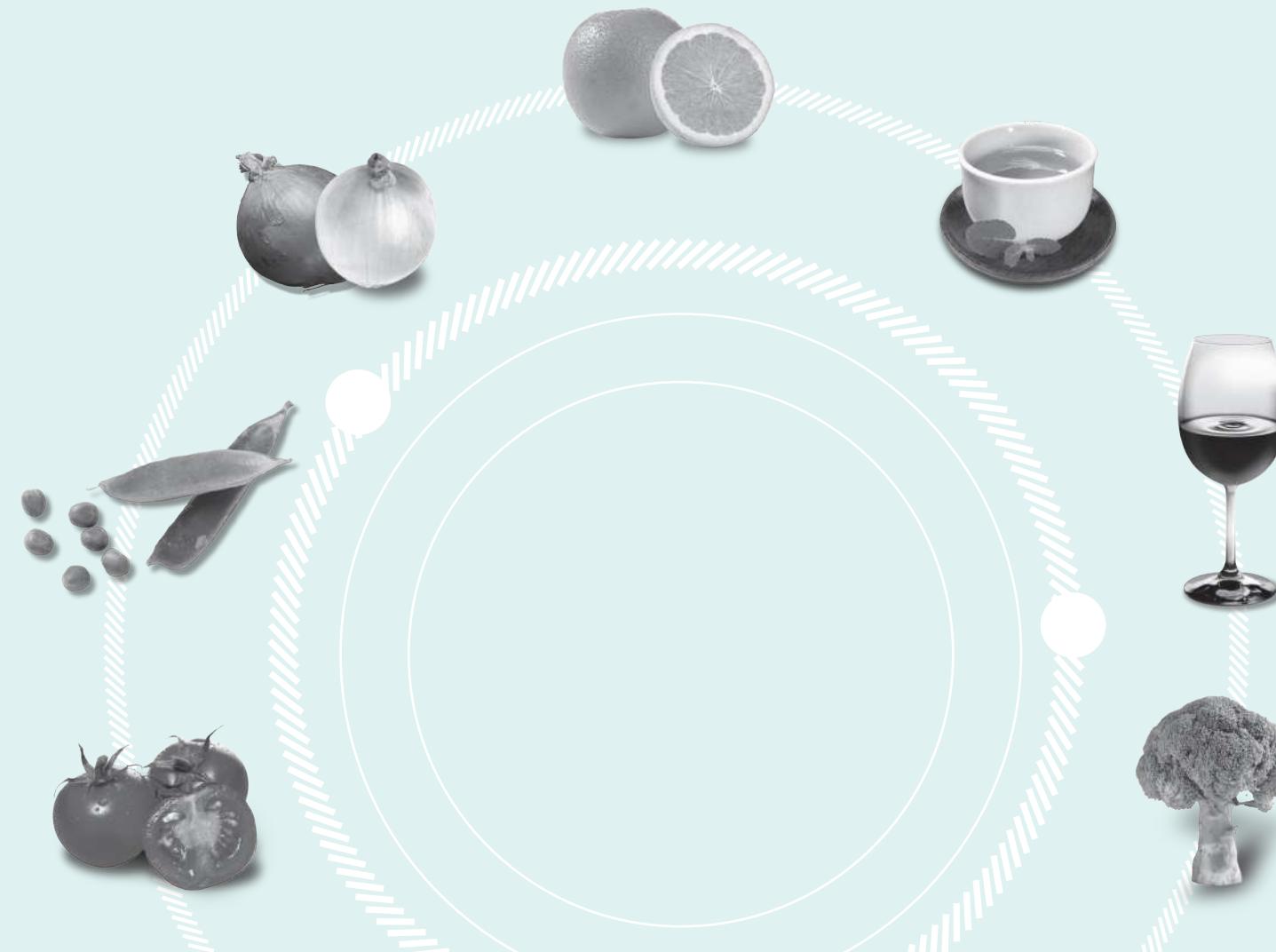
## Green grape

(mg/100g dry weight)

과육	과피	전체
플라바노류(Flavanones)		
-	-	-
플라바놀류(Flavanols)		
-	4.7	-
플라본류(Flavones)		
-	-	-
플라보놀류(Flavonols)		
-	34.7	7.9
이소플라본류(Isoflavones)		
-	-	-
총 플라보노이드(Total flavonoids)		
-	39.4	7.9

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			과피	전체
Flavanols	Catechin	(+)-catechin	4.2	-
		Total catechin contents	4.2	-
	Epicatechin	(-)-epicatechin (EC)	0.5	-
		Total epicatechin contents	0.5	-
	Kaempferol	kaempferol 3-O-glucuronide	0.2	-
		kaempferol 3-O-glucoside (astragalin)	0.6	0.1
		kaempferol 3-O-rhamnoside (afzelin)	0.2	-
		Total kaempferol contents	1.0	0.1
		quercetin	1.0	0.5
Flavonols	Quercetin	quercetin 3-O-glucuronide (miquelianin)	19.3	4.4
		quercetin 3-O-galactoside (hyperoside)	0.9	0.1
		quercetin 3-O-glucoside (isoquercitrin)	5.2	0.9
		quercetin 3-O-xyloside (reynoutrin)	0.5	0.2
		quercetin 3-O-arabinofuranoside (avicularin)	0.5	0.1
		quercetin 3-O-rhamnoside (quercitrin)	5.4	1.3
		quercetin 3-O-rutinoside (rutin)	0.9	0.3
		Total quercetin contents	33.7	7.8
		laricitrin 3-O-glucoside	-	0.2
		Total laricitrin contents	-	0.2

08/ 차류  
Teas





# 녹차

## Green tea

(mg/100g dry weight)

생업	제품
플라바노류(Flavanones)	-
4082.5	8857.1
플라바놀류(Flavanols)	-
1021.1	1238.9
플라본류(Flavones)	-
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	5103.6 10096.0

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			녹차	
			생업	제품
Flavanols	Theaflavin	theaflavin 3-O-gallate	17.5	-
		theaflavin 3'-O-gallate	20.2	-
		theaflavin 3,3'-di-O-gallate	37.5	-
		Total theaflavin contents	75.2	-
	Epicatechin	(-)-epicatechin (EC)	125.6	297.6
		(-)-epicatechin 3-O-gallate (ECG)	1348.8	2318.2
		Total epicatechin contents	1474.4	2615.8
	Epigallocatechin	(-)-epigallocatechin (EGC)	67.5	155.7
		(-)-epigallocatechin 3-O-gallate (EGCG)	2465.4	6085.6
		Total epigallocatechin contents	2532.9	6241.3
		kaempferol	9.1	3.7
		kaempferol 3-O-galactoside (trifolin)	181.0	197.3
		kaempferol 3-O-glucoside (astragalin)	33.6	40.8
Flavonols	Kaempferol	kaempferol 3-O-rutinoside (nicotiflorin)	31.2	33.3
		kaempferol 3-O-(3''-O-galactosyl)rutinoside	212.4	246.1
		kaempferol 3-O-(3''-O-glucosyl)rutinoside	59.7	76.4
		Total kaempferol contents	527.0	597.6

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 녹차

## Green tea

(mg/100g dry weight)

생업	제품	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					녹차	
					생업	제품
Flavonols	Quercetin			quercetin	5.7	-
				quercetin 3-O-galactoside (hyperoside)	57.6	84.0
				quercetin 3-O-glucoside (isoquercitrin)	34.7	37.5
				quercetin 3-O-rutinoside (rutin)	57.8	62.2
				quercetin 3-O-(3"-O-galactosyl)rutinoside	118.0	144.8
				quercetin 3-O-(3"-O-glucosyl)rutinoside	110.1	131.6
				Total quercetin contents	383.9	460.1
	Myricetin			myricetin 3-O-galactoside	63.6	105.5
				myricetin 3-O-glucoside (isomyricitrin)	36.1	60.7
				myricetin 3-O-(3"-O-galactosyl)rutinoside	4.2	5.8
				myricetin 3-O-(3"-O-glucosyl)rutinoside	6.3	9.2
				Total myricetin contents	110.2	181.2



# 홍차 Black tea

생업	제품
플라바노류(Flavanones)	-
4657.7	2439.7
플라본류(Flavones)	-
1054.4	950.4
이소플라본류(Isoflavones)	-
총 플라보노이드(Total flavonoids)	5712.1
	3390.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			홍차	
			생업	제품
Flavanols	Theaflavin	theaflavin	22.7	65.0
		theaflavin 3-O-gallate	28.0	168.4
		theaflavin 3'-O-gallate	30.3	97.8
		theaflavin 3,3'-di-O-gallate	67.3	305.6
		Total theaflavin contents	148.2	636.8
	Epicatechin	(-)-epicatechin (EC)	133.3	89.0
		(-)-epicatechin 3-O-gallate (ECG)	1548.0	690.0
		Total epicatechin contents	1681.3	779.0
	Epigallocatechin	(-)-epigallocatechin (EGC)	118.6	78.9
		(-)-epigallocatechin 3-O-gallate (EGCG)	2709.5	945.0
		Total epigallocatechin contents	2828.1	1023.9
Flavonols	Kaempferol	kaempferol	10.7	6.4
		kaempferol 3-O-galactoside (trifolin)	179.5	173.2
		kaempferol 3-O-glucoside (astragalin)	35.3	34.5
		kaempferol 3-O-rutinoside (nicotiflorin)	30.6	32.4
		kaempferol 3-O-(3''-O-galactosyl)rutinoside	220.8	203.3
		kaempferol 3-O-(3''-O-glucosyl)rutinoside	61.9	56.5
		Total kaempferol contents	538.7	506.2

(mg/100g dry weight)

다음페이지로 이어서



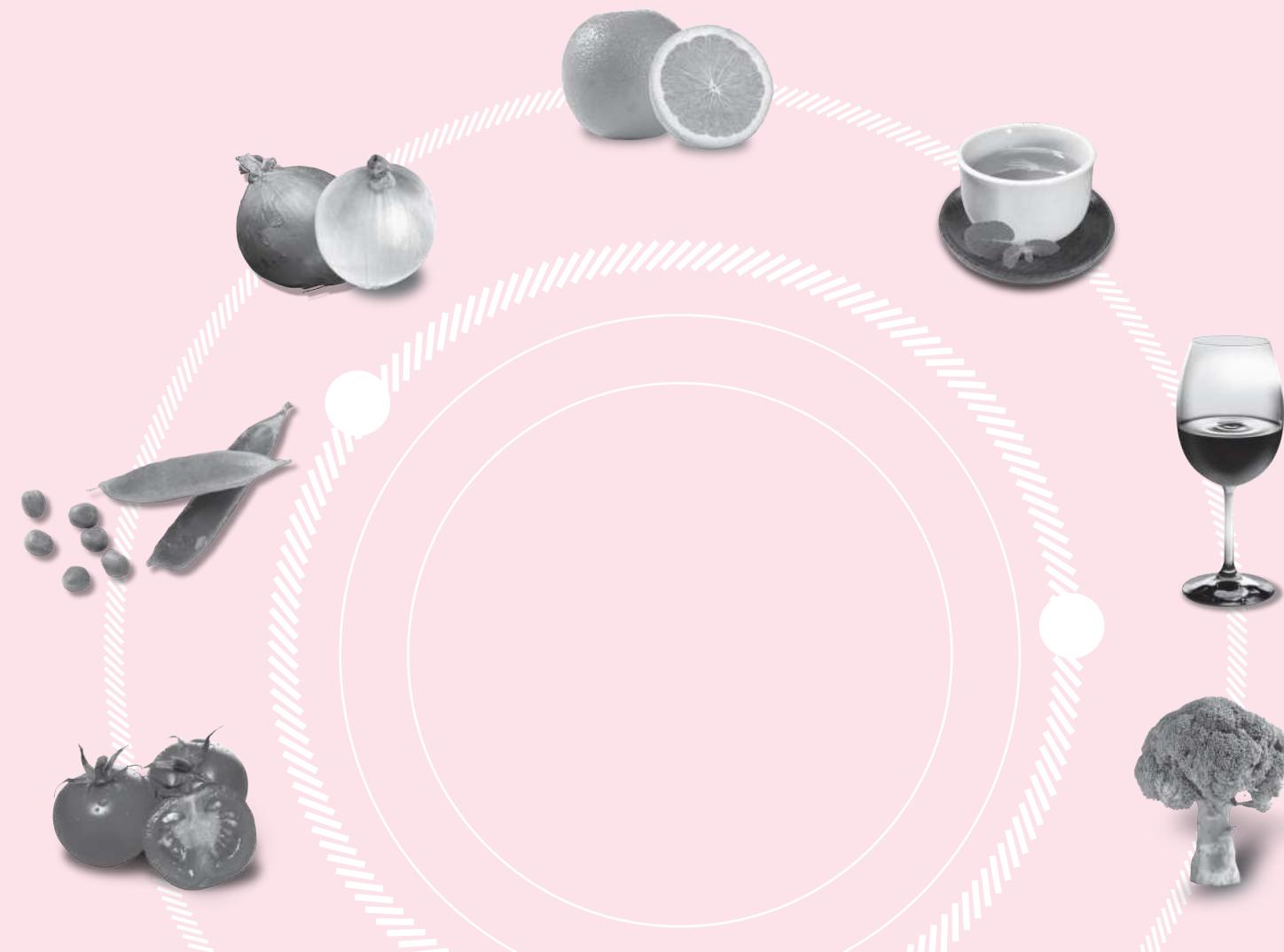
# 홍차

## Black tea

(mg/100g dry weight)

