

# Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods

## Introduction

The development of many chronic and degenerative diseases, such as cancer (1), heart disease (5), and neuronal degeneration such as Alzheimer's (4) and Parkinson's disease (9) has been theorized to be caused, in part, by oxidative stress. Oxidative stress has also been implicated in the process of aging (2). It is known that reactive oxygen species can damage biological molecules such as proteins, lipids, and DNA. While the human body has developed a number of systems to eliminate free radicals from the body, it is not 100% efficient (20).

Diets rich in fruits, nuts, and vegetables have long been considered to be an excellent source of antioxidants. A number of minerals and vitamins have a role as dietary antioxidants in addition to their other biological functions. These include vitamin C (ascorbic acid), vitamin E and its isomers (tocopherols and tocotrienols), and selenium. Data for these are included in the USDA National Nutrient Database for Standard Reference (SR) (18). USDA has also published a number of Special Interest Databases on various antioxidants: Carotenoids (14) (now merged with SR); isoflavones (15), flavonoids (16), and proanthocyanidins (17). However, there is no database of antioxidant activity for selected foods.

As part of the National Food and Nutrient Analysis Program (NFNAP) (12), USDA, in collaboration with the Produce for Better Health Foundation, undertook the analysis of 59 individual fruits, nuts, and vegetables. In addition to the traditional proximates, minerals, and vitamins analyses, which are included in SR, these foods were analyzed for a number of potentially bioactive compounds. These foods, along with a few foods collected for the food composition database for American Indians and Alaskan Natives, were also analyzed for their oxygen radical absorbance capacity (ORAC) by Wu et al. (19) at the Arkansas Children's Nutrition Center, ARS, USDA. These data as well as a limited amount of analytical data from the literature were compiled for the ORAC database.

In addition to the ORAC assay, other common measures of antioxidant capacity (AC) include ferric ion reducing antioxidant power (FRAP) and trolox equivalence antioxidant capacity (TEAC) assays. These assays are based on different underlying mechanisms using different radical or oxidant sources and therefore generate different values and cannot be compared directly. The ORAC assay is considered by some to be a preferable method because of its biological relevance to the *in vivo* antioxidant efficacy (3). In general, a food that has a high value for one measure of AC will also be high for another measure. However, because antioxidant compounds with different chemical structures interact with different radical sources differently, the relationship between any two AC methods will be quite low if considered across all foods. Thus, it is not possible to develop a mathematical relationship between 2 methods across a wide spectrum of foods. Like the content of any food component, AC values will differ due to a wide array of reasons, such as cultivar, growing conditions, harvesting, food processing and

preparation, sampling, and analytical procedures.

## Methods

The analytical method developed by Prior et al (13) was used as the reference method for evaluating analytical methods from other published sources. This method uses fluorescein as the fluorescent probe and assays hydrophilic as well as lipophilic antioxidants. Analytical data from literature based on methods that used B-phycoerythrin (B-PE) as the probe were not used in this compilation as B-PE may produce inconsistent results in some foods, is not photostable, and may involve nonspecific protein binding with polyphenols (11).

ORAC Values are reported for hydrophilic-ORAC (H-ORAC), lipophilic-ORAC (L-ORAC), total-ORAC, and total phenolics (TP). H-ORAC, L-ORAC and total-ORAC are reported in  $\mu\text{mol}$  of Trolox Equivalents per 100 grams ( $\mu\text{molTE}/100\text{ g}$ ), while TP is reported in mg gallic acid equivalents per 100 grams (mgGAE/100 g). When only an H-ORAC value was available for a particular food item low in fat, H-ORAC value was also utilized for the Total ORAC value. In some cases values for H-ORAC, L-ORAC and Total-ORAC may come from different sources, and the sum of the average values for H-ORAC and L-ORAC may not equal the value for Total-ORAC.

## Data Evaluation

The data were evaluated for quality using procedures developed by scientists at the NDL as part of the Nutrient Databank System (7). These procedures were based on criteria described earlier (6, 10) with some modifications. Procedures developed for the first release in 2003 of the flavonoid database were followed (8). The five categories of documentation which were evaluated included: sampling plan, sample handling, number of samples, analytical method, and analytical quality control. NDL modified the criteria for the sampling plan rating at the aggregation stage to accommodate data from international sources. For aggregated data which included data from countries other than the United States, the number of countries replaced the number of regions within a country. The information presented in each reviewed paper was evaluated for each category, which then received a rating ranging from 0 to 20 points. The ratings for each of the five categories are summed to yield a quality index (QI) with the maximum possible score of 100 points. A confidence code (CC) is derived from the QI and is an indicator of the relative quality of the data and the reliability of a given mean. The CC is assigned as indicated in Table 1:

Table 1.—Confidence Codes (CC) derived from Quality Index (QI)

QI Points	CC
75-100	A
74-50	B
49-25	C
<25	D

The data were aggregated where possible to match the food descriptions in the USDA

National Nutrient Database for Standard Reference (SR). Subsequently, the mean value (mg/100g), standard error of the mean (SEM), minimum (Min), and maximum (Max.) values were determined for each food and ORAC value. Mean values are weighted to account for the different number of samples among the various studies used. The weighted mean is, in turn, used to calculate the standard error based on the total number of samples in each aggregated food.

This table of ORAC values will provide the user with a listing of antioxidant capacity as measured by the oxygen radical absorbance capacity method for a number of food items. When used in tandem with the phytonutrient Special Interest Tables developed by NDL, the user can assess the various sources of antioxidants in the food supply.

Food	Parameter	Unit	Mean
Agave, cooked (Southwest)	H-ORAC	umol TE/100 g	2938
	L-ORAC	umol TE/100 g	136
	Total-ORAC	umol TE/100 g	2938
	TP	mg GAE/100 g	376
Agave, dried (Southwest)	H-ORAC	umol TE/100 g	7274
	L-ORAC	umol TE/100 g	250
	Total-ORAC	umol TE/100 g	7274
	TP	mg GAE/100 g	1359
Agave, raw (Southwest)	H-ORAC	umol TE/100 g	1247
	L-ORAC	umol TE/100 g	47
	Total-ORAC	umol TE/100 g	1247
	TP	mg GAE/100 g	87
Alcoholic beverage, wine, table, red	H-ORAC	umol TE/100 g	3873
	Total-ORAC	umol TE/100 g	3873
	TP	Mg GAE/100 g	184
Alcoholic Beverage, wine, table, red, Cabernet Sauvignon	H-ORAC	umol TE/100 g	5034
	Total-ORAC	umol TE/100 g	5034
	TP	mg GAE/100 g	203
Alcoholic beverage, wine, table, rose	H-ORAC	umol TE/100 g	1005
	Total-ORAC	umol TE/100 g	1005
	TP	Mg GAE/100 g	42
Alcoholic beverage, wine, table, white	H-ORAC	umol TE/100 g	392
	Total-ORAC	umol TE/100 g	392
	TP	Mg GAE/100 g	20
Alfalfa seeds, sprouted, raw	H-ORAC	umol TE/100 g	1510
	Total-ORAC	umol TE/100 g	1510
	TP	mg GAE/100 g	53
Apple juice, canned or bottled, unsweetened, without added ascorbic acid	H-ORAC	umol TE/100 g	408
	Total-ORAC	umol TE/100 g	408
Apples, dried to 40% moisture (purchased in Italy)	H-ORAC	umol TE/100 g	6681
	Total-ORAC	umol TE/100 g	6681
	TP	mg GAE/100 g	324
Apples, Fuji, raw, with skin	H-ORAC	umol TE/100 g	2568
	L-ORAC	umol TE/100 g	21
	Total-ORAC	umol TE/100 g	2589
	TP	mg GAE/100 g	210

