

Hydro-Matrix Rice PGA

INCI: Glycerin, Water, Sodium Hyaluronate Crosspolymer, Propanediol, Hydrolyzed Rice Bran Extract, Polyglutamic Acid

March 25, 2013

DC3893

Cross-linked HA Anti-Aging Scaffold

Keeping skin properly hydrated is essential for maintaining a healthy, vibrant complexion. As aging occurs, the skin loses key structural components and protective barrier properties. This results in dryness, irritation and the creation of fine lines and wrinkles. Resources Of Nature offers many unique and effective agents intended to prevent and treat dry skin, restoring the skin's natural protective barrier properties, enhancing softness and elasticity and improving skin tone and texture.



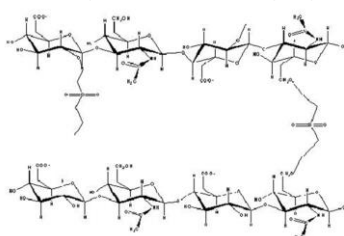
Hydro-Matrix Rice PGA is a liquid dermal delivery scaffold which provides maximum water binding capacity. It's prepared from fermentation products including cross-linked hyaluronic acid and polyglutamic acid. This hydro-scaffold is impregnated with natural rice peptides for a multi-collagen stimulatory gene expression. Hydro-Matrix Rice PGA (HMRP) offers unique benefits for anti-aging and moisturizing skin care applications.

BENEFITS

- ◆ Hydrating
- ◆ Supports active delivery
- ◆ Stable in acidic formulations
- ◆ Free radical scavenging
- ◆ Soothing
- ◆ Multi-collagen stimulation
- ◆ Conditioning
- ◆ Moisture retention
- ◆ Soft skin feel
- ◆ Restructuring

With its water-binding capacity 5x greater than high molecular weight hyaluronic acid, HMRP is ideal in formulations wherever moisturizing and anti-aging functions are required.

Sodium Hyaluronate Crosspolymer



Creates a hydrating 3-D scaffold

SAMPLE	WATER CONTENT
	Wc g/g
Cellulose	0.05
Carboxymethylcellulose	0.08
Xanthan	2.0
Hyaluronic Acid (HA)	3.0
Cross-linked HA	15.75

APPLICATIONS

- ◆ Skin Care
- ◆ Hair care
- ◆ Treatment
- ◆ Sensitive skin
- ◆ Anti-aging
- ◆ Sun care

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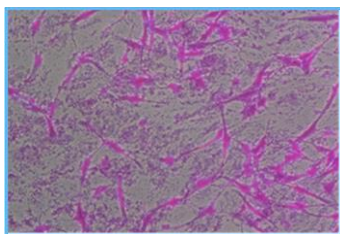
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TYPICAL PROPERTIES

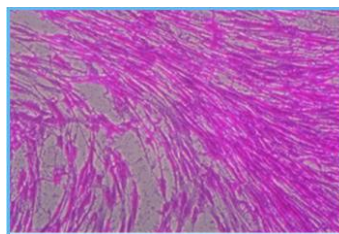
Appearance	Light brown liquid
Odor	Characteristic
pH	3.80 – 4.20
Specific Gravity	1.00 – 1.30
Loss of Drying	48.00 – 58.00

ASSAY

Protection Against Dehydration (In-Vitro): Effect of Different Pre-Treatment Conditions on Fibroblast Morphology Following Dehydration



cells pre-incubated in air



cells pre-incubated in HMRP

The pre-treatment of fibroblasts with Hydro-Matrix Rice PGA (HMRP) resulted in a significant improvement of protection from dehydration; up to 67.4%.

Anti-Aging Human Gene Expression (In-Vitro): Multi-Collagen Stimulatory Activity

HUMAN GENE EXPRESSION BY HMRP AS COMPARED TO CTR1 (0.5% use level, CTR1 = water blank)			
Position on array	Symbol	Fold Regulation	Comments
A10	COL15A1	2.06	Collagen XV is a fibril-associated collagen with interrupted triple helix important for tensile strength of the skin. It localizes to the dermal-epidermal junctions and is important for skin, muscle and micro-vessel integrity.
A12	COL1A1	1.79	Type I collagen is the most abundant proteinaceous ingredient of ECM in the skin, responsible for many of its key physico-chemical properties. Aging is characterized by reduction of type I collagen amount and an increase in its degradation and glycation, leading to fragmentation of its fibers.
B04	COL6A2	2.21	Type VI collagen is a structural element of ECM juxtaposing blood vessels and basement membrane. It forms extensive micro-fibrillar networks, which intercalate between type I collagen fibers, playing major roles in establishing and maintaining the structural and mechanical integrity of the skin.
B05	COL7A1	2.37	The type VII collagen fibril is restricted to the basement zone beneath stratified squamous epithelia. It functions as an anchoring fibril between the external epithelia and the underlying stroma.
B06	COL8A1	7.18	The gene product is a short chain collagen and a major component of the basement membrane.

FORMULATION GUIDELINES

Skin care recommended use level is 3-10%

HMRP can be added into emulsions and gels during processing or at the end during cool down mixing

Recommended formulation pH: 4.0- 8.0

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