생업	제품	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					홍차	
					생업	제품
Flavonols	Quercetin			quercetin	7.3	5.3
				quercetin 3-O-galactoside (hyperoside)	65.5	65.5
				quercetin 3-O-glucoside (isoquercitrin)	34.1	32.1
				quercetin 3-O-rutinoside (rutin)	59.7	63.8
				quercetin 3-O-(3"-O-galactosyl)rutinoside	123.8	118.3
				quercetin 3-O-(3"-O-glucosyl)rutinoside	107.7	111.2
				Total quercetin contents	398.0	396.3
	Myricetin			myricetin 3-O-galactoside	70.3	30.8
				myricetin 3-O-glucoside (isomyricitrin)	36.0	17.1
				myricetin 3-O-(3"-O-galactosyl)rutinoside	4.3	0.0
				myricetin 3-O-(3"-O-glucosyl)rutinoside	6.9	0.0
				Total myricetin contents	117.6	47.9

09/ 주류  
Wines



# 프랑스산 와인(라 크라사드 까베르네 시라) France wine(La Croisade Cabernet Syrah)

(mg/100g dry weight)

라 크라사드 까베르네 시라	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				라 크라사드 까베르네 시라
플라바노류(Flavanones)	Flavanols	Catechin	(+)-catechin	4.5
-			Total catechin contents	4.5
플라바놀류(Flavanols)		Epicatechin	(-)-epicatechin (EC)	1.8
6.3			Total epicatechin contents	1.8
플라본류(Flavones)		Kaempferol	kaempferol	0.9
-			Total kaempferol contents	0.9
플라보놀류(Flavonols)		Quercetin	quercetin	14.8
49.0			quercetin 3-O-glucuronide (miquelianin)	12.0
이소플라본류(Isoflavones)		Isorhamnetin	Total quercetin contents	26.8
-			isorhamnetin	2.1
총 플라보노이드(Total flavonoids)		Myricetin	Total isorhamnetin contents	2.1
55.3			myricetin	10.1
		Laricitrin	Total myricetin contents	10.1
			laricitrin	3.2
		Syringetin	laricitrin 3-O-glucoside	1.6
			Total laricitrin contents	4.9
			syringetin 3-O-glucoside	4.2
			Total syringetin contents	4.2



# 프랑스산 와인(바롱 레스탁 블랑) France wine(Baron de Lestac Blanc)

(mg/100g dry weight)

			함량(Contents)
			바롱 레스탁 블랑
대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	
플라바노류(Flavanones)	-	quercetin	2.2
플라바놀류(Flavanols)	-	Total quercetin contents	2.2
플라본류(Flavones)	-		
플라보놀류(Flavonols)	2.2		
이소플라본류(Isoflavones)	-		
총 플라보노이드(Total flavonoids)	2.2		

# 프랑스산 와인(글로세리드 까망삭) France wine(La Closerie de Camensac)

(mg/100g dry weight)

글로세리드 까망삭	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				글로세리드 까망삭
플라바노류(Flavanones)	Flavanols	Catechin	(+)-catechin	2.7
-			Total catechin contents	2.7
플라바놀류(Flavanols)		Epicatechin	(-)-epicatechin (EC)	1.2
3.9			Total epicatechin contents	1.2
플라본류(Flavones)		Kaempferol	kaempferol	2.1
-			kaempferol 3-O-galactoside (trifolin)	0.9
플라보놀류(Flavonols)		Quercetin	Total kaempferol contents	3.0
88.0			quercetin	24.8
이소플라본류(Isoflavones)			quercetin 3-O-galactoside (hyperoside)	3.4
-			quercetin 3-O-glucoside (isoquercitrin)	1.6
총 플라보노이드(Total flavonoids)			quercetin 3-O-glucuronide (miquelianin)	15.3
91.9			quercetin 3-O-glucuronic acid methyl ester	0.6
			quercetin 3-O-(2"-O-acetyl)glucoside	0.7
			quercetin 3,7-di-O-glucoside	0.9
			Total quercetin contents	47.3

다음페이지로 이어서



# 프랑스산 와인(글로세리드 까망삭) France wine(La Closerie de Camensac)

(mg/100g dry weight)

글로세리드 까망삭	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				글로세리드 까망삭
Flavonols	Isorhamnetin		isorhamnetin	2.4
			isorhamnetin 3-O-galactoside	2.1
			Total isorhamnetin contents	4.5
	Myricetin		myricetin	9.4
			myricetin 3-O-galactoside	1.2
			myricetin 3-O-glucoside (isomyricetin)	15.2
			Total myricetin contents	25.8
	Laricitrin		laricitrin	0.6
			laricitrin 3-O-glucoside	3.3
			Total laricitrin contents	3.9
	Syringetin		syringetin 3-O-glucoside	3.5
			Total syringetin contents	3.5

# 프랑스산 와인(르 그랑누아 까베르네 쇼비뇽) France wine(Le Grand Noir Cabernet Sauvignon)

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
			르 그랑누아 까베르네 쇼비뇽	
Flavanols	Catechin	(+)-catechin	4.0	
		Total catechin contents	4.0	
		(-)-epicatechin (EC)	1.7	
		Total epicatechin contents	1.7	
		kaempferol	1.6	
	Quercetin	Total kaempferol contents	1.6	
		quercetin	16.2	
		quercetin 3-O-glucuronide (miquelianin)	8.6	
		quercetin 3-O-glucuronic acid methyl ester	0.1	
		quercetin 3-O-(2"-O-acetyl)glucoside	0.2	
Flavonols	Quercetin	quercetin 3,7-di-O-glucoside	0.4	
		Total quercetin contents	25.5	
	Isorhamnetin	isorhamnetin	2.6	
		Total isorhamnetin contents	2.6	
총 플라보노이드(Total flavonoids)			다음페이지로 이어서	
56.2				



# 프랑스산 와인(르 그랑누아 까베르네 쇼비뇽) France wine(Le Grand Noir Cabernet Sauvignon)

(mg/100g dry weight)

르 그랑누아 까베르네 쇼비뇽	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				르 그랑누아 까베르네 쇼비뇽
Flavonols	Myricetin	Myricetin	myricetin	10.7
			myricetin 3-O-galactoside	0.5
			myricetin 3-O-glucoside (isomyricetin)	3.1
			Total myricetin contents	14.3
	Laricitrin	Laricitrin	laricitrin	1.3
			laricitrin 3-O-glucoside	1.2
			Total laricitrin contents	2.5
	Syringetin	Syringetin	syringetin 3-O-glucoside	4.0
			Total syringetin contents	4.0



Flavonoids "Data Base 1.0"

# 한국산 와인(샤토마니 드라이 레드) Korean wine(Chateau Mani Dry Red)

(mg/100g dry weight)

샤토마니 드라이 레드
플라바논류(Flavanones) -
플라바놀류(Flavanols) 2.6
플라본류(Flavones) -
플라보놀류(Flavonols) 23.1
이소플라본류(Isoflavones) -
총 플라보노이드(Total flavonoids) 25.7

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			샤토마니 드라이 레드
Flavanols	Catechin	(+)-catechin	1.7
		Total catechin contents	1.7
		(-)-epicatechin (EC)	0.9
		Total epicatechin contents	0.9
		quercetin	3.9
	Quercetin	quercetin 3-O-glucuronide (miquelianin)	4.9
		quercetin 3-O-glucuronic acid methyl ester	0.2
		quercetin 3-O-(2"-O-acetyl)glucoside	0.1
		quercetin 3,7-di-O-glucoside	0.2
		Total quercetin contents	9.3
Flavonols	Isorhamnetin	isorhamnetin	1.1
		Total isorhamnetin contents	1.1
		myricetin	2.9
		myricetin 3-O-galactoside	0.3
		myricetin 3-O-glucoside (isomyricetin)	2.9
	Myricetin	Total myricetin contents	6.1

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 한국산 와인(샤토마니 드라이 레드) Korean wine(Chateau Mani Dry Red)

주류

(mg/100g dry weight)

샤토마니 드라이 레드	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				샤토마니 드라이 레드
Flavonols	Laricitrin	laricitrin		1.3
		laricitrin 3-O-glucoside		1.6
	Syringetin	Total laricitrin contents		2.9
		syringetin 3-O-glucoside		3.7
		Total syringetin contents		3.7



Flavonoids "Data Base 1.0"

# 한국산 와인(샤토마니 드라이 화이트) Korean wine(Chateau Mani Dry White)

(mg/100g dry weight)

샤토마니  
드라이 화이트

플라바논류(Flavanones)  
-

플라바놀류(Flavanols)  
-

플라본류(Flavones)  
-

플라보놀류(Flavonols)  
2.6

이소플라본류(Isoflavones)  
-

총 플라보노이드(Total flavonoids)  
2.6

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			샤토마니 드라이 화이트
Flavonols	Quercetin	quercetin Total quercetin contents	2.6 2.6

# 한국산 와인(샤토마니 드라이 레드 마스터즈 콜렉션) Korean wine(Chateau Mani Dry Red Masters Collection)

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			샤토마니 드라이 레드 마스터즈 콜렉션
플라비노류(Flavanones)	Flavanols	Catechin	(+)-catechin 2.7
			Total catechin contents 2.7
		Kaempferol	kaempferol 1.1
			Total kaempferol contents 1.1
		Quercetin	quercetin 15.8
	Flavonols		quercetin 3-O-galactoside (hyperoside) 0.2
			quercetin 3-O-glucuronide (miquelianin) 4.5
			quercetin 3-O-glucuronic acid methyl ester 0.3
			quercetin 3,7-di-O-glucoside 0.5
			Total quercetin contents 21.3
플라보놀류(Flavonols)	Isorhamnetin		isorhamnetin 2.4
			Total isorhamnetin contents 2.4
	Myricetin		myricetin 10.6
			myricetin 3-O-galactoside 0.5
			myricetin 3-O-glucoside (isomyricetin) 2.3
총 플라보노이드(Total flavonoids)		Total myricetin contents	13.4
			52.6

다음페이지로 이어서



Flavonoids "Data Base 1.0"

## 한국산 와인(샤토마니 드라이 레드 마스터즈 콜렉션) Korean wine(Chateau Mani Dry Red Masters Collection)

(mg/100g dry weight)

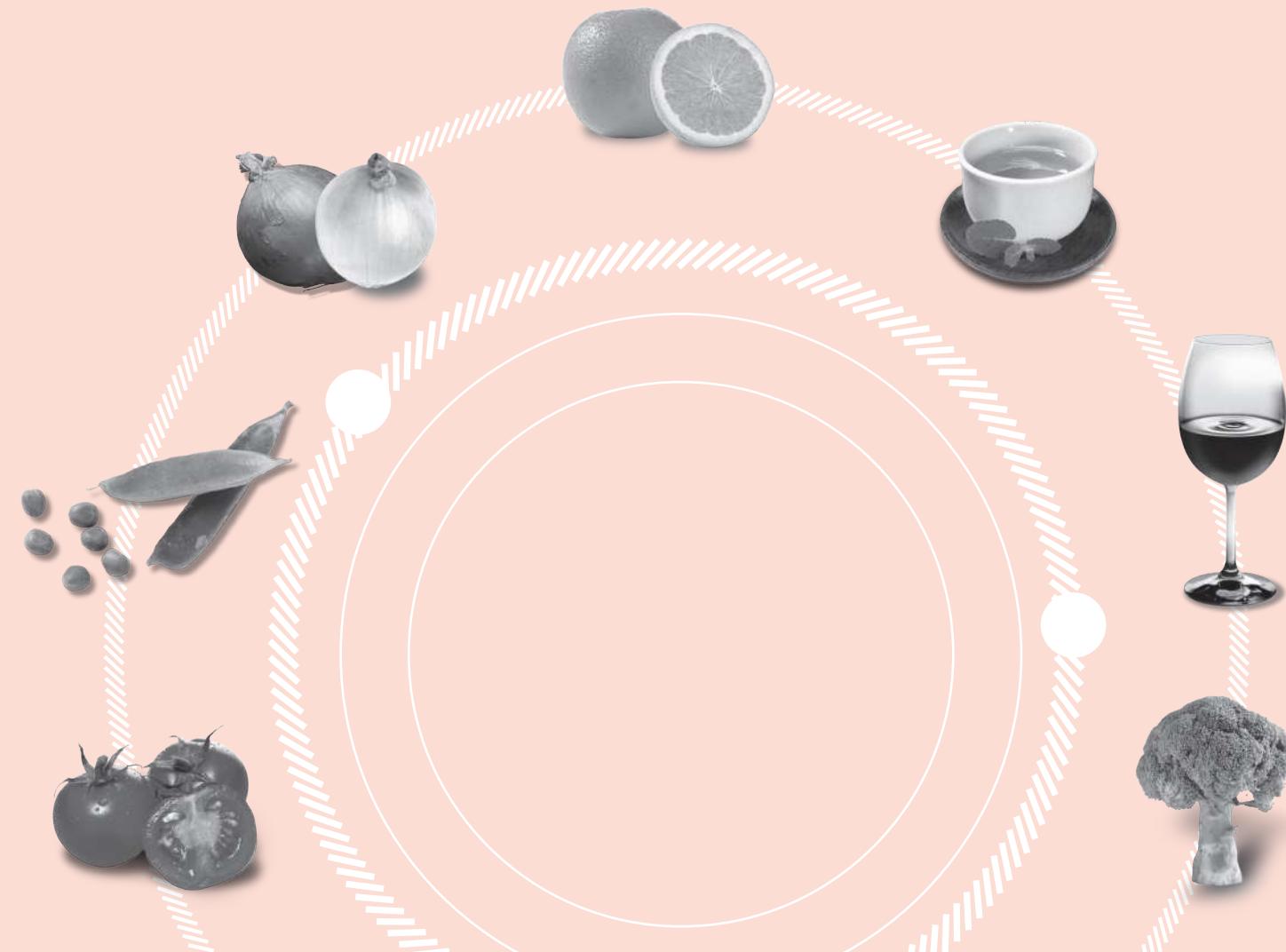
샤토마니 드라이 레드 마스터즈 콜렉션	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				샤토마니 드라이 레드 마스터즈 콜렉션
Flavonols	Laricitrin	laricitrin		4.0
		laricitrin 3-O-glucoside		1.2
		Total laricitrin contents		5.2
	Syringetin	syringetin 3-O-glucoside		6.5
		Total syringetin contents		6.5