Apples, Gala, raw, with skin	H-ORAC	umol TE/100 g	2793
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	2828
	TP	mg GAE/100 g	262
Apples, Golden Delicious, raw, with skin	H-ORAC	umol TE/100 g	2644
	L-ORAC	umol TE/100 g	26
	Total-ORAC	umol TE/100 g	2670
	TP	mg GAE/100 g	248
Apples, Golden Delicious, raw, without skin	H-ORAC	umol TE/100 g	2204
	L-ORAC	umol TE/100 g	5
	Total-ORAC	umol TE/100 g	2210
	TP	mg GAE/100 g	217
Apples, Granny Smith, raw, with skin	H-ORAC	umol TE/100 g	3859
	L-ORAC	umol TE/100 g	39
	Total-ORAC	umol TE/100 g	3898
	TP	mg GAE/100 g	341
Apples, raw, with skin	H-ORAC	umol TE/100 g	3056
	L-ORAC	umol TE/100 g	32
	Total-ORAC	umol TE/100 g	3082
	TP	mg GAE/100 g	262
Apples, raw, without skin	H-ORAC	umol TE/100 g	2567
	L-ORAC	umol TE/100 g	6
	Total-ORAC	umol TE/100 g	2573
	TP	mg GAE/100 g	225
Apples, Red Delicious, raw, without skin	H-ORAC	umol TE/100 g	2929
	L-ORAC	umol TE/100 g	7
	Total-ORAC	umol TE/100 g	2936
	TP	mg GAE/100 g	232
Apples, Red Delicious, raw. with skin	H-ORAC	umol TE/100 g	4234
	L-ORAC	umol TE/100 g	41
	Total-ORAC	umol TE/100 g	4275
	TP	mg GAE/100 g	347
Applesauce, canned, unsweetened, without added ascorbic acid	H-ORAC	umol TE/100 g	1965
	Total-ORAC	umol TE/100 g	1965
	TP	mg GAE/100 g	217
Apricots, dried to 40% moisture (purchased in Italy)	H-ORAC	umol TE/100 g	3234
	Total-ORAC	umol TE/100 g	3234
	TP	mg GAE/100 g	248
Apricots, raw	H-ORAC	umol TE/100 g	1108
	L-ORAC	umol TE/100 g	32
	Total-ORAC	umol TE/100 g	1115
	TP	mg GAE/100 g	79
Artichokes, (globe or french), raw	H-ORAC	umol TE/100 g	6552
	Total-ORAC	umol TE/100 g	6552
	TP	mg GAE/100 g	373
Artichokes, Ocean Mist, boiled	H-ORAC	umol TE/100 g	9221
	L-ORAC	umol TE/100 g	195
	Total-ORAC	umol TE/100 g	9416
	TP	mg GAE/100 g	703
Artichokes, Ocean Mist, Microwaved	H-ORAC	umol TE/100 g	9332
	L-ORAC	umol TE/100 g	70

	Total-ORAC	umol TE/100 g	9402
	TP	mg GAE/100 g	881
Asparagus, cooked, boiled, drained	H-ORAC	umol TE/100 g	1644
	Total-ORAC	umol TE/100 g	1644
	TP	mg GAE/100 g	159
Asparagus, raw	H-ORAC	umol TE/100 g	2150
	L-ORAC	umol TE/100 g	102
	Total-ORAC	umol TE/100 g	2150
	TP	mg GAE/100 g	106
Avocados, Hass, raw	H-ORAC	umol TE/100 g	1381
	L-ORAC	umol TE/100 g	552
	Total-ORAC	umol TE/100 g	1933
	TP	mg GAE/100 g	187
Babyfood, fruit, apple and blueberry, junior	H-ORAC	umol TE/100 g	4822
	Total-ORAC	umol TE/100 g	4822
	TP	mg GAE/100 g	563
Babyfood, fruit, applesauce, strained	H-ORAC	umol TE/100 g	4123
	Total-ORAC	umol TE/100 g	4123
	TP	mg GAE/100 g	612
Babyfood, fruit, bananas	H-ORAC	umol TE/100 g	2658
	Total-ORAC	umol TE/100 g	2658
	TP	mg GAE/100 g	590
Babyfood, fruit, peaches	H-ORAC	umol TE/100 g	6257
	Total-ORAC	umol TE/100 g	6257
	TP	mg GAE/100 g	916
Babyfood, fruit, peaches, junior	H-ORAC	umol TE/100 g	2551
	Total-ORAC	umol TE/100 g	2551
	TP	mg GAE/100 g	673
Babyfood, juice, pear	H-ORAC	umol TE/100 g	414
	Total-ORAC	umol TE/100 g	414
Baking chocolate, unsweetened, squares	H-ORAC	umol TE/100 g	51335
	L-ORAC	umol TE/100 g	859
	Total-ORAC	umol TE/100 g	49926
	TP	mg GAE/100 g	5146
Bananas, raw	H-ORAC	umol TE/100 g	813
	L-ORAC	umol TE/100 g	66
	Total-ORAC	umol TE/100 g	879
	TP	mg GAE/100 g	230
Basil, fresh	H-ORAC	umol TE/100 g	4805
	Total-ORAC	umol TE/100 g	4805
	TP	mg GAE/100 g	264
Beans, black turtle soup, mature seeds, raw	H-ORAC	umol TE/100 g	6416
	Total-ORAC	umol TE/100 g	6416
	TP	mg GAE/100 g	469
Beans, black, mature seeds, raw	H-ORAC	umol TE/100 g	7593
	L-ORAC	umol TE/100 g	447
	Total-ORAC	umol TE/100 g	8040
	TP	mg GAE/100 g	880
Beans, kidney, red, mature seeds, raw	H-ORAC	umol TE/100 g	8410
	L-ORAC	umol TE/100 g	196
	Total-ORAC	umol TE/100 g	8459

