Certificate of Analysis

Prepared For:	Gesz Gaal es Sziklas Kft.
Batch Number:	B-15799
BL ID #:	18-0553
Description:	FLAVON PEAK VEGGIE, liquid, 02418
Date Received:	08/03/2018
COA Number:	B-15799a-01
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Results:

Analysis	Result	Units
ORAC against peroxyl radicals	155	µmole TE/gram
ORAC against hydroxyl radicals	366	µmole TE/gram
ORAC against peroxynitrite	95	µmole TE/gram
ORAC against super oxide anion	1,601	µmole TE/gram
ORAC against singlet oxygen	203	µmole TE/gram
ORAC against hypochlorite	25	µmole TE/gram

There are six predominant reactive species found in the body: peroxyl radicals, hydroxyl radicals, peroxynitrite, super oxide anion, singlet oxygen and hypochlorite. ORAC 6.0 provides comprehensive analyses of antioxidant capacity of a food/nutrition product against the six predominant reactive species.

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

References:

[1] Ou, Boxin, Maureen Hampsch-Woodill, and Ronald L. Prior. "Development and validation of an improved oxygen radical absorbance capacity assay using fluorescein as the fluorescent probe." *Journal of agricultural and food chemistry* 49.10 (2001): 4619-4626.

[2] Huang, Dejian, et al. "Development and validation of oxygen radical absorbance capacity assay for lipophilic antioxidants using randomly methylated β-cyclodextrin as the solubility enhancer." *Journal of Agricultural and Food Chemistry* 50.7 (2002): 1815-1821.

[3] Ou, Boxin, et al. "Novel fluorometric assay for hydroxyl radical prevention capacity using fluorescein as the probe." *Journal of Agricultural and Food Chemistry* 50.10 (2002): 2772-2777.

[4] Dubost, N. Joy, Boxin Ou, and Robert B. Beelman. "Quantification of polyphenols and ergothioneine in cultivated mushrooms and correlation to total antioxidant capacity." *Food Chemistry* 105.2 (2007): 727-735.

[5] Zhang, Liliang, et al. "Novel high-throughput assay for antioxidant capacity against superoxide anion." *Journal of agricultural and food chemistry* 57.7 (2009): 2661-2667.

[6] Ou, Boxin, Dejian Huang, and Maureen H. Woodill. "Method for assaying the antioxidant capacity of a sample." U.S. Patent No. 7,132,296. 7 Nov. 2006.

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ORAC 6.0 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 6.0 consists of six types of ORAC assays that evaluate the antioxidant capacity of a material against six primary reactive oxygen species (ROSs, commonly called "oxygen radicals") found in humans: peroxyl radical, hydroxyl radical, superoxide anion, singlet oxygen, peroxynitrite, and hypochlorite. This is a comprehensive panel that evaluates the antioxidant capacity of a material against oxygen radicals.

The ORAC 6.0 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.

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