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08/05/2014

Certificate of Analysis

Customer: GeSz Gaal es Sziklas Kft.
Sample Identification:

Batch #: B-14262
BL ID #: 14-0419
Description: Flavon Green +, paste, 14124
Date Received: 07/17/2014

Results:

Analysis	Result	Units
ORAC against peroxyl radicals	154	µmole TE/gram
ORAC against hydroxyl radicals	387	µmole TE/gram
ORAC against peroxynitrite	40	µmole TE/gram
ORAC against super oxide anion	848	µmole TE/gram
ORAC against singlet oxygen	1,997	µmole TE/gram
ORAC 5.0 (sum of above)	3,426	µmole TE/gram

There are five predominant reactive species found in the body: peroxyl radicals, hydroxyl radicals, peroxynitrite, super oxide anion, and singlet oxygen. ORAC 5.0 provides a measure of the total antioxidant power of a food/nutrition product against the five predominant reactive species.

The ORAC result is expressed as micromole Trolox equivalency (µmole TE) per gram.

Released on behalf of Brunswick Laboratories by
Jin Ji, Ph.D.
Chief Technology Officer

REFERENCES:

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[2] Huang, D. *et al.*, *J Agric and Food Chem*, **2002**, 50 (7): 1815-1821.
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[4] Zhang, L. *et al.*, *Free Radic.Bio Med*, **2007**, 43 (suppl. 1): S17.
[5] Dubost, N.J. *et al.*, *Food Chem*, **2007**, 105 (2): 727-735
[6] Zhang, L. *et al.*, *J Agric and Food Chem*, **2009**, 57(7): 2661-2667.
[7] Ou, B. *et al.*, Method for assaying the antioxidant capacity of a sample. *US Patent* 7, 132, 296 B2.

BRUNSWICK LABORATORIES

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ORAC 5.0 Method Description:

Oxygen Radical Absorbance Capacity (ORAC) tests are among the most acknowledged methods that measure antioxidant scavenging activity against oxygen radicals that are known to be involved in the pathogenesis of aging and many common diseases. ORAC 5.0 consists of five types of ORAC assays that evaluate the antioxidant capacity of a material against five primary reactive oxygen species (ROSs, commonly called "oxygen radicals") found in humans: peroxyl radical, hydroxyl radical, superoxide anion, singlet oxygen, and peroxynitrite. This is a comprehensive panel that evaluates the antioxidant capacity of a material against oxygen radicals

The ORAC 5.0 tests are based on evaluating the capacity of an interested material to protect a probe (a fluorescent probe or chromagen) from its damage by ROSs. In all ORAC assays, an ROS inducer is introduced to the assay system. The ROS inducer triggers the release of a specific ROS, which would degrade the probe and cause its emission wavelength or intensity change. When an antioxidant material presents in the environment, the antioxidant absorbs the ROS and preserves the probe from degradation. The degree of probe preservation indicates the antioxidant capacity of the material. Trolox is used as the reference standard, and the results are expressed as μmole Trolox equivalency per gram (or milliliter) of a tested material.

The ORAC 5.0 values obtained from various natural and synthetic materials range widely due to the significantly different natures of these materials including fresh produce, liquid, extract, pure compound, cream, or oil. Select ORAC 5.0 values of benchmark materials are listed in our website to provide limited scale. Comparisons between materials from similar categories are more informative and valuable.