	TP	mg GAE/100 g	637
Beans, lima, immature seeds, canned, regular pack, solids and liquids	H-ORAC	umol TE/100 g	215
	L-ORAC	umol TE/100 g	27
	Total-ORAC	umol TE/100 g	243
	TP	mg GAE/100 g	96
Beans, navy, mature seeds, raw	H-ORAC	umol TE/100 g	1406
	L-ORAC	umol TE/100 g	454
	Total-ORAC	umol TE/100 g	1520
	TP	mg GAE/100 g	94
Beans, pink, mature seeds, raw	H-ORAC	umol TE/100 g	8320
	Total-ORAC	umol TE/100 g	8320
	TP	mg GAE/100 g	345
Beans, pinto, mature seeds, cooked, boiled, without salt	H-ORAC	umol TE/100 g	846
	L-ORAC	umol TE/100 g	57
	Total-ORAC	umol TE/100 g	904
	TP	mg GAE/100 g	128
Beans, pinto, mature seeds, raw	H-ORAC	umol TE/100 g	7610
	L-ORAC	umol TE/100 g	423
	Total-ORAC	umol TE/100 g	7779
	TP	mg GAE/100 g	618
Beans, snap, green variety, canned, regular pack, solids and liquids	H-ORAC	umol TE/100 g	206
	L-ORAC	umol TE/100 g	84
	Total-ORAC	umol TE/100 g	290
	TP	mg GAE/100 g	61
Beans, snap, green, raw	H-ORAC	umol TE/100 g	758
	L-ORAC	umol TE/100 g	55
	Total-ORAC	umol TE/100 g	759
	TP	mg GAE/100 g	92
Beet greens, raw	H-ORAC	umol TE/100 g	1946
	Total-ORAC	umol TE/100 g	1946
	TP	mg GAE/100 g	55
Beets, raw	H-ORAC	umol TE/100 g	1767
	L-ORAC	umol TE/100 g	9
	Total-ORAC	umol TE/100 g	1767
	TP	mg GAE/100 g	188
Blackberries, raw	H-ORAC	umol TE/100 g	5245
	L-ORAC	umol TE/100 g	103
	Total-ORAC	umol TE/100 g	5347
	TP	mg GAE/100 g	660
Blueberries, raw	H-ORAC	umol TE/100 g	6520
	L-ORAC	umol TE/100 g	36
	Total-ORAC	umol TE/100 g	6552
	TP	mg GAE/100 g	531
Bread, butternut whole grain	H-ORAC	umol TE/100 g	1986
	L-ORAC	umol TE/100 g	118
	Total-ORAC	umol TE/100 g	2104
	TP	mg GAE/100 g	246
Bread, mixed-grain (includes whole-grain, 7-grain)	H-ORAC	umol TE/100 g	1298
	L-ORAC	umol TE/100 g	123
	Total-ORAC	umol TE/100 g	1421
	TP	mg GAE/100 g	171

Bread, Oatnut	H-ORAC	umol TE/100 g	1224
	L-ORAC	umol TE/100 g	94
	Total-ORAC	umol TE/100 g	1318
	TP	mg GAE/100 g	183
Bread, pumpernickel	H-ORAC	umol TE/100 g	1835
	L-ORAC	umol TE/100 g	128
	Total-ORAC	umol TE/100 g	1963
	TP	mg GAE/100 g	271
Broccoli raab, cooked	H-ORAC	umol TE/100 g	1526
	L-ORAC	umol TE/100 g	65
	Total-ORAC	umol TE/100 g	1552
	TP	mg GAE/100 g	291
Broccoli raab, raw	H-ORAC	umol TE/100 g	2809
	L-ORAC	umol TE/100 g	274
	Total-ORAC	umol TE/100 g	3083
	TP	mg GAE/100 g	366
Broccoli, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	2377
	L-ORAC	umol TE/100 g	33
	Total-ORAC	umol TE/100 g	2386
	TP	mg GAE/100 g	225
Broccoli, frozen, spears, unprepared	H-ORAC	umol TE/100 g	496
	Total-ORAC	umol TE/100 g	496
	TP	mg GAE/100 g	68
Broccoli, raw	H-ORAC	umol TE/100 g	1352
	L-ORAC	umol TE/100 g	172
	Total-ORAC	umol TE/100 g	1362
	TP	mg GAE/100 g	337
Cabbage, black, cooked	H-ORAC	umol TE/100 g	1773
	Total-ORAC	umol TE/100 g	1773
	TP	mg GAE/100 g	123
Cabbage, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	856
	Total-ORAC	umol TE/100 g	856
	TP	mg GAE/100 g	59
Cabbage, raw	H-ORAC	umol TE/100 g	508
	L-ORAC	umol TE/100 g	21
	Total-ORAC	umol TE/100 g	508
	TP	mg GAE/100 g	202
Cabbage, red, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	3145
	Total-ORAC	umol TE/100 g	3145
	TP	mg GAE/100 g	321
Cabbage, red, raw	H-ORAC	umol TE/100 g	2252
	L-ORAC	umol TE/100 g	20
	Total-ORAC	umol TE/100 g	2252
	TP	mg GAE/100 g	254
Cabbage, savoy, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	2050
	Total-ORAC	umol TE/100 g	2050
	TP	mg GAE/100 g	119
Candies, chocolate, dark	H-ORAC	umol TE/100 g	21800
	L-ORAC	umol TE/100 g	880
	Total-ORAC	umol TE/100 g	20823
	TP	mg GAE/100 g	1297

Candies, milk chocolate	H-ORAC	umol TE/100 g	7203
	L-ORAC	umol TE/100 g	881
	Total-ORAC	umol TE/100 g	7528
	TP	mg GAE/100 g	507
Candies, semisweet chocolate	Total-ORAC	umol TE/100 g	18053
	TP	mg GAE/100 g	1238
Carrots, baby, raw	H-ORAC	umol TE/100 g	355
	L-ORAC	umol TE/100 g	81
	Total-ORAC	umol TE/100 g	436
	TP	mg GAE/100 g	45
Carrots, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	310
	L-ORAC	umol TE/100 g	18
	Total-ORAC	umol TE/100 g	317
	TP	mg GAE/100 g	88
Carrots, raw	H-ORAC	umol TE/100 g	663
	L-ORAC	umol TE/100 g	48
	Total-ORAC	umol TE/100 g	666
	TP	mg GAE/100 g	35
Catsup	H-ORAC	umol TE/100 g	535
	L-ORAC	umol TE/100 g	43
	Total-ORAC	umol TE/100 g	578
	TP	mg GAE/100 g	249
Cauliflower, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	620
	Total-ORAC	umol TE/100 g	620
	TP	mg GAE/100 g	61
Cauliflower, raw	H-ORAC	umol TE/100 g	828
	L-ORAC	umol TE/100 g	37
	Total-ORAC	umol TE/100 g	829
	TP	mg GAE/100 g	111
Celery, raw	H-ORAC	umol TE/100 g	470
	L-ORAC	umol TE/100 g	40
	Total-ORAC	umol TE/100 g	497
	TP	mg GAE/100 g	42
Cereals ready-to-eat, granola, low-fat, with raisins	H-ORAC	umol TE/100 g	2168
	L-ORAC	umol TE/100 g	126
	Total-ORAC	umol TE/100 g	2294
	TP	mg GAE/100 g	367
Cereals ready-to-eat, oat bran	H-ORAC	umol TE/100 g	1971
	L-ORAC	umol TE/100 g	212
	Total-ORAC	umol TE/100 g	2183
	TP	mg GAE/100 g	167
Cereals ready-to-eat, oatmeal, toasted squares	H-ORAC	umol TE/100 g	2013
	L-ORAC	umol TE/100 g	130
	Total-ORAC	umol TE/100 g	2143
	TP	mg GAE/100 g	271
Cereals ready-to-eat, QUAKER, QUAKER OAT LIFE, plain	H-ORAC	umol TE/100 g	1422
	L-ORAC	umol TE/100 g	95
	Total-ORAC	umol TE/100 g	1517
	TP	mg GAE/100 g	117
Cereals ready-to-eat, toasted oatmeal	H-ORAC	umol TE/100 g	2086
	L-ORAC	umol TE/100 g	89



