



POMEGRANATE PEELS BOTANICAL EXTRACT

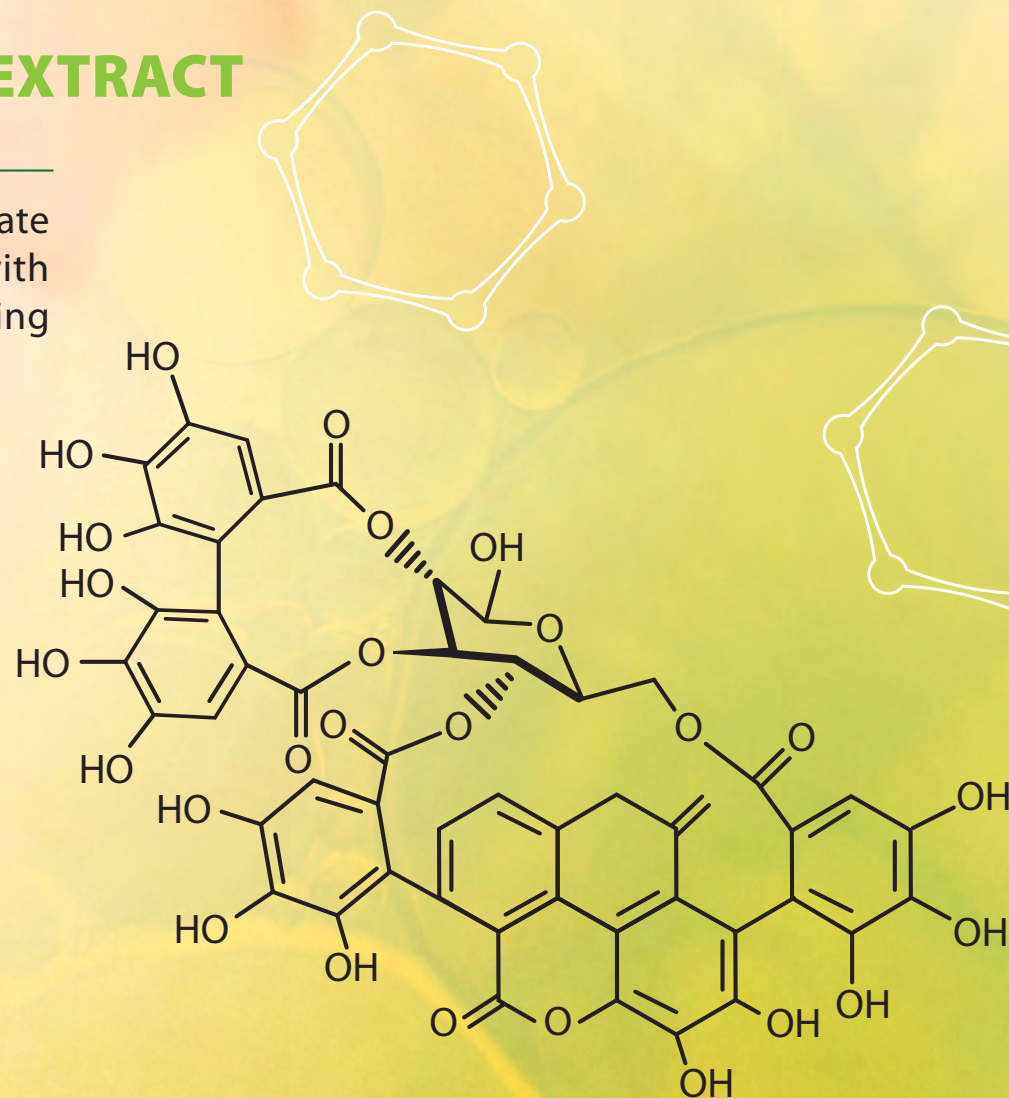
INCI: *PUNICA GRANATUM* PEEL EXTRACT

Derived from French juice industry by-products, pomegranate peel extracts have been used in cosmetics for decades, with their proven antioxidant, anti-aging, and skin-rejuvenating properties clearly demonstrated.