# 한국산 와인(샤토마니 누보) Korean wine(Chateau Mani Nouveau)

샤토마니 누보	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				샤토마니 누보		
플라바논류(Flavanones)	Flavanols	Catechin	(+)-catechin	1.6		
-			Total catechin contents	1.6		
플라바놀류(Flavanols)			quercetin	1.1		
1.6			quercetin 3-O-galactoside (hyperoside)	0.2		
플라본류(Flavones)			quercetin 3-O-glucoside (isoquercitrin)	0.2		
-		Isorhamnetin	quercetin 3-O-glucuronide (miquelianin)	1.8		
플라보놀류(Flavonols)			Total quercetin contents	3.3		
10.2			isorhamnetin	0.8		
이소플라본류(Isoflavones)			Total isorhamnetin contents	0.8		
-		Myricetin	myricetin	0.9		
총플라보노이드(Total flavonoids)	Flavonols		myricetin 3-O-glucoside (isomyricetin)	3.0		
11.8			Total myricetin contents	3.9		
laricitrin			laricitrin	0.2		
-	Laricitrin	laricitrin 3-O-glucoside	0.8			
-		Total laricitrin contents	1.0			
-	Syringetin	syringetin 3-O-glucoside	1.2			
-		Total syringetin contents	1.2			

10/ 조미료류  
Seasonings





Flavonoids "Data Base 1.0"

# 메주 Meju

메주
플라바논류(Flavanones) -
플라바놀류(Flavanols) -
플라본류(Flavones) -
플라보놀류(Flavonols) -
이소플라본류(Isoflavones) 421.2
총 플라보노이드(Total flavonoids) 421.2

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			메주
Isoflavones	Daidzein	daidzein	114.3
		daidzein 7-O-glucoside (daidzin)	39.6
		daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyl daidzin)	3.2
		Total daidzein contents	157.1
	Genistein	genistein	128.6
		genistein 7-O-glucoside (genistin)	108.2
		genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyl genistin)	5.7
	Glycitein	Total genistein contents	242.5
		glycitein	11.4
		glycitein 7-O-glucoside (glycitin)	10.2
		Total glycinein contents	21.6



Flavonoids "Data Base 1.0"

# 된장 Doenjang

(mg/100g dry weight)

된장
----

플라바노류(Flavanones)
-

플라바놀류(Flavanols)
-

플라본류(Flavones)
-

플라보놀류(Flavonols)
-

이소플라본류(Isoflavones)
526.1

총 플라보노이드(Total flavonoids)
526.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			된장
Isoflavones	Daidzein	daidzein	235.7
		Total daidzein contents	235.7
	Genistein	genistein	249.9
		Total genistein contents	249.9
	Glycitein	glycitein	40.5
		Total glycinein contents	40.5



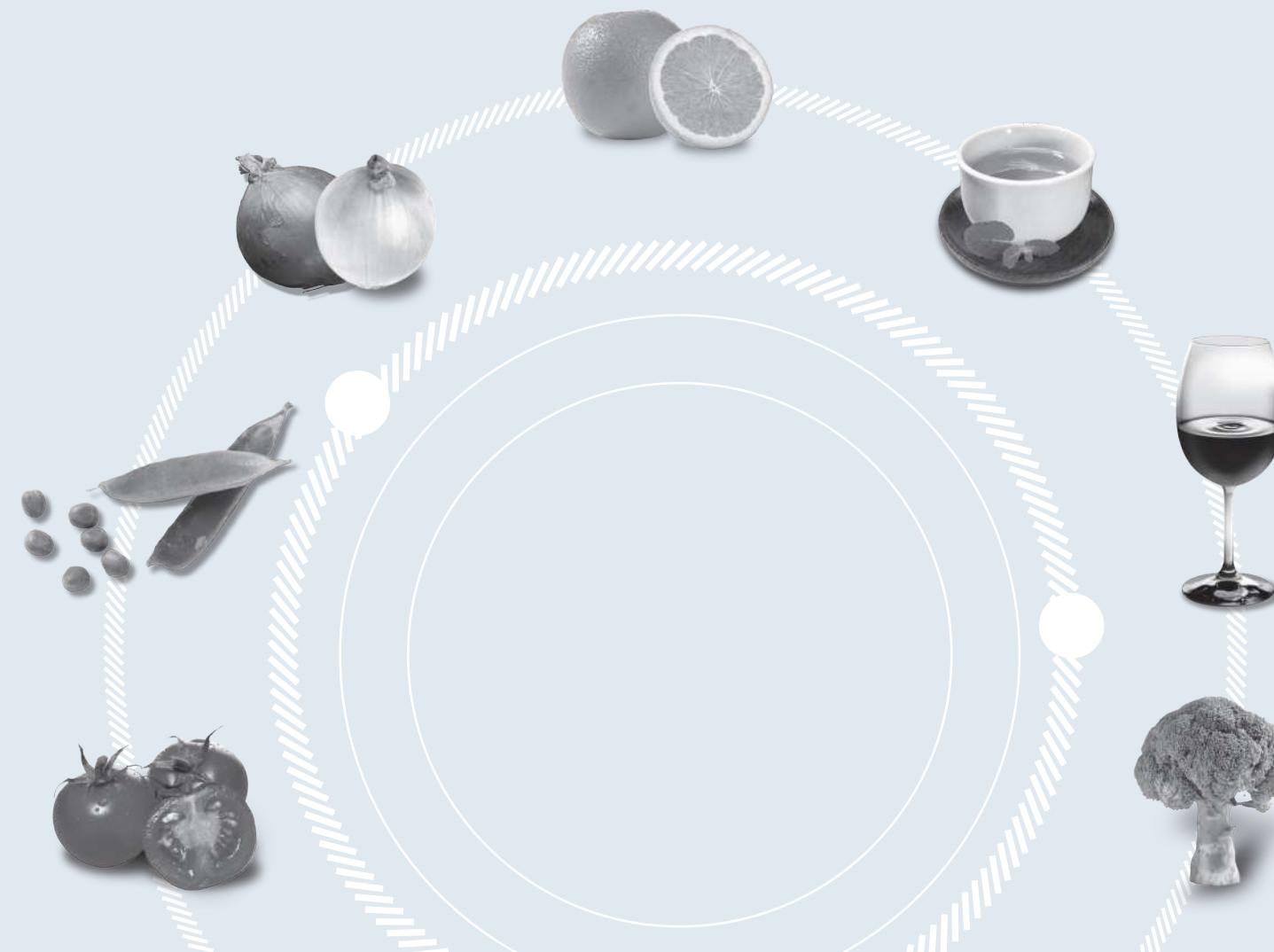
Flavonoids "Data Base 1.0"

# 고추장 Gochujang

(mg/100g dry weight)

고추장	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				고추장
플라바노류(Flavanones)	Isoflavones	Daidzein	daidzein	21.2
-			Total daidzein contents	21.2
플라바놀류(Flavanols)		Genistein	genistein	25.4
-			Total genistein contents	25.4
플라본류(Flavones)		Glycitein	glycitein	8.9
-			Total glycinein contents	8.9
플라보놀류(Flavonols)				
-				
이소플라본류(Isoflavones)				
55.5				
총 플라보노이드(Total flavonoids)				
55.5				

11/ 기타  
Others





Flavonoids "Data Base 1.0"

# 참당귀

## Korean angelica

(mg/100g dry weight)

참당귀(잎)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				참당귀(잎)
플라바논류(Flavanones)	Flavones	Chrysoeriol	chrysoeriol 7-O-rutinoside	36.5
-			Total chrysoeriol contents	36.5
플라바놀류(Flavanols)		Kaempferol	kaempferol 3-O-glucoside (astragalin)	7.3
-			kaempferol 3-O-rutinoside (nicotiflorin)	13.6
플라본류(Flavones)		Quercetin	Total kaempferol contents	20.9
36.5			quercetin	4.7
플라보놀류(Flavonols)			quercetin 3-O-(6"-O-malonyl)glucoside	27.7
1136.6			quercetin 3-O-galactoside (hyperoside)	11.1
이소플라본류(Isoflavones)			quercetin 3-O-glucoside (isoquercitrin)	427.2
-			quercetin 3-O-glucoyl(1→6)galactoside	22.6
총 플라보노이드(Total flavonoids)			quercetin 3-O-gentibioside	13.0
1173.1			quercetin 3-O-xylosyl(1→6)galactoside	5.4
			quercetin 3-O-xylosyl(1→6)glucoside	6.3
			quercetin 3-O-vicianoside	2.6
			quercetin 3-O-robinobioside	30.0
			quercetin 3-O-rutinoside (rutin)	509.0
			Total quercetin contents	1059.6

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 참당귀

## Korean angelica

(mg/100g dry weight)

참당귀(잎)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				참당귀(잎)
Flavonols	Isorhamnetin	isorhamnetin	isorhamnetin 3-O-(6"-O-malonyl)glucoside	4.0
			isorhamnetin 3-O-galactoside	2.2
			isorhamnetin 3-O-glucoside	18.7
			isorhamnetin 3-O-xylosyl(1→6)galactoside	6.3
			isorhamnetin 3-O-xylosyl(1→6)glucoside	2.6
			isorhamnetin 3-O-robinobioside	2.1
			isorhamnetin 3-O-rutinoside (narcissin)	20.2
		Total isorhamnetin contents		56.1

기  
타

# 배암차즈기(곰보배추) Common sage

(mg/100g dry weight)

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			배암차즈기(곰보배추)
플라비노류(Flavanones) 2709.3	Flavanones	5,6,7,4'-tetrahydroxyflavanone 7-O-glucoside (naasalvinin C*)	264.9
		5,6,7,3',4'-pentahydroxyflavanone 7-O-glucoside (naasalvinin B*)	775.1
		5,7,4'-trihydroxy-6-methoxyflavanone	75.8
		5,7,4'-trihydroxy-6-methoxyflavanone 7-O-glucoside (naasalvinin A*)	543.9
		5,7,3',4'-tetrahydroxy-6-methoxyflavanone	111.3
		5,7,3',4'-tetrahydroxy-6-methoxyflavanone 7-O-glucoside (naasanone*)	938.3
		Total hydroxy flavanone contents	2709.3
		apigenin	11.4
		apigenin 7-O-glucoside (cosmosiin)	144.4
		Total apigenin contents	155.8
플라보놀류(Flavonols) -	Flavones	luteolin	22.4
		luteolin 5-O-glucoside (galuteolin)	1101.1
		luteolin 7-O-glucoside (cynaroside)	530.5
		6-hydroxyluteolin 7-O-glucoside	2452.7
		Total luteolin contents	4106.7
		* 신규명명	다음페이지로 이어서
		총 플라보노이드(Total flavonoids) 11530.6	



# 배암차즈기(곰보배추) Common sage

(mg/100g dry weight)

배암차즈기(곰보배추)	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				배암차즈기(곰보배추)
Flavones	Hispidulin	hispidulin		164.7
		hispidulin 7-O-glucoside (homoplantaginin)		2281.0
		Total hispidulin contents		2445.7
	Nepetin	nepetin		110.5
		nepetin 7-O-glucoside (nepitrin)		2002.6
		Total nepetin contents		2113.1



# 보검선인장(백년초) Prickly pear

(mg/100g dry weight)

열매	엽상경 (과육)	엽상경
플라바논류(Flavanones)	-	-
플라바놀류(Flavanols)	-	-
플라본류(Flavones)	-	-
플라보놀류(Flavonols)	138.5	9.1 219.1
이소플라본류(Isoflavones)	-	-
총 플라보노이드(Total flavonoids)	138.5	9.1 219.1