	Total-ORAC	umol TE/100 g	2175
	TP	mg GAE/100 g	183
Cereals ready-to-eat, wheat, shredded, plain, sugar and salt free	H-ORAC	umol TE/100 g	1222
	L-ORAC	umol TE/100 g	81
	Total-ORAC	umol TE/100 g	1303
	TP	mg GAE/100 g	94
Cereals, oats, instant, fortified, plain, dry	H-ORAC	umol TE/100 g	2026
	L-ORAC	umol TE/100 g	282
	Total-ORAC	umol TE/100 g	2308
	TP	mg GAE/100 g	183
Cereals, oats, old fashioned, uncooked	H-ORAC	umol TE/100 g	1402
	L-ORAC	umol TE/100 g	306
	Total-ORAC	umol TE/100 g	1708
	TP	mg GAE/100 g	163
Cereals, oats, quick, uncooked	H-ORAC	umol TE/100 g	1763
	L-ORAC	umol TE/100 g	406
	Total-ORAC	umol TE/100 g	2169
	TP	mg GAE/100 g	183
Cereals, ready-to-eat, corn flakes	H-ORAC	umol TE/100 g	2302
	L-ORAC	umol TE/100 g	57
	Total-ORAC	umol TE/100 g	2359
	TP	mg GAE/100 g	842
Cherries, sweet, raw	H-ORAC	umol TE/100 g	3348
	L-ORAC	umol TE/100 g	17
	Total-ORAC	umol TE/100 g	3365
	TP	mg GAE/100 g	339
Chickpeas (garbanzo beans, bengal gram), mature seeds, raw	H-ORAC	umol TE/100 g	847
	Total-ORAC	umol TE/100 g	847
	TP	mg GAE/100 g	90
Chilchen (Red Berry Beverage) (Navajo)	H-ORAC	umol TE/100 g	740
	Total-ORAC	umol TE/100 g	740
	TP	mg GAE/100 g	20
Chives, raw	H-ORAC	umol TE/100 g	2094
	Total-ORAC	umol TE/100 g	2094
	TP	mg GAE/100 g	85
Chocolale, dutched powder	H-ORAC	umol TE/100 g	39900
	L-ORAC	umol TE/100 g	300
	Total-ORAC	umol TE/100 g	40200
Chocolate syrup	Total-ORAC	umol TE/100 g	6330
	TP	mg GAE/100 g	417
Chokeberry, raw	H-ORAC	umol TE/100 g	15820
	L-ORAC	umol TE/100 g	242
	Total-ORAC	umol TE/100 g	16062
	TP	mg GAE/100 g	2010
Cocoa mix, powder	H-ORAC	umol TE/100 g	485
	Total-ORAC	umol TE/100 g	485
Cocoa, dry powder, unsweetened	H-ORAC	umol TE/100 g	82000
	L-ORAC	umol TE/100 g	600
	Total-ORAC	umol TE/100 g	80933
	TP	mg GAE/100 g	5240
Coriander (cilantro) leaves, raw	H-ORAC	umol TE/100 g	5141

	Total-ORAC	umol TE/100 g	5141
	TP	mg GAE/100 g	151
Corn, sweet, yellow, canned, brine pack, regular pack, solids and liquids	H-ORAC	umol TE/100 g	361
	L-ORAC	umol TE/100 g	52
	Total-ORAC	umol TE/100 g	413
	TP	mg GAE/100 g	169
Corn, sweet, yellow, frozen, kernels cut off cob, unprepared	H-ORAC	umol TE/100 g	447
	L-ORAC	umol TE/100 g	75
	Total-ORAC	umol TE/100 g	522
	TP	mg GAE/100 g	174
Corn, sweet, yellow, raw	H-ORAC	umol TE/100 g	593
	L-ORAC	umol TE/100 g	135
	Total-ORAC	umol TE/100 g	728
	TP	mg GAE/100 g	211
Cowpeas, common (blackeyes, crowder, southern), mature seeds, raw	H-ORAC	umol TE/100 g	3707
	L-ORAC	umol TE/100 g	636
	Total-ORAC	umol TE/100 g	4343
	TP	mg GAE/100 g	647
Cranberries, raw	H-ORAC	umol TE/100 g	9382
	L-ORAC	umol TE/100 g	202
	Total-ORAC	umol TE/100 g	9584
	TP	mg GAE/100 g	718
Cucumber, peeled, raw	H-ORAC	umol TE/100 g	126
	L-ORAC	umol TE/100 g	14
	Total-ORAC	umol TE/100 g	126
	TP	mg GAE/100 g	22
Cucumber, with peel, raw	H-ORAC	umol TE/100 g	214
	L-ORAC	umol TE/100 g	28
	Total-ORAC	umol TE/100 g	214
	TP	mg GAE/100 g	29
Currants, european black, raw	H-ORAC	umol TE/100 g	10060
	L-ORAC	umol TE/100 g	84
	Total-ORAC	umol TE/100 g	7960
	TP	mg GAE/100 g	1330
Currants, red, raw	H-ORAC	umol TE/100 g	3260
	L-ORAC	umol TE/100 g	127
	Total-ORAC	umol TE/100 g	3387
	TP	mg GAE/100 g	540
Dates, deglet noor	H-ORAC	umol TE/100 g	3863
	L-ORAC	umol TE/100 g	32
	Total-ORAC	umol TE/100 g	3895
	TP	mg GAE/100 g	661
Dates, medjool	H-ORAC	umol TE/100 g	2360
	L-ORAC	umol TE/100 g	27
	Total-ORAC	umol TE/100 g	2387
	TP	mg GAE/100 g	572
Dill weed, fresh	H-ORAC	umol TE/100 g	4392
	Total-ORAC	umol TE/100 g	4392
	TP	mg GAE/100 g	243
Eggplant, cooked, boiled, drained, without salt	H-ORAC	umol TE/100 g	245
	Total-ORAC	umol TE/100 g	245

	TP	mg GAE/100 g	21
Eggplant, raw	H-ORAC	umol TE/100 g	932
	L-ORAC	umol TE/100 g	24
	Total-ORAC	umol TE/100 g	933
	TP	mg GAE/100 g	63
Elderberries, raw	H-ORAC	umol TE/100 g	14500
	L-ORAC	umol TE/100 g	197
	Total-ORAC	umol TE/100 g	14697
	TP	mg GAE/100 g	1950
Fennel, bulb, raw	H-ORAC	umol TE/100 g	307
	Total-ORAC	umol TE/100 g	307
	TP	mg GAE/100 g	26
Figs, raw	H-ORAC	umol TE/100 g	3200
	L-ORAC	umol TE/100 g	183
	Total-ORAC	umol TE/100 g	3383
	TP	mg GAE/100 g	960
Garlic, raw	H-ORAC	umol TE/100 g	5346
	Total-ORAC	umol TE/100 g	5346
	TP	mg GAE/100 g	92
Ginger root, raw	H-ORAC	umol TE/100 g	14840
	Total-ORAC	umol TE/100 g	14840
	TP	mg GAE/100 g	227
Gooseberries, raw	H-ORAC	umol TE/100 g	3583
	L-ORAC	umol TE/100 g	23
	Total-ORAC	umol TE/100 g	3277
	TP	mg GAE/100 g	518
Grape juice, white	H-ORAC	umol TE/100 g	793
	Total-ORAC	umol TE/100 g	793
Grapefruit juice, white, raw	H-ORAC	umol TE/100 g	1238
	Total-ORAC	umol TE/100 g	1238
	TP	mg GAE/100 g	336
Grapefruit, raw, pink and red, all areas	H-ORAC	umol TE/100 g	1512
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	1548
	TP	mg GAE/100 g	214
Grapes, red, raw	H-ORAC	umol TE/100 g	1260
	Total-ORAC	umol TE/100 g	1260
	TP	mg GAE/100 g	177
Grapes, white or green, raw	H-ORAC	umol TE/100 g	1118
	Total-ORAC	umol TE/100 g	1118
	TP	mg GAE/100 g	145
Guava, red-fleshed	Total-ORAC	umol TE/100 g	1990
	TP	mg GAE/100 g	247
Guava, white-fleshed	Total-ORAC	umol TE/100 g	2550
	TP	mg GAE/100 g	345
Juice, Blueberry	H-ORAC	umol TE/100 g	2906
	Total-ORAC	umol TE/100 g	2906
Juice, Concord grape	H-ORAC	umol TE/100 g	2377
	Total-ORAC	umol TE/100 g	2377
Juice, cranberry, 100% - cranberry blend, red	H-ORAC	umol TE/100 g	865
	Total-ORAC	umol TE/100 g	865