→ Antofenol has reimagined this classic ingredient using its patented hyperfrequency extraction technology, enhancing its natural efficacy and sustainability to bring innovation to this emblematic raw material in cosmetics.

BIOCHEMICAL COMPOSITION

- High content in punicallagins: $\geq 10.0\%$
- Ellagic acid content: $\geq 0.4\%$





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ACTIVATION OF EXTRACELLULAR MATRIX AND BASAL LAMINA GENES AND % EFFECT:

- **COL1A1 (Collagen type I, alpha 1) +80 %**,
COL5A1 (Collagen type V, alpha 1) +60 %:
strengthens the structure and elasticity of the skin.
- **LAMC2 (Laminin gamma 2) +150 %**, component of Laminin 5, an adhesion molecule to the basal lamina. It promotes the anchoring of cells at the dermo-epidermal junction.
- **DPT (Dermatopontin) +80 %**: dermatopontin is an ExtraCellular Matrix protein that is involved in cell/matrix interactions and matrix assembly. It regulates matrix architecture.
- **LUM (Lumican) +90 %**: lumican is a proteoglycan involved in the structuring of the ECM. It is involved in the organization of collagen fibers.





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ACTIVATION OF CELL RENEWAL AND RECONSTRUCTION OF THE EPIDERMIS GENES AND % EFFECT:

- **SIRT2 (sirtuine 2) +260 %:** regulates cell proliferation and promotes cellular longevity.
- **SIRT4 (sirtuine 4) +180 %:** located in the mitochondria which participates in energy production and resistance to UV stress.
- **SIRT5 (sirtuine 5) +60 %:** a mitochondrial enzyme capable of deacetylating cytochrome C, a protein playing a central role in the response to oxidative stress and the induction of apoptosis.
- **SIRT6 (sirtuine 6) +260 %:** involved in DNA double-strand break repair and telomere preservation. Its overexpression protects cells from senescence.
- **SIRT7 (sirtuine 7) +70 %:** regulates cell proliferation in the face of cellular stress.





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ACTIVATION OF RECESSING OF THE EPIDERMAL BARRIER GENES AND % EFFECT:

- **FLG (Filaggrin) +100 %:** filaggrin is associated with keratin intermediate filaments and aggregates them within the epidermis. It thus participates in differentiation.
- **LOR (Loricrin) +80 %:** loricrin is a precursor of the horny envelope, a marker of terminal differentiation.
- **EVPL (Envoplakin) +60 %:** envoplakin is a component of desmosome junctions, within which it allows the binding of keratin intermediate filaments.
- **EPPK1 (Epiplakin) +60 %:** epiplakin is associated with keratin intermediate filaments and partially with vimentin intermediate filaments. It thus participates in the maintenance of the cytoskeleton during keratinocyte differentiation and intervenes in the formation of desmosome junctions.





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REGULATION

INCI	<i>Punica Granatum</i> peel extract
Origin	France, organic by-product
Preservation	Preservative free
Certification	Cosmos certification on demand
Natural index origin (ISO 16128)	100.0 %

TECHNICAL

Appearance	Limpid orange liquid
Solubility	Water soluble
Recommended dosage	0.5 % - 5.0 %
Leads compounds	Punicalagin ≥ 10.0 %





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APPLICATIONS

- It activates the expression of genes involved in the organization and structure of the extracellular matrix.
It activates several genes involved in the formation of the basal lamina.

The restructuring of the basal lamina which constitutes the dermo-epidermal junction and the strengthening of the anchoring of cells to this basal lamina is an anti-aging concept of interest.

It also targets several genes involved in survival and renewal for a potential regenerating/revitalizing effect.

Finally, by activating the genes of epidermal differentiation and the barrier function, the extract participates in the strengthening of the epidermal barrier, the skin's first defense against external aggressions and guarantor of the maintenance of skin hydration.