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			보검선인장(백년초)		
			열매	엽상경(과육)	엽상경
Flavonols	Kaempferol	kaempferol	1.5	-	0.9
		kaempferol 3-methyl ether	1.8	-	0.2
		kaempferol 3-O-galactoside (trifolin)	1.3	-	1.0
		kaempferol 3-O-glucoside (astragalin)	1.3	-	4.0
		kaempferol 3-O-robinobioside	1.2	-	3.3
		kaempferol 3-O-rutinoside (nicotiflorin)	7.6	0.2	21.8
	Quercetin	Total kaempferol contents	14.7	0.2	31.2
		quercetin	2.1	-	1.6
		quercetin 3-methyl ether	3.2	-	0.9
		quercetin 3-O-galactoside (hyperoside)	1.2	-	3.8
	Quercetin	quercetin 3-O-glucoside (isoquercitrin)	2.1	-	1.7
		quercetin 3-O-rutinoside (rutin)	2.8	-	5.8
		Total quercetin contents	11.4	-	13.8

다음페이지로 이어서



# 보검선인장(백년초) Prickly pear

(mg/100g dry weight)

열매	엽상경 (과육)	엽상경	개별성분 (Individual components)	함량(Contents)		
				보검선인장(백년초)		
				열매	엽상경(과육)	엽상경
Flavonols	Isorhamnetin		isorhamnetin	0.6	-	0.4
			isorhamnetin 3-methyl ether	0.3	-	-
			isorhamnetin 3-O-galactoside	6.8	-	17.7
			isorhamnetin 3-O-glucoside	4.8	0.1	10.8
			isorhamnetin 7-O-rutinoside	1.0	-	2.7
			isorhamnetin 3-O-rutinoside (narcissin)	62.6	3.9	95.1
			isorhamnetin 3-O-robinobioside	10.9	0.6	14.6
			isorhamnetin 3-O-galactoside-4'-O-glucoside	10.3	1.0	10.2
			isorhamnetin 3,4'-di-O-glucoside	5.1	1.0	9.0
			isorhamnetin 3-O-rhamnoside-7-O-rutinoside	2.2	-	2.2
			isorhamnetin 3-O-rutinoside-4'-O-glucoside	7.8	2.3	11.4
Total isorhamnetin contents				112.4	8.9	174.1



# 저단선(천년초) Eastern prickly pear

(mg/100g dry weight)

엽상경 (과육)	엽상경	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)	
					저단선(천년초)	
					엽상경(과육)	엽상경
플라바노류(Flavanones)	-	Flavonols	Kaempferol	kaempferol	-	0.2
				kaempferol 3-O-robinobioside	-	1.1
				kaempferol 3-O-rutinoside (nicotiflorin)	-	2.5
				Total kaempferol contents	-	3.8
			Quercetin	quercetin	0.3	4.1
				quercetin 3-methyl ether	-	0.4
				quercetin 3-O-galactoside (hyperoside)	-	0.7
				quercetin 3-O-glucoside (isoquercitrin)	-	0.7
				quercetin 3-O-rutinoside (rutin)	-	5.3
			Isorhamnetin	Total quercetin contents	0.3	11.2
				isorhamnetin	-	0.5
				isorhamnetin 3-O-galactoside	-	5.8
				isorhamnetin 3-O-glucoside	-	6.1
				isorhamnetin 3-O-(6"-O-malonyl)galactoside	-	5.9
				isorhamnetin 3-O-(6"-O-malonyl)glucoside	-	18.8
이소플라본류(Isoflavones)	-			isorhamnetin 3-O-rutinoside (narcissin)	0.8	78.7
				isorhamnetin 3-O-robinobioside	0.1	20.3
총 플라보노이드(Total flavonoids)					다음페이지로 이어서	
3.5	205.5					



Flavonoids "Data Base 1.0"

# 저단선(천년초) Eastern prickly pear

(mg/100g dry weight)

엽상경 (과육)	엽상경	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)			
					저단선(천년초)			
					엽상경(과육)	엽상경		
Flavonols	Isorhamnetin			isorhamnetin 3-O-galactoside-4'-O-glucoside	0.7	11.4		
				isorhamnetin 3,4'-di-O-glucoside	1.1	23.7		
				isorhamnetin 3-O-rutinoside-4'-O-glucoside	0.5	19.3		
				Total isorhamnetin contents	3.2	190.5		

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# 와송 Houseleek

(mg/100g dry weight)

와송
플라바노류(Flavanones) -
플라바놀류(Flavanols) 292.1
플라본류(Flavones) -
플라보놀류(Flavonols) 509.7
이소플라본류(Isoflavones) -
총 플라보노이드(Total flavonoids) 801.8

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			와송
Flavanols	Epicatechin	(-)-epicatechin 3-O-gallate (ECG)	118.5
		(-)-epicatechin 3,5-di-O-gallate	173.6
		Total epicatechin contents	292.1
		kaempferol 3-O-rhamnoside (afzelin)	21.8
		kaempferol 3-O-galactoside (trifolin)	13.4
	Kaempferol	kaempferol 3-O-glucoside (astragalin)	177.3
		kaempferol 3-O-(6"-O-malonyl)glucoside	8.6
		kaempferol 3-O-rhamnoside-7-O-glucoside	29.1
		kaempferol 3-O-glucoside-7-O-rhamnoside	14.4
		kaempferol 3-O-rutinoside (nicotiflorin)	37.8
Flavonols	Quercetin	kaempferol 3,7-di-O-glucoside	23.3
		Total kaempferol contents	325.7
		quercetin 3-O-rhamnoside (quercitrin)	14.8
		quercetin 3-O-galatoside (hyperoside)	16.4
		quercetin 3-O-glucoside (isoquercitrin)	152.8
		Total quercetin contents	184.0



Flavonoids "Data Base 1.0"

# 참죽나무(잎)

Chinese toon(leaf)

(mg/100g dry weight)

참죽나무(잎)
---------

플라바논류(Flavanones)
-

플라바놀류(Flavanols)
-

플라본류(Flavones)
-

플라보놀류(Flavonols)
1874.5

이소플라본류(Isoflavones)
-

총 플라보노이드(Total flavonoids)
1874.5

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
			참죽나무(잎)
Flavonols	Kaempferol	kaempferol 3-O-rhamnoside (afzelin)	129.4
		Total kaempferol contents	129.4
	Quercetin	quercetin 3-O-arabinoside (gvajaverin)	15.2
		quercetin 3-O-galactoside (hyperoside)	27.9
		quercetin 3-O-glucoside (isoquercitrin)	152.8
		quercetin 3-O-rhamnoside (quercitrin)	1456.0
		quercetin 3-O-(2"-O-galloyl)glucoside	9.1
		quercetin 3-O-rhamnoside-7-O-glucoside	25.0
		quercetin 3-O-rutinoside (rutin)	59.1
		Total quercetin contents	1745.1

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타



# 초피나무

Pepper tree

잎	줄기	미숙과
플라바논류(Flavanones)	-	-
플라바놀류(Flavanols)	-	-
플라본류(Flavones)	-	-
플라보놀류(Flavonols)	2774.0	652.3
이소플라본류(Isoflavones)	-	-
총 플라보노이드(Total flavonoids)	2774.0	652.3

대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
			초피나무		
			잎	줄기	미숙과
Flavonols	Kaempferol	kaempferol 3-O-rhamnoside (afzelin)	326.3	5.2	2.2
		kaempferol 3-O-galactoside (trifolin)	44.2	18.1	19.1
		kaempferol 3-O-glucoside (astragalin)	143.4	1.6	2.6
		kaempferol 3-O-(6"-O-malonyl)glucoside	112.9	9.5	6.4
		Total kaempferol contents	626.8	34.4	30.3
	Quercetin	quercetin 3-O-xyloside (reynoutrin)	25.0	13.2	3.0
		quercetin 3-O-arabinoside (gvajaverin)	13.2	17.3	15.3
		quercetin 3-O-rhamnoside (quercitrin)	1405.8	120.0	44.0
		quercetin 3-O-galactoside (hyperoside)	434.7	350.7	425.7
		quercetin 3-O-glucoside (isoquercitrin)	57.2	15.3	41.8
		quercetin 3-O-(6"-O-malonyl)glucoside	29.2	26.4	29.0
		quercetin 3-O-rutinoside (rutin)	54.7	54.9	24.2
		Total quercetin contents	2019.8	597.8	583.0

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 초피나무

Pepper tree

(mg/100g dry weight)

임 줄기 미숙과	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)		
				초피나무		
				잎	줄기	미숙과
Flavonols	Isorhamnetin		isorhamnetin 3-O-galactoside	112.9	9.0	13.0
			isorhamnetin 3-O-glucoside	7.7	1.3	0.2
			isorhamnetin 3-O-(6"-O-malonyl)glucoside	2.3	1.5	5.1
			isorhamnetin 3-O-rhmanoside	2.7	-	-
			dihydroisorhamnetin 3-O-glucoside	1.8	8.3	44.5
			Total isorhamnetin contents	127.4	20.1	62.8



# 황기 Astragali radix

(mg/100g dry weight)

황기	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				황기
플라바노류(Flavanones) -			formononetin	20.7
플라바놀류(Flavanols) -			formononetin 7-O-glucoside (ononin)	6.6
플라본류(Flavones) -	Isoflavones	Formononetin	formononetin 7-O-(6"-O-malonyl)glucoside (6"-O-malonylononin)	23.2
플라보놀류(Flavonols) -			Total formononetin contents	50.5
이소플라본류(Isoflavones) 214.8			calycosin	61.8
이소플라반류(Isoflavanes) 11.8			calycosin 7-O-glucoside (astraisoflavoneglucoside)	25.0
총 플라보노이드(Total flavonoids) 226.6			calycosin 7-O-(6"-O-acetyl)glucoside	1.5
			calycosin 7-O-(6"-O-malonyl)glucoside	56.9
		Calycosin	Total calycosin contents	145.2
			odoratin	8.2
			odoratin 7-O-glucoside	2.0
			odoratin 7-O-(6"-O-malonyl)glucoside	8.9
	Isoflavanes	Methylnissolin	Total odoratin contents	19.1
			(6aR,11aR)-3-hydroxy-9,10-dimethoxypterocarpan (methylnissolin)	2.6
			(6aR,11aR)-9,10-dimethoxy pterocarpan 3-O-glucoside (methylnissolin 3-O-glucoside)	3.3
			methylnissolin 3-O-(6"-O-malonyl)glucoside (6"-O-malonyl astrapterocarpanglucoside)	2.3
			Total methylnissolin contents	8.2

다음페이지로 이어서



Flavonoids "Data Base 1.0"

# 황기 Astragali radix

(mg/100g dry weight)

황기	대분류 (Classes)	소분류 (Sub-classes)	개별성분 (Individual components)	함량(Contents)
				황기
Isoflavanes	Isomucronulatol		(3 <i>R</i> )-2'-hydroxy-3',4'-dimethoxyisoflavan 7- <i>O</i> -glucoside (isomucronulatol 7- <i>O</i> -glucoside)	1.2
			isomucronulatol 3- <i>O</i> -(6"- <i>O</i> -malonyl)glucoside (6"- <i>O</i> -malonyl astraisoflavanglucoside)	2.4
			Total isomucronulatol contents	3.6

기  
타



가을무 / 106

가을배추 / 95

가지고추 / 80

감귤(과육) / 155

감귤(과피) / 155

감귤(전체) / 155

갓 / 110

개두릅(怍나무 순) / 85

고사리(데친것) / 68

고사리(데친 후 침지) / 68

고사리(생것) / 68

고추장 / 214

고춧잎 / 73

곶감(건시) / 143

곶감(반건시) / 143



냉이 / 116

녹두 / 50

녹차(생엽) / 192

녹차(제품) / 192

느타리버섯 / 138

늙은호박(과육) / 88

늙은호박(전체) / 88



단감나무(열매) / 142

단감나무(잎) / 140

단호박 / 89

달단메밀(볶은것) / 37

달단메밀(생것) / 37

대두(대원) / 53

대두(대풍,볶은것) / 54

대두(대풍,생것) / 54

대두(대풍,짠것) / 54

대두(선유,볶은것) / 51

대두(선유,생것) / 51

대두(선유,짠것) / 51

대봉감(열매) / 142

대봉감나무(잎) / 140

대추나무(열매,건조) / 160

대추나무(열매,생것) / 160

대추나무(잎) / 160

대추방울토마토 / 135

된장 / 213

들깨 / 66

들깻묵 / 66

들깻잎 / 69

딸기 / 161



라임(과육) / 158

라임(과피) / 158

라임(전체) / 158

레몬(과육) / 153

레몬(과피) / 153

레몬(전체) / 153



마늘 / 86

망고(과육) / 162

망고(과피) / 162

망고(전체) / 162

매실 / 169

며위(잎) / 87

며위(줄기) / 87

메밀(껍질제거) / 36

메밀(껍질포함) / 36

메주 / 212

멜론(과육) / 166

멜론(과피) / 166

멥쌀(백미) / 39  
멥쌀(현미) / 40

## ㅂ

밤고구마 / 45  
방울양배추 / 103  
방울토마토 / 134  
배(과육) / 167  
배(과피) / 167  
배암차즈기(곰보배추) / 218  
보검선인장(백년초, 열매) / 220  
보검선인장(백년초, 엽상경) / 220  
보검선인장(백년초, 엽상경, 과육) / 220  
보리 / 38  
보리순 / 118  
복분자(A지역) / 175  
복분자(B지역) / 176  
복분자(C지역) / 177  
복분자(D지역) / 178  
복숭아(백도) / 170  
복숭아(천도) / 170  
복숭아(황도) / 170  
봄동 / 99  
붉은고추(생것) / 76