Juice, cranberry, white	H-ORAC	umol TE/100 g	232
	Total-ORAC	umol TE/100 g	232
Juice, Cranberry/Concord grape	H-ORAC	umol TE/100 g	1480
	Total-ORAC	umol TE/100 g	1480
Juice, Pomegranate, 100%	H-ORAC	umol TE/100 g	2341
	Total-ORAC	umol TE/100 g	2341
Juice, red grape	H-ORAC	umol TE/100 g	1788
	Total-ORAC	umol TE/100 g	1788
Juice, strawberry	H-ORAC	umol TE/100 g	1002
	Total-ORAC	umol TE/100 g	1002
Kiwi fruit, (chinese gooseberries), fresh, raw	H-ORAC	umol TE/100 g	858
	L-ORAC	umol TE/100 g	24
	Total-ORAC	umol TE/100 g	882
	TP	mg GAE/100 g	267
Kiwi, gold, raw	H-ORAC	umol TE/100 g	1159
	L-ORAC	umol TE/100 g	51
	Total-ORAC	umol TE/100 g	1210
	TP	mg GAE/100 g	366
Leeks, (bulb and lower leaf- portion), raw	H-ORAC	umol TE/100 g	490
	Total-ORAC	umol TE/100 g	490
	TP	mg GAE/100 g	47
Lemon balm, leaves, raw	H-ORAC	umol TE/100 g	5997
	Total-ORAC	umol TE/100 g	5997
	TP	mg GAE/100 g	490
Lemon juice, raw	H-ORAC	umol TE/100 g	1225
	Total-ORAC	umol TE/100 g	1225
	TP	mg GAE/100 g	175
Lentils, raw	H-ORAC	umol TE/100 g	7282
	Total-ORAC	umol TE/100 g	7282
	TP	mg GAE/100 g	628
Lettuce, butterhead (includes boston and bibb types), raw	H-ORAC	umol TE/100 g	1321
	L-ORAC	umol TE/100 g	103
	Total-ORAC	umol TE/100 g	1423
	TP	mg GAE/100 g	100
Lettuce, cos or romaine, raw	H-ORAC	umol TE/100 g	855
	L-ORAC	umol TE/100 g	162
	Total-ORAC	umol TE/100 g	963
	TP	mg GAE/100 g	73
Lettuce, green leaf, raw	H-ORAC	umol TE/100 g	1391
	L-ORAC	umol TE/100 g	141
	Total-ORAC	umol TE/100 g	1447
	TP	mg GAE/100 g	90
Lettuce, iceberg (includes crisphead types), raw	H-ORAC	umol TE/100 g	406
	L-ORAC	umol TE/100 g	33
	Total-ORAC	umol TE/100 g	438
	TP	mg GAE/100 g	50
Lettuce, red leaf, raw	H-ORAC	umol TE/100 g	2287
	L-ORAC	umol TE/100 g	138
	Total-ORAC	umol TE/100 g	2380
	TP	mg GAE/100 g	111
Lime juice, raw	H-ORAC	umol TE/100 g	823

	Total-ORAC	umol TE/100 g	823
	TP	mg GAE/100 g	117
Limes, raw	H-ORAC	umol TE/100 g	82
	Total-ORAC	umol TE/100 g	82
	TP	mg GAE/100 g	12
Mangos, raw	H-ORAC	umol TE/100 g	988
	L-ORAC	umol TE/100 g	14
	Total-ORAC	umol TE/100 g	1002
	TP	mg GAE/100 g	266
Marjoram, fresh	H-ORAC	umol TE/100 g	27297
	Total-ORAC	umol TE/100 g	27297
	TP	mg GAE/100 g	964
Melons, cantaloupe, raw	H-ORAC	umol TE/100 g	302
	L-ORAC	umol TE/100 g	13
	Total-ORAC	umol TE/100 g	315
	TP	mg GAE/100 g	125
Melons, honeydew, raw	H-ORAC	umol TE/100 g	230
	L-ORAC	umol TE/100 g	11
	Total-ORAC	umol TE/100 g	241
	TP	mg GAE/100 g	72
Milk, chocolate, fluid, commercial, reduced fat	H-ORAC	umol TE/100 g	1263
	Total-ORAC	umol TE/100 g	1263
	TP	mg GAE/100 g	58
Mush, blue corn with ash (Navajo)	H-ORAC	umol TE/100 g	684
	Total-ORAC	umol TE/100 g	684
	TP	mg GAE/100 g	77
Nectarines, raw	H-ORAC	umol TE/100 g	720
	L-ORAC	umol TE/100 g	29
	Total-ORAC	umol TE/100 g	750
	TP	mg GAE/100 g	107
Nuts, almonds	H-ORAC	umol TE/100 g	4282
	L-ORAC	umol TE/100 g	172
	Total-ORAC	umol TE/100 g	4454
	TP	mg GAE/100 g	418
Nuts, brazilnuts, dried, unblanched	H-ORAC	umol TE/100 g	862
	L-ORAC	umol TE/100 g	557
	Total-ORAC	umol TE/100 g	1419
	TP	mg GAE/100 g	310
Nuts, cashew nuts, raw	H-ORAC	umol TE/100 g	1505
	L-ORAC	umol TE/100 g	443
	Total-ORAC	umol TE/100 g	1948
	TP	mg GAE/100 g	269
Nuts, hazelnuts or filberts	H-ORAC	umol TE/100 g	9275
	L-ORAC	umol TE/100 g	370
	Total-ORAC	umol TE/100 g	9645
	TP	mg GAE/100 g	835
Nuts, macadamia nuts, dry roasted, without salt added	H-ORAC	umol TE/100 g	1443
	L-ORAC	umol TE/100 g	252
	Total-ORAC	umol TE/100 g	1695
	TP	mg GAE/100 g	156
Nuts, pecans	H-ORAC	umol TE/100 g	17524

