CHERRY - Hydrosoluble extract

Anti-ageing & Moisturization & Protection of sensitive skin

Prunus cerasus

The cherry tree is a very common fruit tree originating from Central Europe or Asia: *Prunus cerasus* or *P. cerasus avium*, it belongs to the Rosaceae. It grows wildly in Asia Minor and Macedonia, and is cultivated in all temperate regions of the world. The cherry tree is a fruit tree that can reach 10 meters high with a trunk with smooth, dark bark. The green leaves are oval, shiny and serrate. The flowers are white and grouped in corymbs. Fruits, cherries are globosely drupes, fleshy, juicy and bright red to almost black depending on the maturity.

Cherry has a long stalk still named "Cherry tail", traditionally used as a diuretic infusion. Cherry stalks are in French pharmaceutical codex still a powerful diuretic.

Moreover, in Taoist Chinese medicine, it is recommended to eat cherries to cure a sore throat. In addition, during the Middle Ages, doctors and herbalists of the school of Salerno, Italy, used it to clean the global organism.

Finally, the cherry is traditionally used as antioxidant, astringent, anti-inflammatory and tonic.

Did you know ?

Cherry represents abundance because it gives the first fruits of the summer. The tradition of vermilion earrings of our youth has its origins it this belief...

COMPOSITION of the extract

The extract of cherry is obtained from the **fruits** of ***Prunus cerasus***.

Oligo and polysaccharides: fructose, glucose, pectin.
Phenolic compounds: anthocyanins (cyanidin-3-sophorosid, cyanidin-3-glucosylrutinoside, cyanidin-3-glucoside, cyanidin-3-rutinoside), neochlorogenic acid.
Minerals: calcium, magnesium, phosphor, potassium.
Proteins and amino acids.
Other: traces of α-tocopherol and ascorbic acid.

COSMETIC PROPERTIES

Cherry extract helps to:

1 – Prevent skin ageing
2 – Sooth and calm skin irritations
3 – Moisturize upper layers of epidermis

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COSMETIC PROPERTIES

Anti ageing activity

Numerous studies have revealed anti-ageing activity of cherry because of its phenolic composition. Indeed, the cherry is rich in anthocyanins, phenolic acids... which are strong antioxidants.

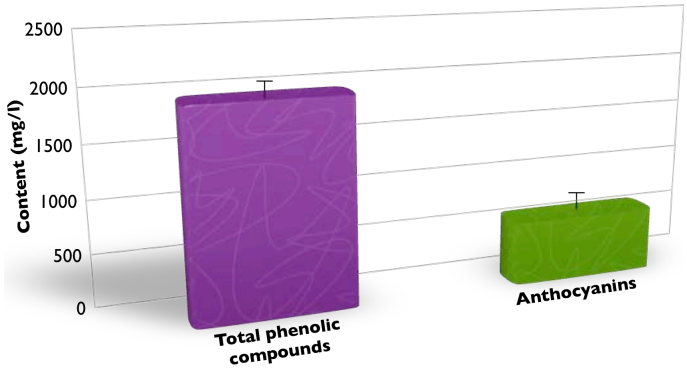
Many studies have shown the strong antioxidant activity of cherry through various tests:

- Measurement of the total phenolic content, the specific dosage of anthocyanins content, the measure of total antioxidant capacity (Blando, Gerardi et al. 2004; Liu, Liu et al. 2011; Damar and Eksi 2012) (Figure 1)

- Methods like ORAC (Oxygen Radical Absorbance Capacity), NORAC (perOxyNitrite Radical Averting Capacity), HORAC (HydrOxyl Radical Averting Capacity), SORAC (SuperOxide Radical Averting Capacity), ABTS (2,2'-Azino-Bis(3-ethylbenzoThiazoline-6-Sulphonic acid), with the free radical DPPH (2,2-diphenyl-1-picrylhydrazyl) (Serteser, Kargioglu et al. 2008; Yook, Kim et al. 2010; Ou, Bosak et al. 2012) (Figures 2 and 3),