붉은고추(태양건조) / 76  
브로콜리(꽃송이) / 108

브로콜리(줄기) / 108  
블랙초크베리 / 179  
블루베리 / 181  
뽕나무(뽕잎) / 183  
뽕나무(오디) / 183

## ㅅ

사과(부사, 과육) / 184  
사과(부사, 과피) / 184  
사과(부사, 전체) / 184  
사과(아오리, 과육) / 185  
사과(아오리, 과피) / 185  
사과(아오리, 전체) / 185  
실구 / 168  
새송이버섯 / 138  
서리태(볶은것) / 56  
서리태(생것) / 56  
서리태(찐것) / 56  
서목태 / 58  
셀러리 / 123  
숙주나물 / 70  
시금치 / 125

쌈배추 / 97

아스파라거스 / 127  
애플망고(과육) / 163  
애플망고(과피) / 163  
애플망고(전체) / 163  
애호박 / 90  
앵두 / 172  
양배추 / 101  
양송이버섯 / 138  
양앵두 / 173  
양파(껍질제거) / 128  
양파(데친것) / 128  
열무 / 104  
오렌지(과육) / 147  
오렌지(과피) / 147  
오렌지(전체) / 147  
오이 / 91  
오이고추 / 78  
와송 / 224  
완두(꼬투리) / 60  
완두(전체) / 60  
완두(종자) / 60

용과(과육) / 186

용과(과피) / 186

유자 / 145

일반감자 / 44

## ㅈ

자몽(과육) / 149

자몽(과피) / 149

자몽(전체) / 149

자색감자 / 44

자색고구마 / 45

자색양파(껍질) / 130

자색양파(껍질제거) / 130

작두콩(꼬투리) / 62

작두콩(종자,백색) / 62

작두콩(종자,적색) / 62

저단선(천년초,엽상경) / 222

저단선(천년초,엽상경,과육) / 222

적갓 / 114

적꽃상추 / 121

적상추 / 120

적양배추 / 102

적포기상추 / 122

## ㅊ

참당귀(잎) / 216

참두릅(두릅나무 순) / 84

참외 / 165

참죽나무(잎) / 225

찹쌀현미(화선찰벼) / 41

청경채 / 94

청포도(과육) / 189

청포도(과피) / 189

청포도(전체) / 189

체리 / 174

초피나무(미숙과) / 226

초피나무(잎) / 226

초피나무(줄기) / 226

칡 / 46

## ㅋ

케일(노지) / 92

케일(하우스) / 92

콩나물 / 72

## ㅌ

토마토 / 132

## ㅍ

파프리카(녹색) / 82

파프리카(적색) / 82

파프리카(황색) / 82

팽이버섯 / 138

포도(거봉,과육) / 187

포도(거봉,과피) / 187

포도(거봉,전체) / 187

포도(캠벨,과육) / 188

포도(캠벨,과피) / 188

포도(캠벨,전체) / 188

풋고추 / 74

프랑스산 와인(끌로세리드 까망사) / 200

프랑스산 와인(라 크라사드 까베르네 시라) / 198

프랑스산 와인(르 그랑누아 까베르네 쇼비뇽) / 202

프랑스산 와인(바롱 레스탁 블랑) / 199

피망(녹색) / 81

피망(적색) / 81

피자두 / 171

## ㅎ

한국산 와인(샤토마니 누보) / 209

한국산 와인(샤토마니 드라이 레드) / 204

한국산 와인(샤토마니 드라이 레드 마스터즈 콜렉션) / 207

한국산 와인(샤토마니 드라이 화이트) / 206

한라봉(과육) / 151

한라봉(과피) / 151

한라봉(전체) / 151

호박고구마 / 45

홍시 / 144

홍차(생엽) / 194

홍차(제품) / 194

황기 / 228

흑미 / 42

흑태 / 59

흑토마토 / 133

# Chemical index

## A

apigenin / 66, 218,  
apigenin 6,8-di-C-glucoside (vicenin-2) / 74, 76, 78, 80, 81, 82, 146, 149, 150, 152, 153, 156, 158  
apigenin 6-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylisovitexin, isobursakonin) / 116  
apigenin 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylisovitexin, isobursakotexin) / 91, 116  
apigenin 6-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylisovitexin) / 152, 156, 158  
apigenin 6-C-arabinoside-8-C-glucoside (isoschaftoside) / 40, 41, 42, 74, 76, 78, 80, 81, 82, 116, 118  
apigenin 6-C-glucoside (isovitexin) / 36, 50, 70, 116, 118, 158  
apigenin 6-C-glucoside-8-C-arabinoside (schaftoside) / 40, 41, 42, 74, 76, 78, 80, 81, 82, 116, 118  
apigenin 6-C-glucoside-8-C-xyloside / 40, 41, 42  
apigenin 7-O-(2"-O-apiosyl)glucoside (apiin) / 73, 74, 76, 123  
apigenin 7-O-(2"-O-apiosyl-4"-O-malonyl)glucoside (4"-O-malonylapiin) / 123  
apigenin 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside (6"-O-malonylapiin) / 73, 74, 76, 78, 80, 82, 123  
apigenin 7-O-(6"-O-caffeooyl)glucoside / 69  
apigenin 7-O-(6"-O-malonyl)glucoside / 123  
apigenin 7-O-[2"-O-(5"-O-feruloyl)apiosyl]glucoside / 123  
apigenin 7-O-glucoside (cosmosiin) / 66, 69, 73, 116, 123, 218  
apigenin 7-O-glucuronide / 69  
apigenin 7-O-glucuronosyl(1→2)glucuronide (apigenin 7-O-diglucuronide) / 69  
apigenin 7-O-neohesperidoside (rhoifolin) / 146, 150  
apigenin 7-O-rutinoside (isorhoifolin) / 146, 152, 153, 156, 158  
apigenin 7-O-rutinoside-4'-O-glucoside (isorhoifolin 4'-O-glucoside) / 152

apigenin 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylvitexin, bursakonin) / 116  
apigenin 8-C-(2"-O-xylosyl)glucoside (2"-O-xylosylvitexin) / 147  
apigenin 8-C-(6"-O-arabinosyl)glucoside (6"-O-arabinosylvitexin) / 152, 156, 158  
apigenin 8-C-glucoside (vitexin) / 36, 50, 70, 158

## B

biochanin A 7-O-glucoside (sissotrin) / 71

## C

(+)-catechin / 187, 188, 189, 198, 200, 202, 204, 207, 209  
calycosin / 228  
calycosin 7-O-(6"-O-acetyl)glucoside / 228  
calycosin 7-O-(6"-O-malonyl)glucoside / 228  
calycosin 7-O-glucoside (astraisoflavoneglucoside) / 228  
chrysoeriol / 66  
chrysoeriol 6,8-di-C-glucoside (stellarin-2) / 146, 148, 152, 153, 156, 159  
chrysoeriol 6-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylscoparin, isobursakorol) / 117  
chrysoeriol 6-C-(2"-O-glucosyl)glucoside (2"-O-glucosylscoparin, isobursakoparin) / 117  
chrysoeriol 6-C-arabinoside-8-C-glucoside / 40, 41, 42  
chrysoeriol 6-C-glucoside (isoscoparin) / 116, 119  
chrysoeriol 6-C-glucoside-8-C-arabinoside / 40, 41, 119  
chrysoeriol 7-O-(2"-O-apiosyl)glucoside / 73, 123  
chrysoeriol 7-O-(2"-O-apiosyl-4"-O-malonyl)glucoside / 124

chrysoeriol 7-O-(2"-O-apiosyl-6"-O-malonyl)glucoside / 73, 74, 76, 78, 80, 82, 124  
 chrysoeriol 7-O-(6"-O-malonyl)glucoside / 123  
 chrysoeriol 7-O-[2"-O-(5""-O-feruloyl)apiosyl]glucoside / 124  
 chrysoeriol 7-O-glucoside (thermopsoside) / 73, 116, 123  
 chrysoeriol 7-O-rutinoside / 148, 152, 153, 156, 159, 216  
 chrysoeriol 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylscoparin, bursakorol) / 116

**D**

(6a*R*,11a*R*)-9,10-dimethoxy pterocarpan 3-O-glucoside (methylnissolin 3-O-glucoside) / 228  
 5,4'-dihydroxy-3,3'-dimethoxy-6:7-methylenedioxyflavone 4'-O-glucuronide (spinaasocin) / 126  
 5,4'-dihydroxy-3-methoxy-6:7-methylenedioxyflavone 4'-O-glucuronide (spinaasanin) / 126  
 daidzein / 51, 53, 54, 56, 58, 59, 71, 72, 212, 213, 214  
 daidzein 7,4'-di-O-glucoside (daidzin 4'-O-glucoside) / 46  
 daidzein 7-O-(4"-O-acetyl)glucoside (4"-O-acetyldaidzin) / 51, 54, 56  
 daidzein 7-O-(4"-O-malonyl)glucoside (4"-O-malonyldaidzin) / 51, 53, 54, 56, 58, 59, 72  
 daidzein 7-O-(6"-O-acetyl)glucoside (6"-O-acetyldaidzin) / 51, 53, 54, 56, 58, 59  
 daidzein 7-O-(6"-O-malonyl)glucoside (6"-O-malonyldaidzin) / 46, 51, 53, 54, 56, 58, 59, 72  
 daidzein 7-O-(6"-O-malonyl)glucoside-4'-O-glucoside / 46  
 daidzein 7-O-glucoside (daidzin) / 46, 51, 53, 54, 56, 58, 59, 71, 72, 212  
 daidzein 8-C-apiosyl(1→6)glucoside (6"-O-apiosylpuerarin) / 46  
 daidzein 8-C-glucoside (puerarin) / 46  
 daidzein 8-C-glucoside-4'-O-glucoside (puerarin 4'-O-glucoside) / 46  
 daidzein 8-C-xylosyl(1→2)glucoside (2"-O-xylosylpuerarin) / 46

daidzein 8-C-xylosyl(1→6)glucoside (6"-O-xylosylpuerarin) / 46  
 dihydroisorhamnetin 3-O-glucoside / 227  
 diosmetin 6,8-di-C-glucoside (lucenin-2 4'-methyl ether) / 148, 152, 154, 156, 159  
 diosmetin 6-C-glucoside (isoorientin 4'-methyl ether) / 154, 159  
 diosmetin 7-O-rutinoside (diosmin) / 146, 148, 152, 154, 156, 159  
 diosmetin 8-C-glucoside (orientin 4'-methyl ether) / 154, 159

**E**

(-)-epicatechin (EC) / 167, 168, 179, 184, 185, 187, 188, 189, 192, 194, 198, 200, 202, 204  
 (-)-epicatechin 3,5-di-O-gallate / 224  
 (-)-epicatechin 3-O-gallate (ECG) / 188, 192, 194, 224  
 (-)-epigallocatechin (EGC) / 192, 194  
 (-)-epigallocatechin 3-O-gallate (EGCG) / 192, 194  
 eriodictyol 7-O-glucuronide / 179  
 eriodictyol 7-O-neohesperidoside (neoeriocitrin) / 145  
 eriodictyol 7-O-rutinoside (eriocitrin) / 145, 153, 158

**F**

formononetin / 228  
 formononetin 7-O-(6"-O-malonyl)glucoside (6"-O-malonylononin) / 47, 228  
 formononetin 7-O-glucoside (ononin) / 47, 228  
 formononetin 8-C-apiosyl(1→6)glucoside (6"-O-apiosyl-4'-methoxypuerarin) / 47  
 formononetin 8-C-glucoside (4'-methoxypuerarin) / 47

formononetin 8-C-xylosyl(1→6)glucoside (6"-O-xylosyl-4'-methoxypuerarin) / 47

## G

genistein / 51, 53, 54, 56, 58, 59, 71, 72, 212, 213, 214

genistein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylgenistin) / 51, 54, 56

genistein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylgenistin) / 51, 53, 54, 56, 58, 59, 72

genistein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylgenistin) / 51, 54, 56, 58, 59, 72

genistein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylgenistin) / 47, 51, 53, 54, 56, 58, 59, 72, 212

genistein 7-O-glucoside (genistin) / 47, 51, 53, 54, 56, 58, 59, 71, 72, 212

genistein 8-C-apiosyl(1→6)glucoside (6"-O-apiosyl-5-hydroxypuerarin) / 47

genistein 8-C-glucoside (5-hydroxypuerarin) / 47

genistein 8-C-xylosyl(1→6)glucoside (6"-O-xylosyl-5-hydroxypuerarin) / 47

glycitein / 52, 55, 57, 58, 59, 72, 212, 213, 214

glycitein 7-O-(4"-O-acetyl)glucoside (4"-O-acetylglycitin) / 52, 55, 57

glycitein 7-O-(4"-O-malonyl)glucoside (4"-O-malonylglycitin) / 52, 55, 57, 58

glycitein 7-O-(6"-O-acetyl)glucoside (6"-O-acetylglycitin) / 52, 55, 57, 58, 59, 72

glycitein 7-O-(6"-O-malonyl)glucoside (6"-O-malonylglycitin) / 47, 52, 53, 55, 57, 58, 59, 72

glycitein 7-O-glucoside (glycitin) / 52, 53, 55, 57, 58, 59, 72, 212

## H

(3R)-2'-hydroxy-3',4'-dimethoxyisoflavan 7-O-glucoside (isomucronulatol 7-O-glucoside) / 229