	L-ORAC	umol TE/100 g	416
	Total-ORAC	umol TE/100 g	17940
	TP	mg GAE/100 g	2016
Nuts, pine nuts, dried	H-ORAC	umol TE/100 g	443
	L-ORAC	umol TE/100 g	277
	Total-ORAC	umol TE/100 g	616
	TP	mg GAE/100 g	68
Nuts, pistachio nuts, raw	H-ORAC	umol TE/100 g	7557
	L-ORAC	umol TE/100 g	425
	Total-ORAC	umol TE/100 g	7983
	TP	mg GAE/100 g	1657
Nuts, walnuts, english	H-ORAC	umol TE/100 g	13057
	L-ORAC	umol TE/100 g	484
	Total-ORAC	umol TE/100 g	13541
	TP	mg GAE/100 g	1556
Oil, peanut, salad or cooking	H-ORAC	umol TE/100 g	106
	Total-ORAC	umol TE/100 g	106
	TP	mg GAE/100 g	0
Olive oil, extra-virgin	H-ORAC	umol TE/100 g	1150
	Total-ORAC	umol TE/100 g	1150
	TP	mg GAE/100 g	19
Olive oil, extra-virgin, w/basil, home prepared	H-ORAC	umol TE/100 g	684
	Total-ORAC	umol TE/100 g	684
	TP	mg GAE/100 g	8
Olive oil, extra-virgin, w/garlic and red hot peppers, home prepared	H-ORAC	umol TE/100 g	219
	Total-ORAC	umol TE/100 g	219
	TP	mg GAE/100 g	9
Olive oil, extra-virgin, w/garlic, home prepared	H-ORAC	umol TE/100 g	557
	Total-ORAC	umol TE/100 g	557
	TP	mg GAE/100 g	10
Olive oil, extra-virgin, w/parsley, home prepared	H-ORAC	umol TE/100 g	766
	Total-ORAC	umol TE/100 g	766
	TP	mg GAE/100 g	9
Onions, raw	H-ORAC	umol TE/100 g	1021
	L-ORAC	umol TE/100 g	12
	Total-ORAC	umol TE/100 g	1034
	TP	mg GAE/100 g	23
Onions, red, raw	H-ORAC	umol TE/100 g	1521
	Total-ORAC	umol TE/100 g	1521
	TP	mg GAE/100 g	48
Onions, sweet, raw	H-ORAC	umol TE/100 g	594
	L-ORAC	umol TE/100 g	21
	Total-ORAC	umol TE/100 g	614
	TP	mg GAE/100 g	74
Onions, white, raw	H-ORAC	umol TE/100 g	863
	Total-ORAC	umol TE/100 g	863
	TP	mg GAE/100 g	27
Onions, yellow, sauteed	H-ORAC	umol TE/100 g	1220
	Total-ORAC	umol TE/100 g	1220
	TP	mg GAE/100 g	150
Orange juice, raw	H-ORAC	umol TE/100 g	726

	Total-ORAC	umol TE/100 g	726
Oranges, raw, navels	H-ORAC	umol TE/100 g	1785
	L-ORAC	umol TE/100 g	34
	Total-ORAC	umol TE/100 g	1819
	TP	mg GAE/100 g	337
Oregano, fresh	H-ORAC	umol TE/100 g	13970
	Total-ORAC	umol TE/100 g	13970
	TP	mg GAE/100 g	491
Parsley, raw	H-ORAC	umol TE/100 g	1301
	Total-ORAC	umol TE/100 g	1301
	TP	mg GAE/100 g	77
Peaches, canned, heavy syrup, drained	H-ORAC	umol TE/100 g	436
	Total-ORAC	umol TE/100 g	436
	TP	mg GAE/100 g	73
Peaches, dried to 40% moisture (purchased in Italy)	H-ORAC	umol TE/100 g	4222
	Total-ORAC	umol TE/100 g	4222
	TP	mg GAE/100 g	283
Peaches, raw	H-ORAC	umol TE/100 g	1781
	L-ORAC	umol TE/100 g	50
	Total-ORAC	umol TE/100 g	1814
	TP	mg GAE/100 g	148
Peanut butter, smooth style, with salt	H-ORAC	umol TE/100 g	3127
	L-ORAC	umol TE/100 g	305
	Total-ORAC	umol TE/100 g	3432
	TP	mg GAE/100 g	536
Peanuts, all types, raw	H-ORAC	umol TE/100 g	2893
	L-ORAC	umol TE/100 g	273
	Total-ORAC	umol TE/100 g	3166
	TP	mg GAE/100 g	396
Pear juice, all varieties	H-ORAC	umol TE/100 g	704
	Total-ORAC	umol TE/100 g	704
Pears, dried to 40% moisture (purchased in Italy)	H-ORAC	umol TE/100 g	9496
	Total-ORAC	umol TE/100 g	9496
	TP	mg GAE/100 g	679
Pears, green cultivars, with peel, raw	H-ORAC	umol TE/100 g	1856
	L-ORAC	umol TE/100 g	56
	Total-ORAC	umol TE/100 g	1911
	TP	mg GAE/100 g	220
Pears, raw	H-ORAC	umol TE/100 g	2941
	Total-ORAC	umol TE/100 g	2941
	TP	mg GAE/100 g	168
Pears, red anjou, raw	H-ORAC	umol TE/100 g	1711
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	1746
	TP	mg GAE/100 g	214
Peas, green, frozen, unprepared	H-ORAC	umol TE/100 g	505
	L-ORAC	umol TE/100 g	95
	Total-ORAC	umol TE/100 g	600
	TP	mg GAE/100 g	187
Peas, split, mature seeds, raw	H-ORAC	umol TE/100 g	524
	Total-ORAC	umol TE/100 g	524

	TP	mg GAE/100 g	74
Peas, yellow, mature seeds, raw	H-ORAC	umol TE/100 g	741
	Total-ORAC	umol TE/100 g	741
	TP	mg GAE/100 g	83
Peppermint, fresh	H-ORAC	umol TE/100 g	13978
	Total-ORAC	umol TE/100 g	13978
	TP	mg GAE/100 g	690
Peppers, sweet, green, raw	H-ORAC	umol TE/100 g	922
	L-ORAC	umol TE/100 g	14
	Total-ORAC	umol TE/100 g	923
	TP	mg GAE/100 g	160
Peppers, sweet, green, sauteed	H-ORAC	umol TE/100 g	615
	Total-ORAC	umol TE/100 g	615
	TP	mg GAE/100 g	437
Peppers, sweet, orange, raw	H-ORAC	umol TE/100 g	908
	L-ORAC	umol TE/100 g	76
	Total-ORAC	umol TE/100 g	984
	TP	mg GAE/100 g	543
Peppers, sweet, red, raw	H-ORAC	umol TE/100 g	788
	L-ORAC	umol TE/100 g	24
	Total-ORAC	umol TE/100 g	791
	TP	mg GAE/100 g	255
Peppers, sweet, red, sauteed	H-ORAC	umol TE/100 g	847
	Total-ORAC	umol TE/100 g	847
	TP	mg GAE/100 g	564
Peppers, sweet, yellow, grilled	H-ORAC	umol TE/100 g	694
	Total-ORAC	umol TE/100 g	694
	TP	mg GAE/100 g	164
Peppers, sweet, yellow, raw	H-ORAC	umol TE/100 g	951
	L-ORAC	umol TE/100 g	69
	Total-ORAC	umol TE/100 g	965
	TP	mg GAE/100 g	216
Pineapple juice, canned, unsweetened, without added ascorbic acid	H-ORAC	umol TE/100 g	568
	Total-ORAC	umol TE/100 g	568
Pineapple, raw, all varieties	H-ORAC	umol TE/100 g	373
	L-ORAC	umol TE/100 g	12
	Total-ORAC	umol TE/100 g	385
	TP	mg GAE/100 g	81
Pineapple, raw, extra sweet variety	H-ORAC	umol TE/100 g	857
	L-ORAC	umol TE/100 g	27
	Total-ORAC	umol TE/100 g	884
	TP	mg GAE/100 g	202
Pineapple, raw, traditional varieties	H-ORAC	umol TE/100 g	520
	L-ORAC	umol TE/100 g	42
	Total-ORAC	umol TE/100 g	562
	TP	mg GAE/100 g	122
Plums, black diamond, with peel, raw	H-ORAC	umol TE/100 g	7546
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	7581
	TP	mg GAE/100 g	478
Plums, dried (prunes), uncooked	H-ORAC	umol TE/100 g	6463