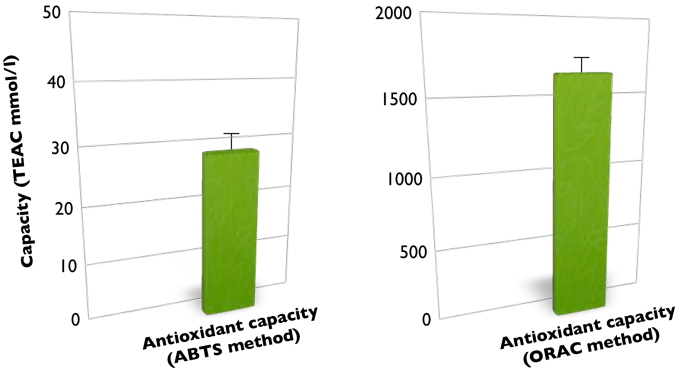
- Measurement of enzymatic activity of the SOD (SuperOxyde Dismutase), inhibition of superoxide H_2O_2, inhibition of lipid peroxidation through evaluation of the Fe^{2+}chelation, the follow-up of lipid oxidation by fluorescence... (Seeram, Momin et al. 2001; Serteser, Kargioglu et al. 2008) (Figures 4, 5 and 6).

Figure 1: Antioxidant activity of cherry: Content in phenolic coumpounds (according to Damar *et al.*, 2012 ; Blando *et al.*, 2004)



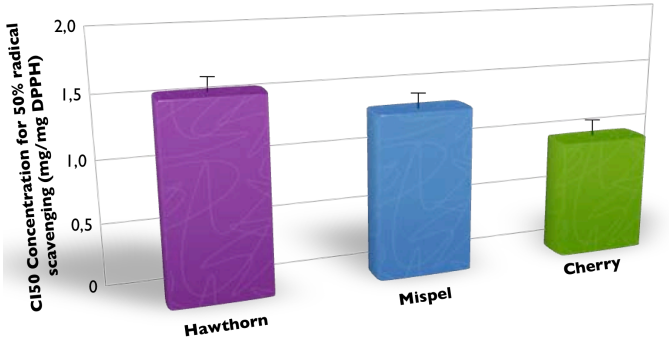
-> The cherry has antioxidant activity.

Figure 2: Antioxidant activity of cherry: (according to Damar *et al.*, 2012 ; Blando *et al.*, 2004)



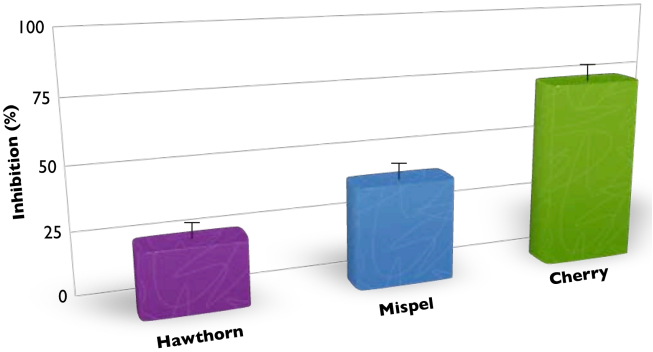
-> The cherry has antioxidant activity.

Figure 3: Anti-radicalar activity of the cherry: 50% Neutralisation/Capture concentration of free radical DPPH (according to Serteser *et al.*, 2008)



-> The cherry has strong antioxidant activity.

Figure 4: Antioxidant activity of cherry: Inhibition of H2O2 superoxide (according to Serteser *et al.*, 2008)



-> The cherry has strong antioxidant activity.

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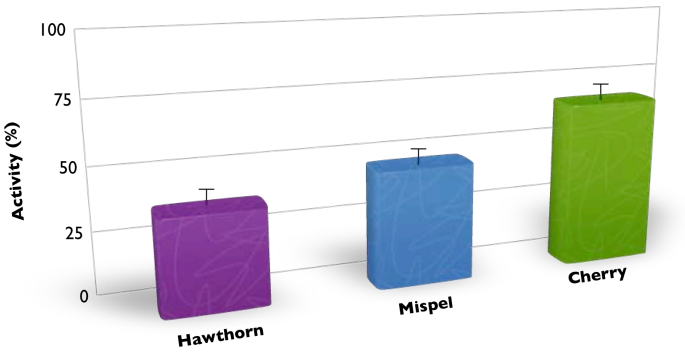
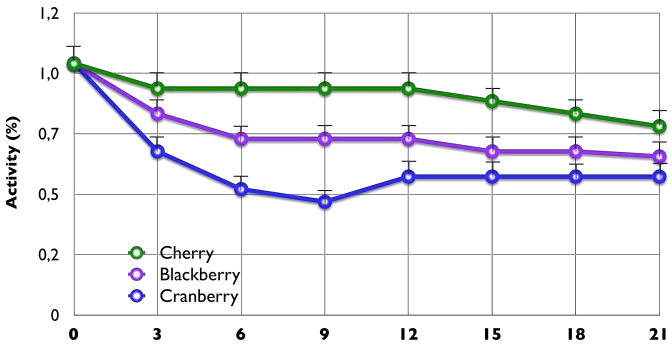
Figure 5: Antioxidant activity of cherry: Inhibition of lipid peroxidation: Chelating activity of Fe2+ (according to Serteser *et al.*, 2008)



-> The cherry has strong antioxidant activity.

