

OLIGO-HA

Anti-Aging, Moisturizing

Bioland
Nature, Science & Life

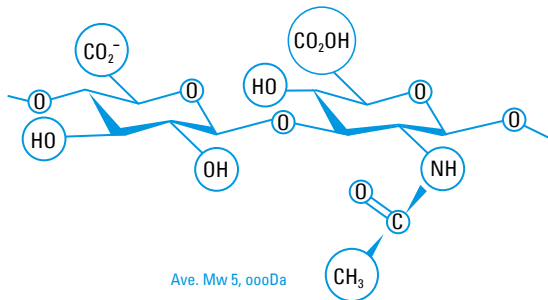
OLIGO-HA

Market Opportunities

Hyaluronic Acid (HA) is a naturally occurring, not sulfated glycosaminoglycan(GAG), existing in the connective, epithelial tissues and synovial joint fluid. It is one of the major matrix substances together with collagen and elastin strengthening the matrix.

HA has been widely used in cosmetic and personal care applications thanks to its significant effects on controlling tissue hydration, tissue regeneration, wound healing and other anti-aging aspects.

OLIGO HA & Molecular weight



Outstanding Features

Bioland has developed an oligomeric Hyaluronic Acid in order to maximize the beneficial properties of HA for the skin. In our skin permeability test on 3-D artificial skin, OLIGO HA (8KDa) showed 18 times higher permeability than normal HA (800KDa) giving better effects on cell proliferation, HAS-2 stimulation and collagen synthesis on in-vitro tests.

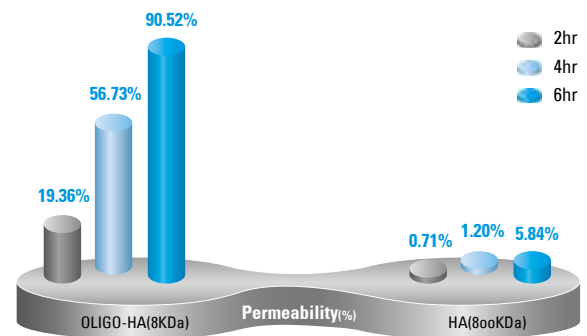
OLIGO HA with higher permeability also can hold the water in the intercellular matrix of the connective tissue, which significantly increases the elasticity of the skin.

Needs for HA supply

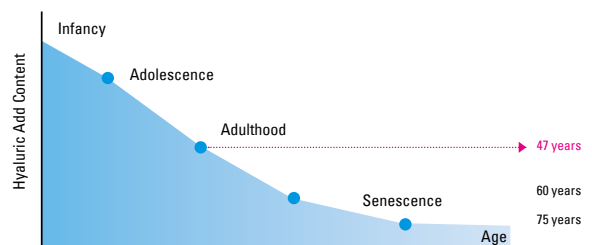
HA is produced in the skin mainly by fibroblasts and keratinocytes. However, the half-life of it in the skin is less than 1 day, which means 50% of it is metabolized within 24 hours. And our body produces less and less HA with aging causing skin aging. According to the reference, HA content in the skin starts rapidly decreasing at the age of 18 and becomes 50% at the age of 47.



