



SCAR REPAIREX® ULTRA

Scar Repairex®



Scar Repairex®

SCAR TREATMENT CREAM

“ My acne from my teenage years left nasty “holes” in my skin. These are called Atrophic scars. I used Scar Repairex Ultra for 6 months. I am amazed at the difference. At last I have smooth skin. – Aketa Shah



Before Treatment



After Treatment



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Scar Repairex®



Scar Repairex® SCAR TREATMENT CREAM

“After plastic surgery on my face, I had scars left by the ear, which looked very red and raised. I applied Scar Repairex Ultra for about 3 months of using the cream, I have no scars showing. – Dorota Menzy



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Before Treatment



After Treatment



ACTIVE INGREDIENTS

ANTI INFLAMMATORY AGENTS

Salicylic Acid
2%

Bromelain 4%

Rutin extract
4%

Allantoin 2%

ANTI OXIDANTS

Ascorbyl Tetra-
Isopalmitate
5% (lipophilic to
plasma
membranes)

Magnesium
Ascorbyl
Phosphate 5%
(hydrophilic to
cytoplasm)

Retinaldehyde
0.1%

Ferulic acid
0.5% & Mixed
tocopherols 1%

Vitamins-
Niacinamide,
Panthenol, B6,
Retinyl
Palmitate

SCAR MATURERS

Dimethicone &
cyclopentasilox-
ane Base

Hyaluronic acid
5%



Improvement Of Scar Healing

- ❖ Scar Healing improves when length of inflammation, proliferation & maturation phases are reduced as shown in fig given on coming slide,



Improvement Of Scar Healing



1 **Silicone**
rehydrates
keratinocytes &
Inflammatory
Chemicals

2 **Salicylic Acid**
(Anti-
Inflammatory)
Long term
inflammation

3 **Rutin**
Inhibit
histamine
release which
Itching &
Inflammation

4 **Bromelain**
All
inflammation
promoters

5 **Vitamin E & Ferulic Acid**
(Anti-oxidant),
Scavenges damaging free
radicals thereby promoting
epithelialization & granulation
formation

6 **Hyaluronic Acid**
Stimulates Endothelial cell
proliferation & migration

7 **Magnesium ascorbyl Tetra
Isopalmitate**

(Vitamin C) Anti-oxidant &
promotes healthy collagen
synthesis



Salicylic Acid 2%

The
Benefits of
Salicylic
Acid for
Acne &
Aging Skin



SALICYLIC ACID 2% is present in Scar Repairex® Ultra because, Inflammation is strongly present in Keloids & hypertrophic scars as shown by:

- ✓ Increased inflammatory cells i.e. Neutrophils, Mast cells, lymphocytes & Macrophages. (REF 1)
- ✓ Increased Inflammatory cytokines (REF2)

REF1-Boyce DE,Ciaupolieu J,Ruge F et al.Inflammatory cell subpopulations in Kelois scars.Brit J Plas Surgery,2001;54:511-516.

REF2-McCauley RL,Chopra V,Li YY,et al.Increased Cytokine production in Black patients with Keloids.J Clin Immunol.1992;12:300-308.



Salicylic Acid 2%

The
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Aging Skin



Salicylic acid 2% inhibits two important components of inflammation:

- ✓ **Nuclear Factor Kappa B (NFκB)**-This cytokine signals Inflammatory gene Induction.
- ✓ **Reduces Prostaglandin PGE2**-Salicylic acid Irreversibly inactivates both COX 1 & 2 enzymes which increase PGE 2 levels in cells.

REF 3-Nuclear factor Kappa b: important transcription factor & therapeutic agent. J Clinical Pharmacol.1998;38:981-993.

REF 4-Samuelsson B,Granstrom E,Green E,et al.Prostaglandins.Annals Review Biochem 1975;44:669-695.



Salicylic Acid 2%

The
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SALICYLIC ACID 2%

In a small three patient study with symptomatic hypertrophic scars, each scar was divided into three equal size areas of untreated controls, Hydrogel alone, and hydrogel plus salicylic acid 2%.

After 2 months areas treated with Hydrogel plus salicylic acid were asymptomatic whereas the other groups continued being symptomatic.

REF5-Case studies. Use of Salicylic acid 2%&Hydrogel in limiting scar formation. J Burns Wounds. 2005 March 28,4:e6.Danielson JR, Walter RJ. St Marys Hospital, Hobart, Indiana, USA.



Rutin 4%



Rutin 4% is present to inhibit Histamine release which causes Itching & Inflammation in scars.

REF6-Arch Pharm Research.2008 Oct;31(10):1303-11.EPUB2008 Oct 29.Flavonoids inhibit histamine release&expression of pro-inflammatory cytokines in mast cells.CMRI, Dept of Pharmacology, Kyungpook National University, Daegu 700-422.Korea

Rutin was shown in Guinea pigs to reverse airways obstruction in induced asthma along with reduced Histamine, reduced neutrophils, eosinophils & lymphocytes but less effectively than dexamethasone. Therefore it is useful to inhibit histamine related inflammation as in abnormal hypertrophic & keloid scars.

REF7-Archives of Pharmacol Research Volume30,number 12,1599-1607,DOI:10.1007/BF0297730.Article:Anti-Asthmatic action of Rutin in conscious guinea pigs challenged with aerolized ovalbumin.



Rutin 4%



In addition Rutin acts on platelets by:

- ✓ Decreasing Platelet Aggregation
- ✓ Decreasing Thromboxane A2 aggregation
- ✓ Decreasing Inflammatory response.