Figure 6: Antioxidant activity of cherry: Inhibition of lipid peroxidation followed by fluorescence (according to Seeram *et al.*, 2001)



-> The cherry has strong antioxidant activity.

Therefore, cherry extract helps to fight against attacks of free radicals and thus, to protect cellular and membrane structures from damages.

➔Cherry extract helps to fight against skin ageing.

Soothing/calming activity

Skin suffers daily from external aggressions such as pollution, UV, smoking, irritating products...

These environmental attacks lead to more or less strong irritations, burns... and inflammatory reactions of our body such as asthma, eczema or rheumatism...

The use of certain plant extracts, such as cherry with anti-inflammatory properties, help to calm and sooth these minor irritations and inflammations.

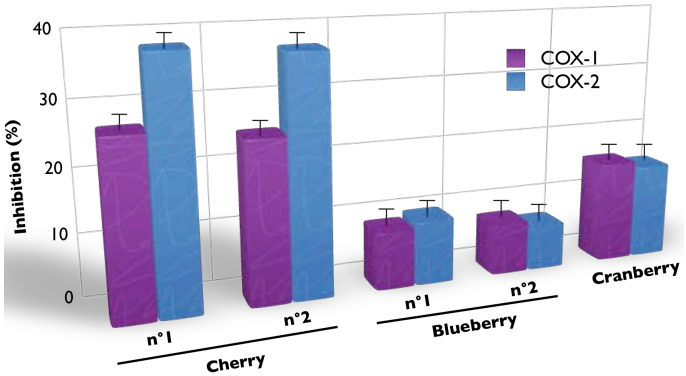
Recent studies have shown soothing and calming activity of cherry: the extract is capable of inhibiting the enzymatic activity of two enzymes involved in the inflammatory process, COX-1 and -2 (CycloOxygenases) (Seeram, Momin et al. 2001) (Figure 7).

In parallel, other studies have demonstrated the inhibitory effect of cherry on inflammatory cytokines secretion.

Cherry extract reduces the production of IL-6 (interleukin-6), previously induced by an irritant, LPS (LipoPolySaccharide) (Zhou, Nair et al. 2012) (Figure 8).

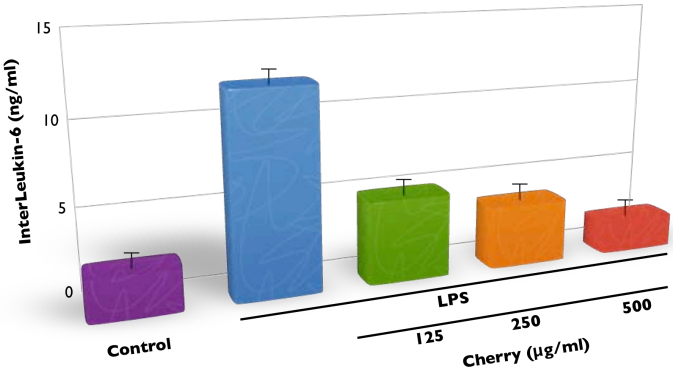
Thus, cherry extract helps to calm daily slight inflammations.

Figure 7: Soothing/calming activity of cherry: Inhibition of COX-1 & -2, CyclyOXygenases (according to Seeram *et al.*, 2001)



-> The cherry has soothing/calming activity.

Figure 8: Soothing/calming activity of cherry: Inhibition of cytokine release, the InterLeukin-6, IL-6 (according to Zhou *et al.*, 2012)



-> The cherry has soothing/calming activity.

➔ Cherry extract helps to sooth/calm irritated skin.

