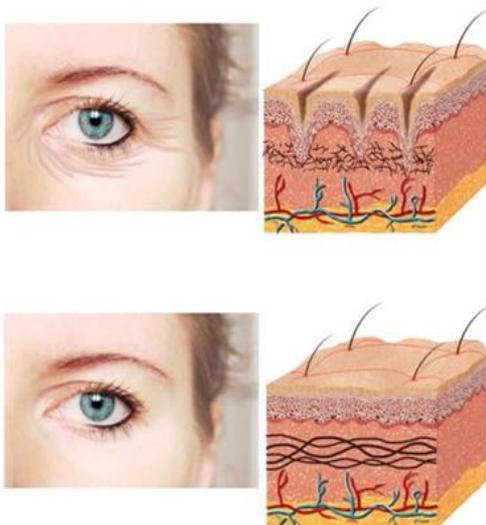




**QUINOA EXTRACT** 100 % natural sugar tensor purified fraction of polysaccharides extracted from Quinoa seeds. It is an innovative active ingredient with a marked filmogenic and tightening effect, as shown at in-vivo efficacy studies.

**POLYSACCHARIDES FRACTION FROM QUINOA SEEDS:**

*Peruvian Gold*, the ancestral gift from the Andes. It is a 100 % natural sugar tensor purified fraction of polysaccharides extracted from Quinoa seeds. Quinoa is an Andean plant which originated in the area surrounding Lake Titicaca in Peru and Bolivia, is also known as *Quínoa*, *kinuwa* or *Peruvian gold*.



Polysaccharides are simple sugars. They fit between carbohydrates and fulfill various functions, especially energetic reserve and structural ones. They have a key role in the living systems' molecules, such as forming its cells and tissues structural components. Sacred to the Incas, Quinoa was referred by them as the mother of all grains. It is the only plant food that contains all the essential amino acids, trace elements and vitamins. Different active ingredients have been investigated to fight facial sagging.

Among them, high molecular weight polymers, such as proteins and polysaccharides, act as immediate skin tightening agents, by forming a film on the skin, leading to a stratum corneum retraction. QUINOA EXTRACT has a high molecular weight three-dimensional configuration, stabilized by inter and intra-chain hydrogen bridges.

This 3D structure optimally fits to the skin's surface by forming multiple hydrogen bonds between the polar heads of the lipids in the phospholipid bilayers in the corneum stratum, in particular, with ceramides, via their amide function and hydroxyl groups (Pascher,1976) , forming a cohesive and continuous biological film, strong and long lasting with lifting effect, that helps to bind skin cells closer together , improving the skin's barrier function, therefore preventing transepidermal water loss.This interaction performs an immediate mechanical tension on the skin, which translates to a smoothening of the cutaneous surface, giving the skin a firmer, smooth and radiant appearance.The biological film slows down trans-epidermal water loss, retaining moisture, and protects the skin from environmental stresses, such as pollution.

## HYALURONIC ACID

Hyaluronic acid (HA) is a polysaccharide from the type  $\beta$ - links glycosaminoglycans, having a structural function, such as chondroitin sulfates. It has the capacity to absorb more than 1000 times its volume in water.

That is why it is used in epidermis moisturizing the as it reconstructs the fibers that hold skin tissues, giving a better shape. With a very high viscoelasticity, it is a natural component part of the skin and is essential to fight aging and wrinkles due to its high moisturizing power.

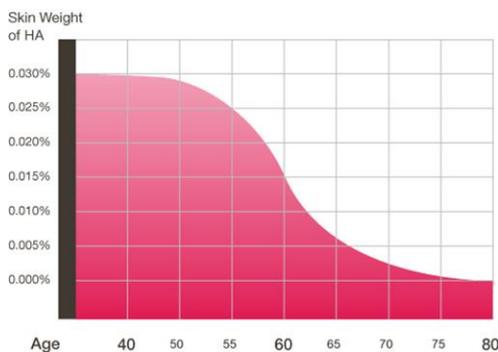




In the dermis, hyaluronic acid is the main component of the extracellular matrix (ECM). Fibroblasts are a cell type responsible for the production of collagen and elastin in the skin. ECM extracellular matrix is the space between the skin cells. This makes the skin soft, smooth and elastic.

Young skin (soft and elastic) contains high amounts of HA (Hyaluronic acid).

Hyaluronic acid contained is of biotechnological origin, has a molecular weight of 50-110 kDa:



- ✓ Retains moisture and elasticity in the tissues (moisture retention in the extracellular matrix (ECM))
- ✓ Protects against environmental stress
- ✓ Helps to reduce the appearance of wrinkles and expression lines.