REF 8-Journal of Thrombosis & haemostasis2005Feb,3(2):369-76. Flavonoids inhibit platelet function through binding to the Thromboxane A2 receptor, Guerrero JA, LozanoML, CastilloJ, Benavento Gaecia O, Vincente V,Rivera J. Source-Unit of Haematology & Clinical Oncology ,Centro Regional de Hemodonacion, Spain.



Bromelain 4%



Bromelain 4% has :

- ✓ Anti-oedema, anti-inflammatory, anti-coagulant properties.

It increases clot breakdown by increasing Fibrinolysis & reducing Fibrinogen.

- ✓ Kininogen, bradykin & prostaglandins reducing properties
(all inflammation promoters)

REF 9-Planta Med.1990 Jun;56(3):249-253.Pharmacology of Bromelain:an update with special regard to animal studies.Lotz-Winter H.

REF10-Cell Mol Life SCI.2001Aug;58(9):1234-

45.Bromelain:biochemistry,pharmacology&medical uses.Freie Universitat Berlin,Germany.



Bromelain 4%



Neutrophil migration which is the first cell of inflammation in Healing was tested. They are abundant in hypertrophic & keloids. Bromelain 4% topical. In vitro tests showed 40% reduction of Neutrophil migration to inflammation. In vivo Bromelain caused 50-85% reduction in Neutrophil migration in three different rodent models of leucocyte migration into the inflamed peritoneal cavity.

REF11-Bromelain treatment decreases neutrophil migration to sites of inflammation. David J Fitzhugh, SIQING Stan, Mark W Dewhurst, Laura P Hale. Dept of Pathology, DUMC3712 ,Duke University Medical Centre, Durham, NC27710 USA. Det of Radiation Oncology, DUMC 3455, Duke University.



Hyaluronic Acid 5%



Low molecular Hyaluronic acid 5% is present in Scar Repairex® Ultra which:

- ✓ Stimulates Endothelial cell proliferation & migration.
- ✓ Controls Inflammation & stimulates new blood vessel formation.
- ✓ Highly hygroscopic to hydrate the skin.

REF12-Annals of Dermatology & Venereology 2010 April;137 Suppl 1:S30-9.Hyaluronic acid structure, metabolism & implication in Cicatrisation.



Hyaluronic Acid 5%



- ✓ Hyaluronic acid when tagged with heavy hydrogen (3H) & applied to human forearms & hairless mice was found to travel to the deepest dermis within 30 minutes. Even large fragments up to 400KD were found in blood & skin.
- ✓ Hyaluronic acid is absorbed from the skin & rapidly through the Epidermis to allow associated drugs to be carried in high concentration to the dermis.

REF 13-Absorption of Hyaluronon applied to the surface of intact skin. Dept of Biochemistry & Molecular Biology, Monash University, Melbourne, Victoria, Australia. The Journal of Investigative Dermatology(1999,113(5):740-6)

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Vit A, C, E & B3



Combination of Vitamins A, C, E & B3 (Nianiamide) have an additive effect as Potent anti-oxidants & anti-inflammatory agents in the process of healing.

REF14-J Drugs Dermatol.2008 July;7 (supl) :s2-6.Topical Vitamins, Burgess C. Source-The Center for Dermatology & Dermatologic Surgery, Washington, DC, USA.



Vitamin C



Vitamin C is the most important healing anti-oxidant & collagen stimulator in skin. Two derivatives used in Scar Repairex® Ultra

- ✓ Ascorbyl Tetra Isopalmitate 5% (ATIP) Lipophylic-membrane bound.
- ✓ Magnesium Ascorbyl Phosphate 5% (MAP) Hydrophilic-cytosol bound.

In Aqueous systems i.e.. cytoplasm, MAP which is water soluble is more active than ATIP

In Lipid systems i.e. plasma membranes, ATIP is more active than MAP. Thus this combination gives total cell coverage for Vit C. Combining them both covers the plasma membranes & cytoplasm of the cell.

REF15-Skin Res Technol. Aug 2008;14(3):376-80. In Vitro & in vivo anti-oxidant activity and in vivo efficacy of topical formulations containing Vit C & its derivatives.



Vitamin C



VIT C actions on collagen which is essential for healing include:

- ✓ Essential co-factor in hydroxylation of Lysine & Proline for cross linking collagen to make the stable triple helix.
- ✓ Directly stimulates three different pro alpha chains in collagen.

REF 16-Bartlett MK, Jones CM, Ryan AE. Vitamin C & wound healing: Ascorbic acid content and tensile strength of healing wounds in human beings. N Engl. J. Med 1942. 226:474-81.



Topical Silicones



Topical silicones have a wide body of support for use in Hypertrophic & Keloid scars. Possible mechanisms of action include keratinocyte hydration or static electric stimulation.

In a Japanese study, Silicone cream was compared to Vaseline on 27 patients with split (14) & full thickness skin grafts.

- ✓ Pigmentation & hardness significantly reduced in 21 (78%) out of 27 cases.
- ✓ Reduced marginal hypertrophy in 10 (37%)
- ✓ Narrower marginal scar in 6 (22%)
- ✓ Fewer wrinkle 9 (33%)

REF17-Beneficial effects of silicone creams on grafted skin. Yukimasa Sawada MD(Associate professor),Ken Sone (Research Instructor) MD. British Journal of Plastic Surgery. Volume 45 ,issue 2,1992.



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Indication For Use



1 Keloids & hypertrophic scars with inflammatory indicators i.e. itching, burning or size change



2 Post burns – invariably leads to hypertrophic scars with contractures



3 Strong family history or past medical history of bad scarring.



4 After derma rolling for atrophic scars e.g. acne



5 Graft edge scarring.



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Conclusion

Scar Repairex® Ultra Works

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