

# See what we can offer you

Ferrer HealthTech is proud of the **quality** and the **natural composition** obtained with our **extraction process**. The different versions of **OLEWS** are standardised to various oleuropein concentrations, ranging from 16 to 32% (HPLC, Ph.Eur.). 32% oleuropein is amongst the highest to be reached on industrial scale today.

Furthermore, the oleuropein present in the extract is more soluble in water than oleuropein alone. Thanks to Ferrer HealthTech's **proprietary process**.

## PRODUCT CHARACTERISTICS



### Analytics

- Highly specific extracts
- Internal MoA based on Ph.Eur. monograph
- Oleuropein content: 16-32%



### Solubility

- Freely soluble
- Technological hurdle – proprietary process
- Better solubility: Bioavailability study in humans



### Specials

- Polyphenol composition (Univ Cordoba, Spain)
- Total polyphenol content (CEBAS, Spain)
- Full contaminant analysis

## PRODUCT RANGE

OLEWS 16

OLEWS 32

**OLEWS** is a perfectly **water soluble** and natural olive leaf extract.

The uniqueness of our process lies in the fact that Ferrer HealthTech performs the extraction with water as the only solvent.

All this makes **OLEWS**:

- more competitive
- better cost-in-use
- natural
- free of organic solvents

## APPLICATIONS

### Beverages



Ingredients	g/L
OLEWS32	6.7
Sugar	200
Potassium sorbate	1
Citric acid	2.3
Water	Until 1L
Nf01 (masking)	150 ppm

### Green Tea



Ingredients	g/200 ml
OLEWS32	0.25
Nf01 (masking)	200 ppm
1 green tea bag	1.5
Water	200 ml

### Orange Juice



Ingredients	g/L
OLEWS32	500 ppm
Nf01 (masking)	275 ppm
Orange juice	Until 1Li

### Black Tea



Ingredients	g/200 ml
OLEWS32	0.25
Nf01 (masking)	200 ppm
1 black tea bag	1.75
Water	200 ml

**olews**  
the strength of olive leaf

## Transparent process

Thanks to our vast experience in the field of extraction from natural sources, Ferrer HealthTech has obtained a **proprietary** and **innovative** olive leaf extract.

The **uniqueness** of our **process** lies in the fact that the extraction is performed with **water** as the only **solvent**.

This leads to many advantages as:

- Perfectly soluble in water, without any vegetable insoluble residue, so completely ready-to-use
- Maximum extraction of oleuropein present in leaves
- Inhibition of any occurring oleuropein degradation
- Better cost-in-use
- Microbiological certified quality to comply high food standards

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Nurturing nature's  
active potential

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# Best features from olive leaves



**olews**  
the strength of olive leaf

The most popular dietary lipid in the **“Mediterranean diet”** is olive oil. Its beneficial effects are attributed to its unique fatty acid profile and to the presence of some minor components that are also responsible for its characteristic flavor and taste.

The main phenolic compound present throughout the olive tree (*Olea europaea*) is **oleuropein**.

OLEWS is Ferrer HealthTech's **olive leaf extract**. Its different versions are standardized from 16 to 32% of oleuropein (HPLC, Ph.Eur.).

OLEWS is a stable powder, it is very **water soluble** and hence easily bioavailable.

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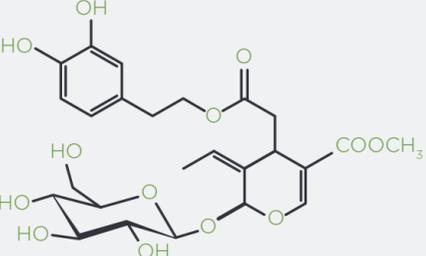
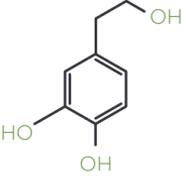
Nurturing nature's  
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# Oleuropein versus hydroxytyrosol

**Oleuropein** is an ester of hydroxytyrosol, which is present in high amounts in the leaves of the olive tree. They confer to the tree protection against many plant pathogens because of its antibacterial activity<sup>1</sup>.