	L-ORAC	umol TE/100 g	179
	Total-ORAC	umol TE/100 g	6552
	TP	mg GAE/100 g	745
Plums, raw	H-ORAC	umol TE/100 g	6241
	L-ORAC	umol TE/100 g	17
	Total-ORAC	umol TE/100 g	6259
	TP	mg GAE/100 g	367
Potatoes, red, flesh and skin, baked	H-ORAC	umol TE/100 g	1304
	L-ORAC	umol TE/100 g	22
	Total-ORAC	umol TE/100 g	1326
	TP	mg GAE/100 g	179
Potatoes, red, flesh and skin, raw	H-ORAC	umol TE/100 g	1060
	L-ORAC	umol TE/100 g	38
	Total-ORAC	umol TE/100 g	1098
	TP	mg GAE/100 g	138
Potatoes, Russet, flesh and skin, baked	H-ORAC	umol TE/100 g	1652
	L-ORAC	umol TE/100 g	28
	Total-ORAC	umol TE/100 g	1680
	TP	mg GAE/100 g	176
Potatoes, russet, flesh and skin, raw	H-ORAC	umol TE/100 g	1272
	L-ORAC	umol TE/100 g	51
	Total-ORAC	umol TE/100 g	1322
	TP	mg GAE/100 g	122
Potatoes, white, flesh and skin, baked	H-ORAC	umol TE/100 g	1098
	L-ORAC	umol TE/100 g	40
	Total-ORAC	umol TE/100 g	1138
	TP	mg GAE/100 g	136
Potatoes, white, flesh and skin, raw	H-ORAC	umol TE/100 g	1010
	L-ORAC	umol TE/100 g	49
	Total-ORAC	umol TE/100 g	1058
	TP	mg GAE/100 g	163
Prune juice, canned	H-ORAC	umol TE/100 g	2036
	Total-ORAC	umol TE/100 g	2036
Pumpkin, raw	H-ORAC	umol TE/100 g	414
	L-ORAC	umol TE/100 g	69
	Total-ORAC	umol TE/100 g	483
	TP	mg GAE/100 g	157
Radish seeds, sprouted, raw	H-ORAC	umol TE/100 g	2184
	Total-ORAC	umol TE/100 g	2184
	TP	mg GAE/100 g	100
Radishes, raw	H-ORAC	umol TE/100 g	1724
	L-ORAC	umol TE/100 g	26
	Total-ORAC	umol TE/100 g	1736
	TP	mg GAE/100 g	79
Raisins, seedless	H-ORAC	umol TE/100 g	3002
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	3037
	TP	mg GAE/100 g	1065
Raisins, white, dried to 40% moisture (purchased in Italy)	H-ORAC	umol TE/100 g	4188
	Total-ORAC	umol TE/100 g	4188
	TP	mg GAE/100 g	372

Raisins, white, fresh (purchased in Italy)	H-ORAC	umol TE/100 g	830
	Total-ORAC	umol TE/100 g	830
	TP	mg GAE/100 g	164
Raspberries, raw	H-ORAC	umol TE/100 g	4745
	L-ORAC	umol TE/100 g	138
	Total-ORAC	umol TE/100 g	4882
	TP	mg GAE/100 g	502
Rice bran, crude	H-ORAC	umol TE/100 g	8817
	L-ORAC	umol TE/100 g	15470
	Total-ORAC	umol TE/100 g	24287
	TP	mg GAE/100 g	667
Rocket, raw	H-ORAC	umol TE/100 g	1904
	Total-ORAC	umol TE/100 g	1904
	TP	mg GAE/100 g	125
Sage, fresh	H-ORAC	umol TE/100 g	32004
	Total-ORAC	umol TE/100 g	32004
	TP	mg GAE/100 g	901
Sauce, ready-to-serve, salsa	H-ORAC	umol TE/100 g	966
	L-ORAC	umol TE/100 g	35
	Total-ORAC	umol TE/100 g	1001
	TP	mg GAE/100 g	245
Savory, fresh	H-ORAC	umol TE/100 g	9465
	Total-ORAC	umol TE/100 g	9465
	TP	mg GAE/100 g	227
Snacks, popcorn, air-popped	H-ORAC	umol TE/100 g	1535
	L-ORAC	umol TE/100 g	208
	Total-ORAC	umol TE/100 g	1743
	TP	mg GAE/100 g	117
Sorghum, bran, black	H-ORAC	umol TE/100 g	97000
	L-ORAC	umol TE/100 g	3800
	Total-ORAC	umol TE/100 g	100800
	TP	mg GAE/100 g	2600
Sorghum, bran, hi-tannin	Total-ORAC	umol TE/100 g	240000
Sorghum, bran, red	H-ORAC	umol TE/100 g	70400
	L-ORAC	umol TE/100 g	700
	Total-ORAC	umol TE/100 g	71000
	TP	mg GAE/100 g	2000
Sorghum, bran, white	Total-ORAC	umol TE/100 g	6400
Sorghum, grain, black	H-ORAC	umol TE/100 g	20500
	L-ORAC	umol TE/100 g	1400
	Total-ORAC	umol TE/100 g	21900
	TP	mg GAE/100 g	600
Sorghum, grain, hi-tannin	H-ORAC	umol TE/100 g	44000
	L-ORAC	umol TE/100 g	1400
	Total-ORAC	umol TE/100 g	45400
	TP	mg GAE/100 g	1300
Sorghum, grain, red	H-ORAC	umol TE/100 g	13600
	L-ORAC	umol TE/100 g	400
	Total-ORAC	umol TE/100 g	14000
	TP	mg GAE/100 g	500
Sorghum, grain, white	H-ORAC	umol TE/100 g	2100

	L-ORAC	umol TE/100 g	100
	Total-ORAC	umol TE/100 g	2200
	TP	mg GAE/100 g	100
Soybeans, mature seeds, raw	H-ORAC	umol TE/100 g	5764
	Total-ORAC	umol TE/100 g	5764
	TP	mg GAE/100 g	249
Soybeans, mature seeds, sprouted, raw	H-ORAC	umol TE/100 g	962
	Total-ORAC	umol TE/100 g	962
	TP	mg GAE/100 g	47
Spices, basil, dried	H-ORAC	umol TE/100 g	64439
	L-ORAC	umol TE/100 g	3114
	Total-ORAC	umol TE/100 g	67553
	TP	mg GAE/100 g	4489
Spices, cardamom	H-ORAC	umol TE/100 g	2764
	Total-ORAC	umol TE/100 g	2764
	TP	mg GAE/100 g	167
Spices, chili powder	H-ORAC	umol TE/100 g	21827
	L-ORAC	umol TE/100 g	1808
	Total-ORAC	umol TE/100 g	23636
	TP	mg GAE/100 g	1713
Spices, cinnamon, ground	H-ORAC	umol TE/100 g	264083
	L-ORAC	umol TE/100 g	3453
	Total-ORAC	umol TE/100 g	267536
	TP	mg GAE/100 g	15718
Spices, cloves, ground	H-ORAC	umol TE/100 g	153309
	L-ORAC	umol TE/100 g	161137
	Total-ORAC	umol TE/100 g	314446
	TP	mg GAE/100 g	11319
Spices, cumin seed	H-ORAC	umol TE/100 g	76800
	Total-ORAC	umol TE/100 g	76800
	TP	mg GAE/100 g	846
Spices, curry powder	H-ORAC	umol TE/100 g	24981
	L-ORAC	umol TE/100 g	23523
	Total-ORAC	umol TE/100 g	48504
	TP	mg GAE/100 g	1075
Spices, garlic powder	H-ORAC	umol TE/100 g	6523
	L-ORAC	umol TE/100 g	143
	Total-ORAC	umol TE/100 g	6665
	TP	mg GAE/100 g	42
Spices, ginger, ground	H-ORAC	umol TE/100 g	6944
	L-ORAC	umol TE/100 g	21867
	Total-ORAC	umol TE/100 g	28811
	TP	mg GAE/100 g	317
Spices, mustard seed, yellow	H-ORAC	umol TE/100 g	28759
	L-ORAC	umol TE/100 g	498
	Total-ORAC	umol TE/100 g	29257
	TP	mg GAE/100 g	1844
Spices, onion powder	H-ORAC	umol TE/100 g	5651
	L-ORAC	umol TE/100 g	84
	Total-ORAC	umol TE/100 g	5735
	TP	mg GAE/100 g	861