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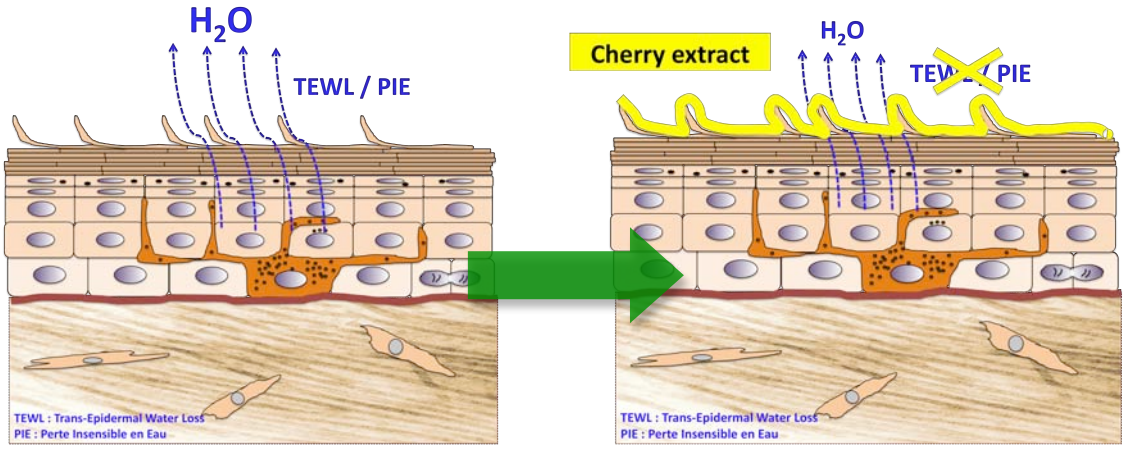
Additional property: Moisturizing activity

With its rich oligo-and polysaccharides, cherry extract has moisturizing / emollient properties.

Indeed, these oligo-and polysaccharides included in cherry extract are involved in both ways of skin moisturization: the active and passive moisturizations that are linked to chemical and physical interactions of compounds with skin barrier. The active phenomenon is to provide skin with emollients such as humectants (agents that bind water to skin surface) and components of the NMF (Natural Moisturizing Factors), hydrosoluble, hygroscopic and natural substances in *stratum corneum*. On the other hand, the passive phenomenon involves substances that act as a barrier to TEWL.

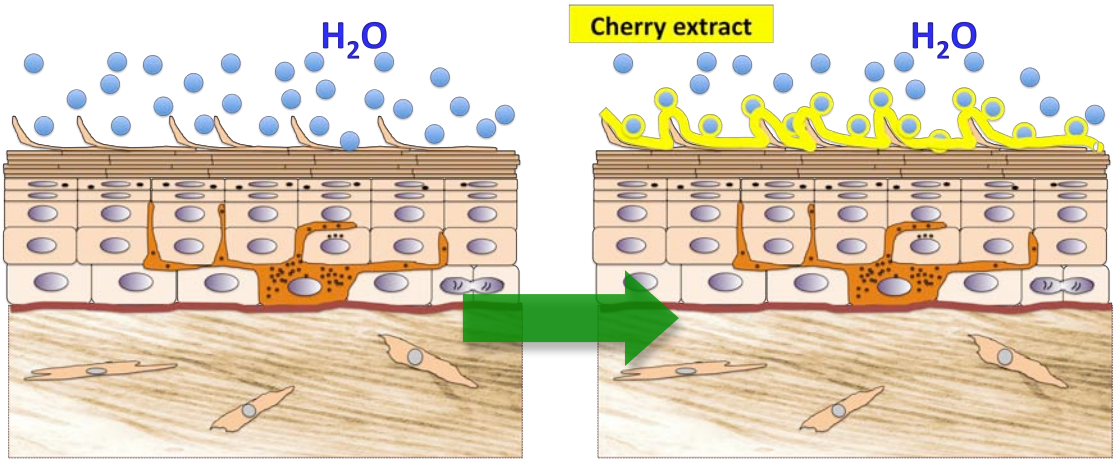
Firstly, polysaccharides that are natural polymers will create a protective film on *stratum corneum* that will act as a barrier to TEWL: they will limit water loss by decreasing permeability of skin. Cherry extract acts in passive way of skin moisturization (Figure 9).

Figure 9: Passive way of moisturizing property of cherry



Secondly, oligo-and polysaccharides are very hygroscopic sugar molecules, they will therefore capture the surrounding water particles and bind them to skin surface. Amino acids contained in extract of cherry will similarly perform. Cherry extract acts then in the active way of skin moisturization (Figure 10).

Figure 10: Active way of moisturizing property of cherry



Cherry extract helps to reduce skin dehydration and regulate barrier functions of skin.

➔ Cherry extract is a good moisturizer and softener.

COSMETIC APPLICATIONS

Cherry extract is recommended for its following properties:

- ***Anti-ageing / Antioxidant***
- ***Soothing / Calming***
- ***Moisturizing***

Prunus Cerasus (Bitter Cherry) Extract	N° CAS : 89997-53-5 N° EINECS : 289-688-3

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