**Oleuropein** is hydrolised in the digestive system into **hydroxytyrosol**, which is then absorbed in the blood stream<sup>2-4</sup>. Thus, oleuropein and **OLEWS** can be considered as a **precursor** of hydroxytyrosol.

**Oleuropein** has been identified as the most suitable precursor of hydroxytyrosol for incorporation into foods or nutraceutical formulations, due to its greater stability during digestion, and, consequently, higher bioavailability<sup>5</sup>.

	Oleuropein	Hydroxytyrosol
<b>Structure</b>		
<b>Molecular weight</b>	540	154
<b>Status</b>	Precursor of Hydroxytyrosol	Metabolite of Oleuropein
<b>Main origin</b>	Leaves	Debittered Olives
<b>Taste</b>	Bitter	Not bitter
<b>Stability</b>	Stable	Unstable

**OLEWS** is Ferrer HealthTech's olive leaf extract. Some advantages of **leaves** as raw material:

- Leaves have **monograph** in Ph.Eur.
- Less** challenging than fruit in terms of **contaminants**

## Science behind

Experimental, clinical and epidemiological studies show the beneficial effects of olive leaf extract. These effects were attributed to its main phenolic component, oleuropein.

Olive leaf extract shows a wide range of pharmacological and health-promoting properties such as cardioprotective<sup>11,12</sup>, neuroprotective<sup>13,14</sup>, gastroprotective<sup>15</sup>, hepatoprotective<sup>16</sup>, anti-diabetes<sup>17,18</sup>, among others, attributed to its antioxidant and anti-inflammatory effects<sup>21-23</sup>.

The effect of olive leaf extract and oleuropein in some conditions has been evaluated in different clinical trials:

### Atherosclerosis

- Olive leaf extract led to a significant **reduction of triglyceride level** in patients with stage-1 hypertension<sup>24</sup>.
- Olive leaf extract **improves lipid profiles** in postmenopausal women with osteopenia, with a significant decrease in total and LDL cholesterol<sup>25</sup>.
- Olive leaf extract shows **lipid-lowering effects** in pre-hypertensive population, leading to a reduction in plasma total cholesterol, LDL cholesterol and triglycerides<sup>26</sup>.

### Hypertension

- Olive leaf extract shows **anti-hypertensive effect** similar to anti-hypertensive specific medication, in subjects with stage-1 hypertension. OLE was similarly effective in **lowering systolic and diastolic blood pressures** as Captopril<sup>24</sup>.
- Olive leaf aqueous extract **decreases blood pressure** in patients suffering with essential hypertension<sup>27</sup>.
- Olive leaf extract intake **lowers systolic and diastolic blood pressure** in in pre-hypertensive population, as well as **interleukin-8**, a marker of inflammation<sup>26</sup>.

### Cardiovascular health

- Olive leaf extract positively **modulates vascular function**, reducing the postprandial stiffness, evaluated by digital volume pulse (DVP), in healthy volunteers<sup>28</sup>.

### Metabolic syndrome

- OLE supplementation in an overweight population was associated with a 15% **improvement in insulin sensitivity**, due to an increase in the pancreatic -cell responsiveness. In addition, OLE also increases fasting proteins related with insulin regulation (IGFBP-1 and IGFBP-2)<sup>18</sup>.
- Olive leaf extract **improves glucose homeostasis** in adults with type 2 diabetes. Plasma glycated haemoglobin and insulin levels were significantly lower in fasting state, but not after meal consumption<sup>29</sup>.

### Bone health

- Olive leaf extract **balances bone turn-over** processes in postmenopausal women. OLE increases serum osteocalcin levels, avoiding the decrease in bone mineral density<sup>25</sup>.
- Hydroxytyrosol, the main oleuropein metabolite, **alleviates** pain in patients with knee osteoarthritis, due to its anti-inflammatory and pain inhibitory effects<sup>30</sup>.

### Ageing

- Oleuropein **improves antioxidant status** in healthy elderly people, increasing catalase (CAT) in erythrocytes and decreasing superoxide dismutase (SOD) and glutathione peroxidase (GH-PX) activity<sup>8</sup>.

### Skin care

- Topic formulations containing oleuropein **reduce UV-B induced erythema**, ameliorating wound water loss and blood flow in the area<sup>20</sup>.



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