(6a*R*,11*aR*)-3-hydroxy-9,10-dimethoxypterocarpan (methylnissolin) / 228

2'-hydroxyluteolin 6-C-glucoside (2'-hydroxyisoorientin) / 118

3,5,6,7,3',4'-hexamethoxyflavone (quercetogetin) / 147, 151

3,5,6,7,8,3',4'-heptamethoxyflavone / 147, 150, 151, 155

3'-hydroxydaidzein 8-C-glucoside (3'-hydroxypuerarin) / 46

5,6,7,8,3',4'-hexamethoxyflavone (nobiletin) / 147, 150, 151, 155

6-hydroxyluteolin 7-O-glucoside / 218

hesperetin 7-O-rutinoside-3'-O-glucoside (hesperidin 3'-O-glucoside) / 155

hesperetin 7-O-(2",6"-di-O-rhamnosyl)glucoside / 145

hesperetin 7-O-neohesperidoside (neohesperidin) / 145, 149

hesperetin 7-O-rutinoside (hesperidin) / 145, 147, 149, 151, 153, 155, 158

hispidulin / 219

hispidulin 7-O-glucoside (homoplantaginin) / 219

## I

isomucronulatol 3-O-(6"-O-malonyl)glucoside (6"-O-malonyl astraisoflavanglucofuranose) / 229

isoorientin 7-O-(6"-O-feruloyl)glucoside (6"-O-feruloyllutonarin) / 118

isoorientin 7-O-(6"-O-p-coumaroyl)glucoside (6"-O-p-coumaroyllutonarin) / 118

isoorientin 7-O-(6"-O-sinapoyl)glucoside (6"-O-sinapoyllutonarin) / 118

isoorientin 7-O-glucoside (lutonarin) / 118

isoorientin 7-O-rutinoside / 118

isorhamnetin / 198, 201, 202, 204, 207, 209, 221, 222

isorhamnetin 3,4'-di-O-glucoside / 129, 131, 221, 223

isorhamnetin 3,7-di-O-glucoside / 94, 96, 98, 100, 113, 115

isorhamnetin 3-methyl ether / 221

- isorhamnetin 3-*O*-(2"-*O*-glucosyl-6"-*O*-rhamnosyl)glucoside / 127  
 isorhamnetin 3-*O*-(6"-*O*-malonyl)galactoside / 222  
 isorhamnetin 3-*O*-(6"-*O*-malonyl)glucoside / 75, 77, 79, 80, 83, 113, 115, 217, 222, 227  
 isorhamnetin 3-*O*-(6"-*O*-malonyl)glucoside-7-*O*-glucoside / 113, 115  
 isorhamnetin 3-*O*-galactoside / 141, 167, 180, 181, 186, 201, 217, 221, 222, 223, 227  
 isorhamnetin 3-*O*-galactoside-4'-*O*-glucoside / 221, 223  
 isorhamnetin 3-*O*-glucoside / 88, 94, 96, 98, 100, 113, 115, 141, 180, 181, 186, 187, 217, 221, 222, 227  
 isorhamnetin 3-*O*-glucoside-7-*O*-rhamnoside / 88  
 isorhamnetin 3-*O*-glucuronide / 161  
 isorhamnetin 3-*O*-rhamnoside-7-*O*-rutinoside / 186, 221  
 isorhamnetin 3-*O*-robinobioside / 88, 180, 181, 186, 217, 221, 222  
 isorhamnetin 3-*O*-robinobioside-7-*O*-rhamnoside / 88  
 isorhamnetin 3-*O*-rutinoside (narcissin) / 88, 90, 127, 157, 167, 180, 181, 186, 217, 221, 222  
 isorhamnetin 3-*O*-rutinoside-4'-*O*-glucoside / 221, 223  
 isorhamnetin 3-*O*-rutinoside-7-*O*-glucoside (narcissin 7-*O*-glucoside) / 157  
 isorhamnetin 3-*O*-rutinoside-7-*O*-rhamnoside / 88, 186  
 isorhamnetin 3-*O*-sophoroside / 61, 115  
 isorhamnetin 3-*O*-sophoroside-7-*O*-glucoside / 115  
 isorhamnetin 3-*O*-triglucoside / 113, 115  
 isorhamnetin 3-*O*-vicianoside / 180  
 isorhamnetin 3-*O*-xylosyl(1→6)galactoside / 217  
 isorhamnetin 3-*O*-xylosyl(1→6)glucoside / 217  
 isorhamnetin 4'-*O*-glucoside / 129, 131  
 isorhamnetin 7-*O*-glucoside / 113  
 isorhamnetin 7-*O*-sophoroside / 113  
 isorhamnetin 7-*O*-rutinoside / 157, 186, 221  
 isosakuranetin 7-*O*-neohesperidoside (poncirin) / 145, 149  
 isosakuranetin 7-*O*-rutinoside (didymin) / 145, 147, 149, 151, 155, 158  
 isoscoparin 2"-*O*-(6'''-*O*-*p*-coumaroyl)glucoside / 91  
 isoscoparin 7-*O*-(6"-*O*-feruloyl)glucoside / 119  
 isoscoparin 7-*O*-(6"-*O*-sinapoyl)glucoside / 119  
 isoscoparin 7-*O*-glucoside / 119  
 isoscoparin 7-*O*-rutinoside / 119  
 isovitexin 2"-*O*-(6'''-*O*-feruloyl)glucoside / 91  
 isovitexin 2"-*O*-(6'''-*O*-*p*-coumaroyl)glucoside / 91  
 isovitexin 7-*O*-(6"-*O*-feruloyl)glucoside (6"-*O*-feruloylsaponarin) / 118  
 isovitexin 7-*O*-(6"-*O*-feruloyl)glucoside-4'-*O*-glucoside / 118  
 isovitexin 7-*O*-(6"-*O*-sinapoyl)glucoside (6"-*O*-sinapoylsaponarin) / 118  
 isovitexin 7-*O*-glucoside (saponarin) / 118  
 isovitexin 7-*O*-rutinoside / 118

**J**

jaceidin 4'-*O*-glucuronide / 126

**K**

- kaempferol / 37, 95, 110, 140, 172, 174, 192, 194, 198, 200, 202, 220, 222  
kaempferol 3,4'-di-*O*-glucoside (allivicin) / 128, 130  
kaempferol 3,7-di-*O*-glucoside / 92, 94, 95, 97, 99, 108, 110, 114, 183, 224  
kaempferol 3,7-di-*O*-rhamnoside (kaempferitrin) / 104, 106  
kaempferol 3-methyl ether / 220  
kaempferol 3-*O*-(2<sup>'''</sup>,6<sup>'''</sup>-di-*O*-sinapoyl)sophorotrioside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>,6<sup>'''</sup>-di-*O*-sinapoyl)sophorotrioside-7-*O*-glucoside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>,6<sup>'''</sup>-di-*O*-sinapoyl)sophorotrioside-7-*O*-sophoroside / 109  
kaempferol 3-*O*-(2<sup>'''</sup>,6<sup>'''</sup>-di-*O*-sinapoyl)triglucoside-7-*O*-diglucoside / 92  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)sophoroside / 110  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)sophoroside-7-*O*-diglucoside / 92  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)sophoroside-7-*O*-glucoside / 92, 94, 95, 97, 99, 110, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)sophorotrioside-7-*O*-glucoside / 95, 97, 99, 111  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)sophorotrioside-7-*O*-sophoroside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl)triglucoside-7-*O*-glucoside / 111, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl-6<sup>'''</sup>-*O*-sinapoyl)sophorotrioside-7-*O*-glucoside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-caffeyl-6<sup>'''</sup>-*O*-sinapoyl)sophorotrioside-7-*O*-sophoroside / 109  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)sophoroside / 110  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)sophoroside-7-*O*-diglucoside / 92  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)sophoroside-7-*O*-glucoside / 92, 94, 95, 97, 99, 108, 110, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)sophorotrioside-7-*O*-glucoside / 95, 97, 99, 108, 111  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)sophorotrioside-7-*O*-sophoroside / 109  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl)triglucoside-7-*O*-glucoside / 111, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl-6<sup>'''</sup>-*O*-sinapoyl)sophorotrioside-7-*O*-glucoside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-feruloyl-6<sup>'''</sup>-*O*-sinapoyl)sophorotrioside-7-*O*-sophoroside / 109  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-hydroxyferuloyl)sophoroside / 110  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-hydroxyferuloyl)sophoroside-7-*O*-diglucoside / 92  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-hydroxyferuloyl)sophoroside-7-*O*-glucoside / 92, 95, 97, 99, 110, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-hydroxyferuloyl)sophorotrioside-7-*O*-glucoside / 95, 97, 99, 111  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-hydroxyferuloyl)triglucoside-7-*O*-glucoside / 111, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-methoxycaffeoyl)sophorotrioside-7-*O*-sophoroside / 108  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-methoxycaffeoyl-6<sup>'''</sup>-*O*-sinapoyl)sophorotrioside-7-*O*-sophoroside / 109  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-*p*-coumaroyl)gentiobioside-7-*O*-glucoside / 92, 97, 99  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-*p*-coumaroyl)sophoroside-7-*O*-diglucoside / 92  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-*p*-coumaroyl)sophoroside-7-*O*-glucoside / 92, 94, 97, 99, 110, 114  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-rhamnosyl)robinobioside-7-*O*-(2<sup>'''</sup>-*O*-*o*-anisoyl)rhamnoside (gladiatoside B<sub>3</sub>) / 62  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-rhamnosyl)robinobioside-7-*O*-(3<sup>'''</sup>-*O*-*o*-anisoyl)rhamnoside (gladiatoside B<sub>2</sub>) / 62  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-rhamnosyl)robinobioside-7-*O*-(4<sup>'''</sup>-*O*-*o*-anisoyl)rhamnoside (gladiatoside B<sub>1</sub>) / 62  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-rhamnosyl)robinobioside-7-*O*-rhamnoside (gladiatoside B) / 62  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-sinapoyl)sophoroside / 108, 110  
kaempferol 3-*O*-(2<sup>'''</sup>-*O*-sinapoyl)sophoroside-7-*O*-diglucoside / 92

- kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)sophoroside-7-O-glucoside / 92, 94, 95, 97, 99, 108, 110, 114  
 kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)sophorotrioside / 108, 110  
 kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)sophorotrioside-7-O-glucoside / 95, 97, 99, 108, 111  
 kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)sophorotrioside-7-O-sophoroside / 109  
 kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)triglucoside-7-O-diglucoside / 92  
 kaempferol 3-O-(2<sup>'''</sup>-O-sinapoyl)triglucoside-7-O-glucoside / 111, 114  
 kaempferol 3-O-(3<sup>'''</sup>-O-galactosyl)rutinoside / 192, 194  
 kaempferol 3-O-(3<sup>'''</sup>-O-glucosyl)rutinoside / 117, 192, 194  
 kaempferol 3-O-(4<sup>''</sup>-O-acetyl)rutinoside (cerakorin) / 172  
 kaempferol 3-O-(6<sup>''</sup>-O-acetyl)glucoside / 87, 161  
 kaempferol 3-O-(6<sup>''</sup>-O-acetyl)glucoside-7-O-glucoside / 87  
 kaempferol 3-O-(6<sup>''</sup>-O-caffeyl)glucoside / 87  
 kaempferol 3-O-(6<sup>''</sup>-O-malonyl)glucoside / 68, 87, 117, 161, 224, 226  
 kaempferol 3-O-(6<sup>''</sup>-O-malonyl)glucoside-7-O-glucoside / 87  
 kaempferol 3-O-(6<sup>'''</sup>-O-feruloyl)sophoroside / 60  
 kaempferol 3-O-(6<sup>'''</sup>-O-malonyl)glucoside-7-O-rhamnoside (moragrol C) /  
 kaempferol 3-O-(6<sup>'''</sup>-O-malonyl)sophoroside (pisumol A) / 60  
 kaempferol 3-O-(6<sup>'''</sup>-O-malonyl)sophorotrioside (pisumol B) / 60  
 kaempferol 3-O-(6<sup>'''</sup>-O-p-coumaroyl)sophoroside / 60  
 kaempferol 3-O-(6<sup>'''</sup>-O-sinapoyl)sophoroside / 60  
 kaempferol 3-O-(2<sup>''</sup>-O-galloyl)galactoside / 140  
 kaempferol 3-O-(2<sup>''</sup>-O-galloyl)glucoside / 140  
 kaempferol 3-O-arabinofuranoside / 162, 163  
 kaempferol 3-O-arabinoside (juglalin) / 140, 162, 163  
 kaempferol 3-O-galactoside (trifolin) / 68, 85, 140, 162, 163, 170, 192, 194, 200, 220, 224, 226  
 kaempferol 3-O-galactoside-7-O-rhamnoside / 62, 88, 89  
 kaempferol 3-O-glucoside (astragalin) / 37, 68, 70, 87, 92, 94, 95, 97, 99, 101, 103, 110, 117,  
     140, 161, 162, 163, 168, 170, 172, 174, 179, 181, 182, 187, 189, 192, 194, 216, 220, 224, 226  
 kaempferol 3-O-glucoside-7-O-rhamnoside / 88, 90, 104, 106, 224  
 kaempferol 3-O-glucoside-7-O-sophoroside / 108  
 kaempferol 3-O-glucosyl(1 $\rightarrow$ 2)rhamnoside-7-O-(6<sup>'''</sup>-O-caffeyl)glucosyl(1 $\rightarrow$ 2)(4<sup>''</sup>-O-caffeyl)  
     rhamnoside (raphanol F) / 104, 106  
 kaempferol 3-O-glucosyl(1 $\rightarrow$ 2)rhamnoside-7-O-(6<sup>'''</sup>-O-caffeyl)glucosyl(1 $\rightarrow$ 2)rhamnoside  
     (raphanol D) / 104, 106  
 kaempferol 3-O-glucosyl(1 $\rightarrow$ 2)rhamnoside-7-O-(6<sup>'''</sup>-O-feruloyl)glucosyl(1 $\rightarrow$ 2)(4<sup>''</sup>-O-caffeyl)  
     rhamnoside (raphanol G) / 104, 106  
 kaempferol 3-O-glucosyl(1 $\rightarrow$ 2)rhamnoside-7-O-(6<sup>'''</sup>-O-feruloyl)glucosyl(1 $\rightarrow$ 2)rhamnoside  
     (raphanol E) / 104, 106  
 kaempferol 3-O-glucosyl(1 $\rightarrow$ 2)rhamnoside-7-O-rhamnoside (elatanol A) / 84  
 kaempferol 3-O-glucuronide / 161, 189  
 kaempferol 3-O-rhamnoside (afzelin) / 104, 172, 189, 224, 225, 226  
 kaempferol 3-O-rhamnoside-7-O-(6<sup>'''</sup>-O-caffeyl)glucosyl(1 $\rightarrow$ 2)rhamnoside (raphanol B) /  
     104, 106  
 kaempferol 3-O-rhamnoside-7-O-(6<sup>'''</sup>-O-feruloyl)glucosyl(1 $\rightarrow$ 2)rhamnoside (raphanol C) / 104, 106  
 kaempferol 3-O-rhamnoside-7-O-arabinoside / 104, 106  
 kaempferol 3-O-rhamnoside-7-O-glucoside / 104, 106, 183, 224  
 kaempferol 3-O-rhamnoside-7-O-glucosyl(1 $\rightarrow$ 2)rhamnoside (raphanol A) / 104, 106  
 kaempferol 3-O-rhamnosyl (1 $\rightarrow$ 6)-(2<sup>''</sup>-O-apiosyl)glucoside (solagrol) / 132, 133, 134, 135

kaempferol 3-*O*-robinobioside / 88, 90, 160, 186, 220, 222

kaempferol 3-*O*-robinobioside-7-*O*-rhamnoside (robinin) / 62, 88, 90

kaempferol 3-*O*-rutinoside (nicotiflorin) / 33, 68, 70, 87, 88, 90, 117, 127, 132, 133, 135, 135, 157, 160, 161, 168, 172, 173, 174, 179, 181, 183, 186, 192, 194, 216, 220, 222, 224

kaempferol 3-*O*-rutinoside-4'-*O*-glucoside / 37

kaempferol 3-*O*-rutinoside-7-*O*-glucoside (nicotiflorin 7-*O*-glucoside, moragrol A) / 157

kaempferol 3-*O*-rutinoside-7-*O*-rhamnoside (nicotiflorin 7-*O*-rhamnoside, moragrol B) / 88, 90, 157

kaempferol 3-*O*-sophoroside / 60, 92, 94, 95, 101, 103, 108, 110, 114

kaempferol 3-*O*-sophoroside-7-*O*-diglucoside / 92

kaempferol 3-*O*-sophoroside-7-*O*-glucoside / 92, 94, 95, 97, 99, 101, 103, 108, 110, 114

kaempferol 3-*O*-sophoroside-7-*O*-sophoroside / 108

kaempferol 3-*O*-sophorotrioside / 60

kaempferol 3-*O*-sophorotrioside-7-*O*-glucoside / 97, 99

kaempferol 3-*O*-triglucoside / 110, 111, 114

kaempferol 3-*O*-triglucoside-7-*O*-glucoside / 111, 114

kaempferol 3-*O*-vicianoside / 179

kaempferol 3-*O*-xyloside / 140, 162, 163, 172

kaempferol 4'-*O*-glucoside / 128, 130

kaempferol 7-*O*-glucosyl(1→2)rhamnoside / 106

kaempferol 7-*O*-rhamnoside / 104, 106

kaempferol 7-*O*-rhamnoside-4'-*O*-glucoside / 68

kaempferol 7-*O*-sophoroside / 110

## L

laricitrin / 198, 201, 203, 205, 208, 209

laricitrin 3-*O*-arabinoside / 182

laricitrin 3-*O*-galactoside / 182

laricitrin 3-*O*-glucoside / 182, 187, 188, 189, 198, 201, 203, 205, 208, 209

laricitrin 3-*O*-robinobioside / 63

laricitrin 3-*O*-rutinoside / 63

luteolin / 66, 218

luteolin 5-*O*-glucoside (galuteolin) / 218

luteolin 6,8-di-*C*-glucoside (lucenin-2) / 74, 76, 78, 80, 81, 82, 148, 152, 153, 156

luteolin 6-*C*-(2"-*O*-arabinosyl)glucoside (2"-*O*-arabinosylisoorientin, isobursakolin) / 116

luteolin 6-*C*-(2"-*O*-glucosyl)glucoside (2"-*O*-glucosylisoorientin, isobursakorientin) / 116

luteolin 6-*C*-arabinoside-8-*C*-glucoside / 40, 41, 42, 74, 118

luteolin 6-*C*-glucoside (isoorientin) / 36, 50, 74, 76, 78, 80, 81, 82, 118, 159

luteolin 6-*C*-glucoside-8-*C*-arabinoside (carlinoside) / 40, 41, 74, 76, 78, 81, 82

luteolin 6-*C*-glucoside-8-*C*-xyloside / 40, 41, 42

luteolin 7-*O*-(2"-*O*-apiosyl)glucoside / 73, 74, 76, 78, 81, 82, 123

luteolin 7-*O*-(2"-*O*-apiosyl-4'-*O*-malonyl)glucoside / 123

luteolin 7-*O*-(2"-*O*-apiosyl-6"-*O*-malonyl)galactoside / 73, 74, 76, 78, 80, 81, 82

luteolin 7-*O*-(2"-*O*-apiosyl-6"-*O*-malonyl)glucoside / 73, 74, 76, 78, 80, 81, 82, 123

luteolin 7-*O*-(6"-*O*-malonyl)glucoside / 73, 74, 76, 78, 80, 81, 82, 120, 121, 122, 123

luteolin 7-*O*-[2"-*O*-(5"-*O*-feruloyl)apiosyl]glucoside / 121

luteolin 7-*O*-glucoside (cynaroside) / 66, 69, 116, 120, 121, 122, 123, 167, 218

luteolin 7-O-glucuronide / 69, 120, 121, 122

luteolin 7-O-glucuronosyl(1→2)glucuronide (luteolin 7-O-diglucuronide) / 69

luteolin 7-O-rutinoside (scolymoside) / 148, 152, 153, 156, 159, 167

luteolin 8-C-(2"-O-arabinosyl)glucoside (2"-O-arabinosylorientin, bursakolin) / 116

luteolin 8-C-glucoside (orientin) / 36, 50, 74, 76, 80, 81, 82, 116, 159

## M

3'-methoxydaidzein 8-C-glucoside (3'-methoxypuerarin) / 46

methylnissolin 3-O-(6"-O-malonyl)glucoside (6"-O-malonyl astrapterocarpanglucoside) / 228

myricetin / 198, 201, 203, 204, 207, 209

myricetin 3-O-(3""-O-galactosyl)rutinoside / 193, 195

myricetin 3-O-(3""-O-glucosyl)rutinoside / 193, 195

myricetin 3-O-arabinoside / 182

myricetin 3-O-galactoside / 141, 182, 193, 195, 201, 203, 204, 207

myricetin 3-O-glucoside (isomyricitin) / 63, 141, 182, 187, 188, 193, 195

myricetin 3-O-rutinoside / 63

## N

naascenin A / 128, 130

naascenin B / 128, 130

naascenin C / 128, 130

naascenin D / 128, 130

naascenin E / 128, 130

naascenin F / 128, 130

naringenin / 132, 133, 134, 135

naringenin 7-O-(2",6"-di-O-rhamnosyl)glucoside / 145

naringenin 7-O-(2",6"-di-O-rhamnosyl)glucoside-4'-O-glucoside / 145

naringenin 7-O-(2"-O-rhamnosyl)(6"-O-3""-hydroxy-3""-methylglutaryl)glucoside (melitidin) / 149

naringenin 7-O-(4"-O-malonyl)neohesperidoside (4"-O-malonylnaringin) / 149

naringenin 7-O-(4"-O-malonyl)rutinoside (4"-O-malonylnarirutin) / 149

naringenin 7-O-neohesperidoside (naringin) / 70, 145, 149

naringenin 7-O-neohesperidoside-4'-O-glucoside (naringin 4'-O-glucoside) / 145, 149

naringenin 7-O-rutinoside (narirutin) / 145, 147, 149, 151, 153, 155, 158

naringenin 7-O-rutinoside-4'-O-glucoside (narirutin 4'-O-glucoside) / 145, 147, 149, 151, 155

