

elaVida™

Natural goodness from olives

What is elaVida™?

elaVida™ is a superior olive polyphenol formulation with excellent handling characteristics and application performance in supplements, foods and beverages.

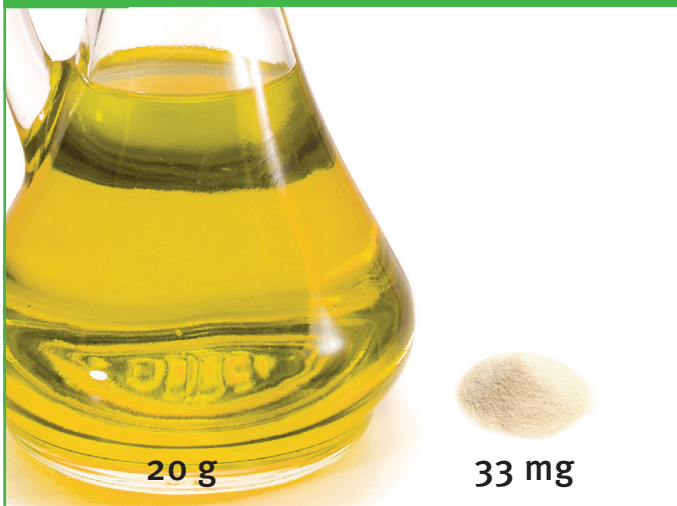
elaVida™ comes with product concepts embedded in the DSM Health Benefit Solutions, and can help you differentiate your consumer products with antioxidant, heart health, joint health or energy benefits.

Olive polyphenols and the Mediterranean diet

The Mediterranean diet is associated with a number of health benefits. Olives are an important food of the Mediterranean diet, and olive oil is the principal source of fat. Consumers are well aware about olive oil as a healthy food. Evidence is accumulating that olive polyphenols contribute to a major part of the health benefit of olives and olive oil. The past few years, also fuelled by EFSA's positive opinion about the health benefit of olive oil polyphenols, saw increased market dynamics in new food product launches featuring olive polyphenols.



? What do you think is easier to add to your product: 20 g of olive oil or 33 mg of elaVida™?



33 mg elaVida™ 15% provides the same amount of polyphenols as 20g of extra virgin olive oil*

* For typical polyphenol content of extra virgin olive oils see Romero et al, J. Agric. Food. Chem. 2012, 60, 9017-9022 and Bengana et al., Food Research International 2013, 54, 1868-1875

elaVida™ KEY BENEFITS

**Olive polyphenols are the only non-vitamin/
non-mineral ingredient with a granted EU health claim
for antioxidant function:**

- supported by a considerable body of evidence
- synergistically acting with antioxidant vitamins and minerals to support the body's own antioxidant defense

elaVida™ is a superior olive polyphenol preparation

- made from olive fruits using a proprietary process
- standardized for hydroxytyrosol content, the main and best researched phenolic antioxidant in extra virgin olive oil¹
- with excellent performance in foods, beverages and supplements including tablets in terms of taste, colour, solubility, stability (below pH 5.3)
- supported by own safety package and clinical data

Benefits

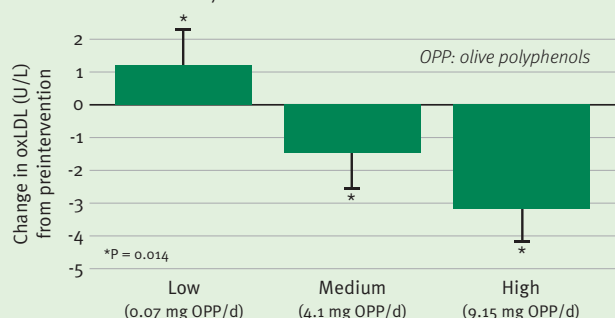
Antioxidant

- Hydroxytyrosol is among the most potent antioxidants from nature as measured in the ORAC assay. Moreover, it can activate the body's own antioxidant defense by stimulating the glutathione system.² Glutathione is a tripeptide which is an important antioxidant of our body.³

Heart health

- EFSA has recognized the body of evidence for olive polyphenols for protecting blood lipids (LDLs) against oxidation.⁴

– LDL (low density lipoprotein) are transport vehicles for lipids in the blood. If oxidized, LDLs (oxLDLs) are taken up by macrophages (scavenger cells) in our blood vessel walls that turn the macrophages into foam cells. Foam cells are the precursors of atherosclerotic plaques. Thus oxLDLs play a key role in the initiation of atherosclerosis.



Joint health

- Preclinical and clinical data support that Mediterranean diet and olive polyphenols help lower the expression of inflammatory markers, also if tested in a joint health context.⁵ Comparison of the anti-inflammatory effect of various olive polyphenol preparations shows that hydroxytyrosol is by far the main contributor.⁶

Energy

- Recently, DSM found that olive polyphenols also benefit mitochondrial function, hence supporting cellular energy metabolism.⁷ The mode of action by which olive polyphenols support mitochondrial function is impaired in metabolic syndrome, leading to mitochondrial dysfunction. Metabolic syndrome can eventually progress to diabetes and heart disease.

For more information on elaVida™ visit www.dsm.com/human-nutrition or e-mail info.dnp@dsm.com

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1 Raederstorff 2009, 79, 152-65, 2 Fito et al. 2005, Atherosclerosis 181, 149-158; Weinbrenner et al. 2004, 134, 2314-2321, 3 Mari et al. 2009, Antioxid. Redox Signal, 11, 2685-2700, 4 <http://www.efsa.europa.eu/de/efsajournal/doc/2033.pdf>; Covas et al. 2006, 40, 608-616; Covas et al. 2006, Annals of Internal Medicine, 145, 333-341; de la Torre-Carbot et al. 2010, 140, 501-508; Fito et al. 2005, Atherosclerosis 181, 149-158; Weinbrenner et al. 2004, 134, 2314-2321; Marrugat et al. 2004, 43, 140-147; Vazquez-Velasco et al. 2010, 2011 105,1448-52, 5 Bitler et al 2007, 27,470-477, 6 Richard 2011 Planta Med, 77,1890-7, 7 Hao et al. 2010, 21, 634-44, 8 DSM, manuscript in preparation.

Claims

European Union

Generic health claim authorised by the Regulation 432/2012

Wording:

"Olive oil polyphenols contribute to the protection of blood lipids from oxidative stress."

Flexibility of wording acceptable as long as the scientific meaning remains the same.

Conditions of use:

For olive oil which contains at least 5 mg of hydroxytyrosol and its derivatives (e.g. oleuropein complex and tyrosol) per 20 g olive oil. The consumer should be informed that the beneficial effect is reached for a daily intake of 20 g olive oil.

Outside the European Union

Additional consumer claims featuring antioxidant, energy, heart and joint health benefits are allowable. Depending on the local regulatory requirements and interpretation, claim wording might be modified.

Technical information

elaVida™ 15%

may be used in dietary and food supplements, foods and beverages, including clear and unflavoured soft drinks.

elaVida™ 40%

may be used in oil fortification and beverages.

The recommended dose depends on the human data for the product positioning as outlined below:

Positioning	Olive polyphenols		
	As hydroxytyrosol	As elaVida™ 15%	As elaVida™ 40%
Antioxidant, heart health	5 mg /d	33.3 mg/d	12.5 mg/d
Joint health	10 mg /d	66.7 mg/d	25 mg/d
Energy	50 mg /d	333 mg/d	125 mg/d



Application examples for elaVida™