Permeability test result on 3-D artificial skin



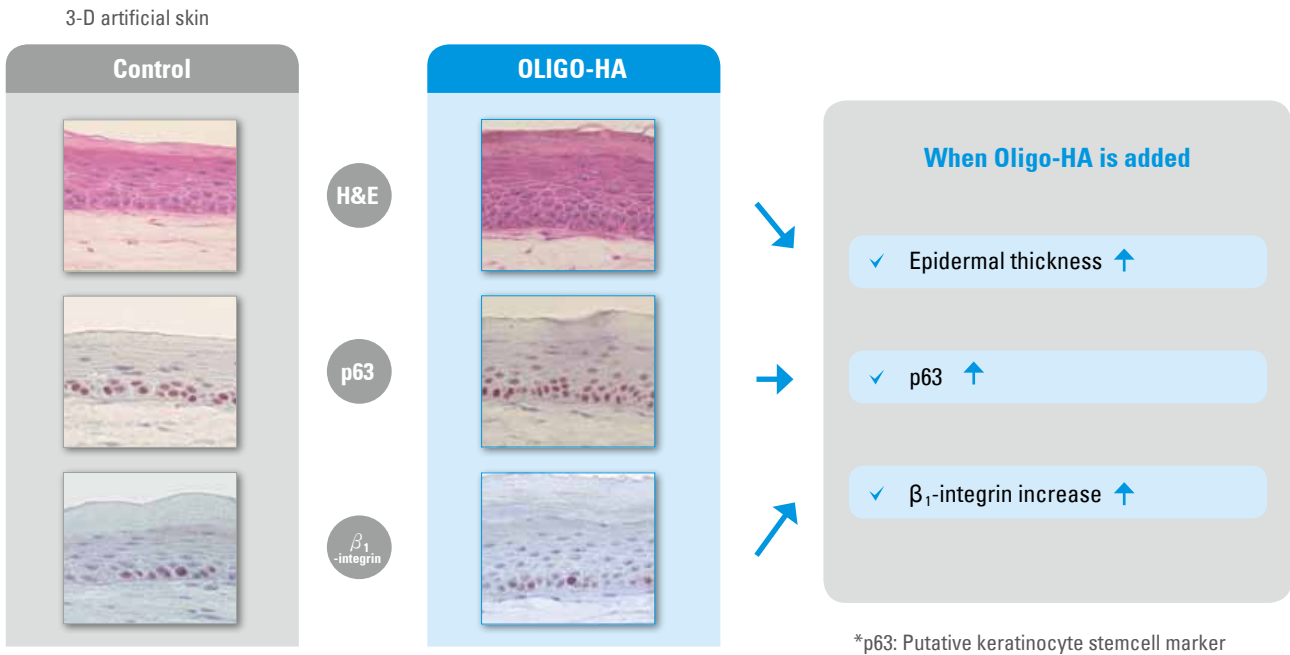
HA Content & Age



Ludger J.M. Meyer, Robert Stern: Age-Dependent Changes of Hyaluronan in human skin. *The Journal of Investigative Dermatology* 102: 385-389, 1994

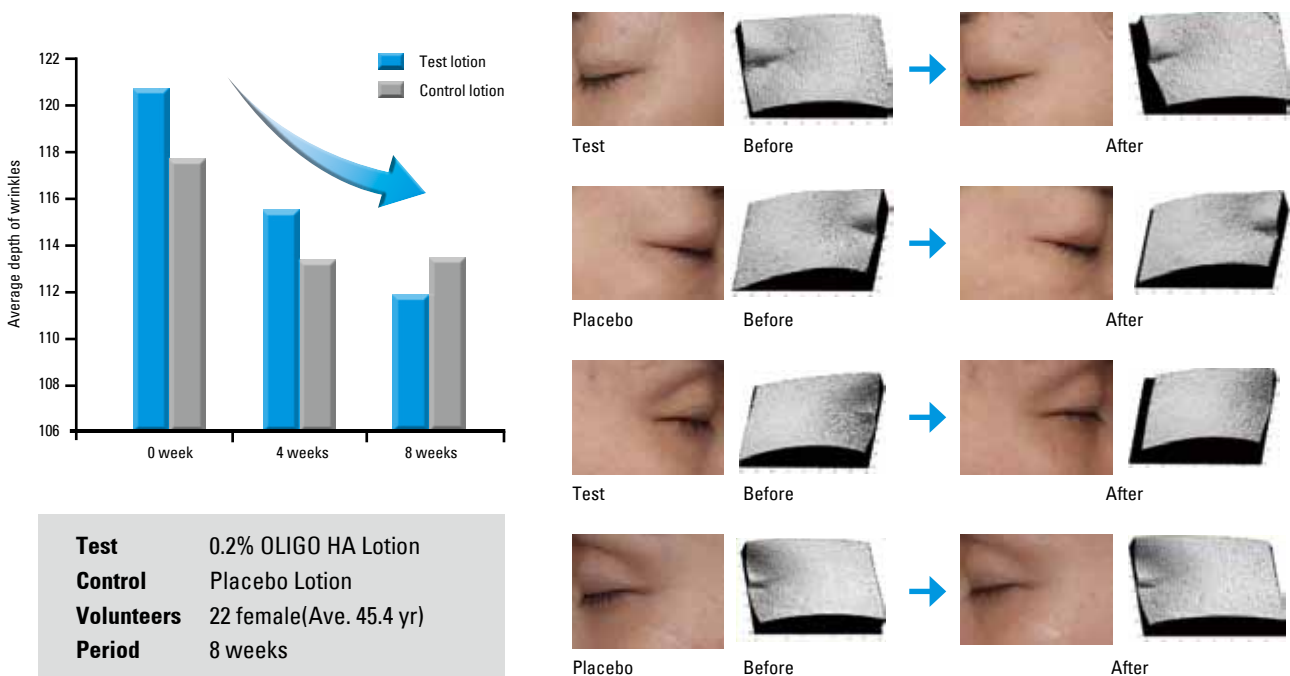
Ex vivo study

Epidermis regeneration & Stemness maintenance



Clinical study

Wrinkle reduction



Benefits of OLIGO HA

- ✓ Long lasting moisturizing effect by water holding in the intercellular matrix
- ✓ Quick improvement of fine wrinkle by epidermis regeneration
- ✓ Make keratinocytes younger and more active
- ✓ Other anti-aging properties: HAS2 stimulation, Collagen synthesis promotion

OLIGO HA Material Information

Brand name	Oligo HA
INCI name	Hyaluronic Acid
Preservatives	None
Solubility	Water
Recommended dosage	0.01~0.3%
Labels	Ecocert validated