Spices, oregano, dried	H-ORAC	umol TE/100 g	183141
	L-ORAC	umol TE/100 g	16988
	Total-ORAC	umol TE/100 g	200129
	TP	mg GAE/100 g	7282
Spices, paprika	H-ORAC	umol TE/100 g	16096
	L-ORAC	umol TE/100 g	1823
	Total-ORAC	umol TE/100 g	17919
	TP	mg GAE/100 g	1866
Spices, parsley, dried	H-ORAC	umol TE/100 g	74085
	L-ORAC	umol TE/100 g	264
	Total-ORAC	umol TE/100 g	74349
	TP	mg GAE/100 g	2244
Spices, pepper, black	H-ORAC	umol TE/100 g	14263
	L-ORAC	umol TE/100 g	13354
	Total-ORAC	umol TE/100 g	27618
	TP	mg GAE/100 g	548
Spices, poppy seed	H-ORAC	umol TE/100 g	406
	L-ORAC	umol TE/100 g	75
	Total-ORAC	umol TE/100 g	481
	TP	mg GAE/100 g	20
Spices, turmeric, ground	H-ORAC	umol TE/100 g	39931
	L-ORAC	umol TE/100 g	119346
	Total-ORAC	umol TE/100 g	159277
	TP	mg GAE/100 g	2117
Spinach, frozen, chopped or leaf, unprepared	H-ORAC	umol TE/100 g	1687
	Total-ORAC	umol TE/100 g	1687
	TP	mg GAE/100 g	91
Spinach, raw	H-ORAC	umol TE/100 g	1512
	L-ORAC	umol TE/100 g	420
	Total-ORAC	umol TE/100 g	1515
	TP	mg GAE/100 g	205
Squash, summer, zucchini, includes skin, raw	H-ORAC	umol TE/100 g	180
	Total-ORAC	umol TE/100 g	180
	TP	mg GAE/100 g	26
Squash, winter, butternut, raw	H-ORAC	umol TE/100 g	396
	Total-ORAC	umol TE/100 g	396
	TP	mg GAE/100 g	26
Strawberries, raw	H-ORAC	umol TE/100 g	3541
	L-ORAC	umol TE/100 g	36
	Total-ORAC	umol TE/100 g	3577
	TP	mg GAE/100 g	368
Sumac, bran, raw	H-ORAC	umol TE/100 g	309900
	L-ORAC	umol TE/100 g	2500
	Total-ORAC	umol TE/100 g	312400
	TP	mg GAE/100 g	6600
Sumac, grain, raw	H-ORAC	umol TE/100 g	85300
	L-ORAC	umol TE/100 g	1500
	Total-ORAC	umol TE/100 g	86800
	TP	mg GAE/100 g	2300
Sweet potato, cooked, baked in skin, without salt	H-ORAC	umol TE/100 g	2085
	L-ORAC	umol TE/100 g	30

	Total-ORAC	umol TE/100 g	2115
	TP	mg GAE/100 g	233
Sweet potato, cooked, boiled, without skin	H-ORAC	umol TE/100 g	729
	L-ORAC	umol TE/100 g	37
	Total-ORAC	umol TE/100 g	766
	TP	mg GAE/100 g	120
Sweet potato, raw, unprepared	H-ORAC	umol TE/100 g	858
	L-ORAC	umol TE/100 g	44
	Total-ORAC	umol TE/100 g	902
	TP	mg GAE/100 g	74
Tangerines, (mandarin oranges), raw	H-ORAC	umol TE/100 g	1620
	L-ORAC	umol TE/100 g	7
	Total-ORAC	umol TE/100 g	1620
	TP	mg GAE/100 g	192
Tarragon, fresh	H-ORAC	umol TE/100 g	15542
	Total-ORAC	umol TE/100 g	15542
	TP	mg GAE/100 g	643
Tea, brewed, prepared with tap water	H-ORAC	umol TE/100 g	1128
	Total-ORAC	umol TE/100 g	1128
Tea, green, brewed	H-ORAC	umol TE/100 g	1253
	Total-ORAC	umol TE/100 g	1253
Thyme, fresh	H-ORAC	umol TE/100 g	27426
	Total-ORAC	umol TE/100 g	27426
	TP	mg GAE/100 g	1734
Tomato juice, canned, with salt added	H-ORAC	umol TE/100 g	486
	Total-ORAC	umol TE/100 g	486
	TP	mg GAE/100 g	323
Tomato products, canned, sauce	H-ORAC	umol TE/100 g	652
	L-ORAC	umol TE/100 g	42
	Total-ORAC	umol TE/100 g	694
	TP	mg GAE/100 g	177
Tomatoes, plum, raw	H-ORAC	umol TE/100 g	546
	Total-ORAC	umol TE/100 g	546
	TP	mg GAE/100 g	36
Tomatoes, red, ripe, cooked	H-ORAC	umol TE/100 g	389
	L-ORAC	umol TE/100 g	34
	Total-ORAC	umol TE/100 g	406
	TP	mg GAE/100 g	94
Tomatoes, red, ripe, raw, year round average	H-ORAC	umol TE/100 g	366
	L-ORAC	umol TE/100 g	23
	Total-ORAC	umol TE/100 g	367
	TP	mg GAE/100 g	80
Tortilla chips, reduced fat, Olestra	H-ORAC	umol TE/100 g	1609
	L-ORAC	umol TE/100 g	94
	Total-ORAC	umol TE/100 g	1704
	TP	mg GAE/100 g	304
Vegetable juice cocktail, canned	H-ORAC	umol TE/100 g	548
	Total-ORAC	umol TE/100 g	548
	TP	mg GAE/100 g	244
Vinegar, Apple	H-ORAC	umol TE/100 g	564
	Total-ORAC	umol TE/100 g	564

	TP	mg GAE/100 g	23
Vinegar, Apple and Honey	H-ORAC	umol TE/100 g	270
	Total-ORAC	umol TE/100 g	270
	TP	mg GAE/100 g	27
Vinegar, Honey	H-ORAC	umol TE/100 g	225
	Total-ORAC	umol TE/100 g	225
	TP	mg GAE/100 g	21
Vinegar, Red wine	H-ORAC	umol TE/100 g	410
	Total-ORAC	umol TE/100 g	410
	TP	mg GAE/100 g	26
Watermelon, raw	H-ORAC	umol TE/100 g	123
	L-ORAC	umol TE/100 g	19
	Total-ORAC	umol TE/100 g	142
	TP	mg GAE/100 g	59

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