naringenin chalcone (chalconaringenin) / 132, 133, 134, 135

nepetin / 219

nepetin 7-O-glucoside (nepitrin) / 219

## O

odoratin / 228

odoratin 7-O-(6"-O-malonyl)glucoside / 228

odoratin 7-O-glucoside / 228

## P

5,7,8,3',4'-pentamethoxyflavone (isosinensetin) / 151, 155

5,6,7,8,4'-pentamethoxyflavone (tangeretin) / 155

- 5,6,7,3',4'-pentahydroxyflavanone 7-*O*-glucoside (naasalvinin B) / 218  
5,6,7,3',4'-pentamethoxyflavone (sinensetin) / 147, 150, 151, 155  
patuletin 3-*O*-(2"-*O*-feruloylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside / 125  
patuletin 3-*O*-(2"-*O*-feruloylglucosyl)(1→6)glucoside / 125  
patuletin 3-*O*-(2"-*O*-*p*-coumaroylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside / 125  
patuletin 3-*O*-(2"-*O*-*p*-coumaroylglucosyl)(1→6)glucoside / 125  
patuletin 3-*O*-glucoside / 125  
patuletin 3-*O*-glucosyl(1→6)-[apiosyl(1→2)]-glucoside / 125  
patuletin 3-*O*-gentiobioside / 125  
phloretin 2'-*O*-(2"-*O*-xylosyl)glucoside / 184, 185  
phloretin 2'-*O*-glucoside (phloridzin) / 184, 185  
phloretin 3',5'-di-*C*-glucoside / 132, 133, 134, 135, 160
- quercetin / 163, 171, 174, 175, 176, 177, 178, 179, 181, 189, 193, 195, 198, 200, 202, 204, 206, 207, 209, 216, 220, 222  
quercetin 3,4'-di-*O*-glucoside / 128, 130  
quercetin 3,7,4'-tri-*O*-glucoside / 128, 130  
quercetin 3,7-di-*O*-glucoside / 100, 111, 114, 183, 200, 202, 204, 207  
quercetin 3,7-di-*O*-rhamnoside / 84, 105, 107  
quercetin 3-*O*-(2",6"-di-*O*-rhamnosyl)galactoside / 169  
quercetin 3-*O*-(2",6"-di-*O*-rhamnosyl)glucoside / 169  
quercetin 3-*O*-(2",6""-di-*O*-sinapoyl)triglucoside-7-*O*-diglucoside / 93  
quercetin 3-*O*-(2"-*O*-glucosyl-6"-*O*-rhamnosyl)glucoside / 127  
quercetin 3-*O*-(2"-*O*-acetyl)glucoside / 169, 200, 202, 204  
quercetin 3-*O*-(2"-*O*-acetyl)neohesperidoside (mumikotin B) / 169  
quercetin 3-*O*-(2"-*O*-acetyl)rutinoside (mumikotin A) / 169  
quercetin 3-*O*-(2"-*O*-apiosyl)glucoside-7-*O*-glucoside / 75  
quercetin 3-*O*-(2"-*O*-apiosyl-6"-*O*-malonyl)glucoside / 75  
quercetin 3-*O*-(2"-*O*-apiosyl-6"-*O*-malonyl)glucoside-7-*O*-glucoside / 75  
quercetin 3-*O*-(2"-*O*-caffeoyle)sophoroside / 93, 98, 100, 111, 112, 115  
quercetin 3-*O*-(2"-*O*-caffeoyle)sophoroside-7-*O*-diglucoside / 93  
quercetin 3-*O*-(2"-*O*-caffeoyle)sophoroside-7-*O*-glucoside / 93, 98, 100, 112, 115  
quercetin 3-*O*-(2""-*O*-caffeoyle)sophorotrioside-7-*O*-glucoside / 112  
quercetin 3-*O*-(2"-*O*-caffeoyle)triglucoside-7-*O*-glucoside / 112, 115  
quercetin 3-*O*-(2"-*O*-feruloyl)sophoroside / 112  
quercetin 3-*O*-(2"-*O*-feruloyl)sophoroside-7-*O*-diglucoside / 93  
quercetin 3-*O*-(2"-*O*-feruloyl)sophoroside-7-*O*-glucoside / 93, 100, 112, 115  
quercetin 3-*O*-(2""-*O*-feruloyl)sophorotrioside-7-*O*-glucoside / 112  
quercetin 3-*O*-(2"-*O*-feruloyl)triglucoside-7-*O*-glucoside / 112, 115  
quercetin 3-*O*-(2"-*O*-galloyl)glucoside / 140, 225  
quercetin 3-*O*-(2"-*O*-hydroxyferuloyl)sophoroside / 111  
quercetin 3-*O*-(2"-*O*-hydroxyferuloyl)sophoroside-7-*O*-glucoside / 112, 115  
quercetin 3-*O*-(2""-*O*-hydroxyferuloyl)sophorotrioside-7-*O*-glucoside / 112  
quercetin 3-*O*-(2"-*O*-hydroxyferuloyl)triglucoside-7-*O*-glucoside / 112, 115  
quercetin 3-*O*-(2"-*O*-sinapoyl)sophoroside / 112

- quercetin 3-O-(2"-O-sinapoyl)sophoroside-7-O-diglucoside / 93  
 quercetin 3-O-(2"-O-sinapoyl)sophoroside-7-O-glucoside / 93, 100, 112, 115  
 quercetin 3-O-(2'''-O-sinapoyl)sophorotrioside / 112  
 quercetin 3-O-(2'''-O-sinapoyl)sophorotrioside-7-O-glucoside / 112  
 quercetin 3-O-(2'''-O-sinapoyl)triglucoside-7-O-glucoside / 112, 115  
 quercetin 3-O-(3'''-O-galactosyl)rutinoside / 193, 195  
 quercetin 3-O-(3'''-O-glucosyl)rutinoside / 117, 193, 195  
 quercetin 3-O-(4"-O-acetyl)rutinoside (cerakocetin) / 172  
 quercetin 3-O-(4"-O-malonyl)glucuronide / 120, 121, 122  
 quercetin 3-O-(6"-O-acetyl)glucoside / 87, 168, 169, 171  
 quercetin 3-O-(6"-O-acetyl)glucoside-7-O-glucoside / 87  
 quercetin 3-O-(6"-O-caffeoyle)glucoside / 87  
 quercetin 3-O-(6"-O-malonyl)glucoside / 60, 75, 77, 83, 87, 117, 120, 121, 122, 181, 216, 226  
 quercetin 3-O-(6"-O-cis-p-coumaroyl)sophoroside / 60  
 quercetin 3-O-(6'''-O-cis-p-coumaroyl)sophorotrioside(pisumflavonoside I) / 61  
 quercetin 3-O-(6'''-O-feruloyl)sophoroside / 60  
 quercetin 3-O-(6'''-O-feruloyl)sophorotrioside / 61  
 quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucoside / 120, 121, 122  
 quercetin 3-O-(6"-O-malonyl)glucoside-7-O-glucuronide / 120, 121, 122  
 quercetin 3-O-(6"-O-malonyl)sophoroside (pisumin A) / 60  
 quercetin 3-O-(6"-O-malonyl)sophorotrioside (pisumin B) / 61  
 quercetin 3-O-(6"-O-malonyl-6'''-O-feruloyl)sophorotrioside (6'''-O-feruloylpisumin B) / 61  
 quercetin 3-O-(6"-O-malonyl-6'''-O-p-coumaroyl)sophoroside (6'''-O-p-coumaroylpisumin B) / 61  
 quercetin 3-O-(6"-O-malonyl-6'''-O-sinapoyl)sophorotrioside (6'''-O-sinapoylpisumin B) / 61  
 quercetin 3-O-(6"-O-p-coumaroyl)sophoroside / 60  
 quercetin 3-O-(6'''-O-p-coumaroyl)sophorotrioside / 61  
 quercetin 3-O-(6'''-O-sinapoyl)sophoroside / 60  
 quercetin 3-O-(6'''-O-sinapoyl)sophorotrioside / 61  
 quercetin 3-O-arabinofuranoside (avicularin) / 162, 163, 184, 185, 189  
 quercetin 3-O-arabinoside (gvajaverin) / 140, 162, 163, 171, 179, 181, 184, 185, 225, 226  
 quercetin 3-O-galactoside (hyperoside) / 36, 42, 68, 85, 140, 162, 163, 167, 169, 170, 171, 175, 176, 177, 178, 179, 181, 184, 185, 186, 187, 189, 193, 195, 200, 207, 209, 216, 220, 222, 225, 226  
 quercetin 3-O-galactoside-7-O-rhamnoside / 85  
 quercetin 3-O-gentiobioside / 216  
 quercetin 3-O-glucoside (isoquercitrin) / 36, 37, 42, 60, 62, 68, 70, 75, 77, 83, 85, 87, 95, 98, 100, 111, 117, 120, 121, 122, 128, 130, 140, 160, 161, 162, 163, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 181, 183, 184, 185, 186, 187, 188, 189, 193, 195, 200, 209, 216, 220, 222, 224, 225, 226  
 quercetin 3-O-glucoside-7-O-glucuronide / 120  
 quercetin 3-O-glucoside-7-O-rhamnoside / 105, 107  
 quercetin 3-O-glucosyl(1→2)galactoside (aronin) / 179  
 quercetin 3-O-glucosyl(1→2)rhamnoside-7-O-rhamnoside (elatanol B) / 84  
 quercetin 3-O-glucuronic acid methyl ester / 200, 202, 204, 207  
 quercetin 3-O-glucuronide (miquelianin) / 120, 121, 122, 161, 175, 177, 178, 187, 188, 189, 198, 200, 202, 204, 207, 209  
 quercetin 3-O-neohesperidoside / 169

quercetin 3-*O*-rhamnoside (quercitrin) / 36, 73, 75, 77, 79, 80, 81, 83, 162, 163, 171, 172, 184, 185, 187, 189, 224, 225, 226  
quercetin 3-*O*-rhamnoside-7-*O*-arabinoside / 105, 107  
quercetin 3-*O*-rhamnoside-7-*O*-glucoside / 77, 79, 80, 81, 83, 105, 107, 183, 225  
quercetin 3-*O*-rhamnosyl (1→6)-(2"-*O*-apiosyl)glucoside (solagrotin) / 132, 133, 134, 135  
quercetin 3-*O*-robinobioside / 62, 68, 154, 159, 160, 179, 181, 186, 216  
quercetin 3-*O*-rutinoside (rutin) / 36, 37, 62, 68, 70, 75, 80, 87, 117, 127, 132, 133, 134, 135, 152, 160, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 181, 183, 184, 186, 189, 193, 195, 216, 220, 222, 225, 226  
quercetin 3-*O*-rutinoside-3'-*O*-glucoside / 37  
quercetin 3-*O*-rutinoside-7-*O*-glucoside (rutin 7-*O*-glucoside, morkotin A) / 127, 132, 133, 134, 135, 157  
quercetin 3-*O*-rutinoside-7-*O*-rhamnoside (rutin 7-*O*-rhamnoside, morkotin B) / 157  
quercetin 3-*O*-sophoroside / 60, 93, 95, 102, 111, 114, 152  
quercetin 3-*O*-sophoroside-7-*O*-diglucoside / 93  
quercetin 3-*O*-sophoroside-7-*O*-glucoside / 93, 112, 115  
quercetin 3-*O*-sophorotrioside / 61  
quercetin 3-*O*-triglycoside-7-*O*-glucoside / 112, 115  
quercetin 3-*O*-vicianoside / 179, 216  
quercetin 3-*O*-xyloside (reynoutrin) / 140, 162, 163, 171, 172, 179, 184, 185, 189, 226  
quercetin 3-*O*-xylosyl(1→2)glucoside / 162, 163  
quercetin 3-*O*-xylosyl(1→6)galactoside / 216  
quercetin 3-*O*-xylosyl(1→6)glucoside / 216  
quercetin 3-*O*-(2"-*O*-galloyl)galactoside / 140

quercetin 4'-*O*-glucoside (spiraeoside) / 128, 130  
quercetin 7,4'-di-*O*-glucoside / 128, 130  
quercetin 7-*O*-glucosyl(1→2)rhamnoside / 107  
quercetin 7-*O*-rhamnoside / 105, 107  
quercetin 7-*O*-sophoroside / 111  
quercetin 3-methyl ether / 220, 222

## R

rhamnetin 3-*O*-galactoside / 162, 164  
rhamnetin 3-*O*-glucoside / 162, 164

## S

scutellarein 7-*O*-glucuronosyl(1→2)glucuronide (scutellarein 7-*O*-diglucuronide) / 69  
spinacitin 3-*O*-(2"-*O*-feruloylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside / 125  
spinacitin 3-*O*-(2"-*O*-feruloylglucosyl)(1→6)glucoside / 125  
spinacitin 3-*O*-(2"-*O*-*p*-coumaroylglucosyl)(1→6)-[apiosyl(1→2)]-glucoside / 125  
spinacitin 3-*O*-glucosyl(1→6)-[apiosyl(1→2)]-glucoside / 125  
spinacitin 3-*O*-gentiobioside / 125  
spinatoside 4'-*O*-glucuronide / 125  
syringetin 3-*O*-galactoside / 182  
syringetin 3-*O*-glucoside / 63, 182, 198, 201, 203, 205, 208, 209  
syringetin 3-*O*-robinobioside / 63  
syringetin 3-*O*-rutinoside / 63

**T**

- 5,3',4'-trihydroxy-3-methoxy-6:7-methylenedioxyflavone 4'-*O*-glucuronide (spinaasonin) / 126  
5,6,7,4'-tetrahydroxyflavanone 7-*O*-glucoside (naasalvinin C) / 218  
5,6,7,4'-tetramethoxyflavone (tetra-*O*-methylscutellarein) / 147, 151, 155  
5,7,3',4'-tetrahydroxy-6-methoxyflavanone / 218  
5,7,3',4'-tetrahydroxy-6-methoxyflavanone 7-*O*-glucoside (naasanone) / 218  
5,7,4'-trihydroxy-6-methoxyflavanone / 218  
5,7,4'-trihydroxy-6-methoxyflavanone 7-*O*-glucoside (naasalvinin A) / 218  
5,7,8,4'-tetramethoxyflavone (tetra-*O*-methylisoscutellarein) / 155  
theaflavin / 194  
theaflavin 3,3'-di-*O*-gallate / 192, 194  
theaflavin 3'-*O*-gallate / 192, 194  
theaflavin 3-*O*-gallate / 192, 194  
tricin / 40, 41, 42, 119  
tricin 7-*O*-glucoside / 39, 40, 41, 42, 119  
tricin 7-*O*-rutinoside / 40, 41, 42, 119

**V**

- vitexin 3-*O*-rhamnoside / 50, 70

**X**

- xanthone 2-*C*-glucoside (mangiferin) / 162, 164

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# 플라보노이드 Data Base 1.0

## I . 식품의 플라보노이드 함량

발 행 일 2016년 11월

발 행 인 농촌진흥청 국립농업과학원장 이진모

편 집 인 농촌진흥청 국립농업과학원 농식품자원부장 김행란

편집기획(편집) 농촌진흥청 국립농업과학원 농식품자원부 기능성식품과 김정봉, 장환희, 최정숙

발 행처 농촌진흥청 국립농업과학원 농식품자원부 기능성식품과  
(55365) 전북 완주군 이서면 농생명로 166  
Tel : 063-238-2000, Fax : 063-238-3811  
농식품종합정보시스템 <http://koreanfood.rda.go.kr>

인쇄처 (주)문영당 (063-251-2191)

I S B N 978-89-480-4284-9(세트)  
978-89-480-4286-3 94520

발간등록번호 11-1390802-001097-01

본 책자는 농촌진흥청 국립농업과학원 농식품자원부에서 수행한 연구 결과이므로  
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