elixir

THE ACTI-C TECHNOLOGY

The skin is a multi-functional organ, the largest in the body, and its appearance generally reflects the health and efficacy of its underlying structures. Being in constant contact with the external environment, the skin is subject to more insults than most of our other organs, and thus, it is where the first visible signs of aging occur. Normal skin contains high concentrations of vitamin C, with levels comparable to other body tissues and well above plasma concentrations, suggesting active accumulation from the circulation. Several reports have indicated that **vitamin C levels are lower in aged or photo-damaged skin**.

The high concentration of vitamin C in the skin indicates that it has a number of **important biological functions that are relevant to skin health**. Based on what we know about vitamin C function, attention has been focused on collagen formation and antioxidant protection; however, evidence is emerging for other activities:

- Skin fibroblasts have an absolute dependence on vitamin C for the synthesis of collagen, and for the regulation of the collagen/elastin balance in the dermis.

- Skin keratinocytes have the capacity to accumulate high concentrations of vitamin C, and this in association with vitamin E affords protection against UV radiation.

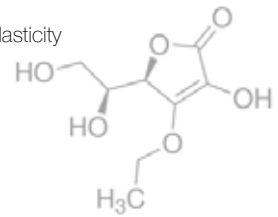
- Vitamin C influences keratinocytes gene expression of antioxidant enzymes, the organization and accumulation of phospholipids, and promotes the formation of the stratum corneum and the differentiation of the epithelium in general.

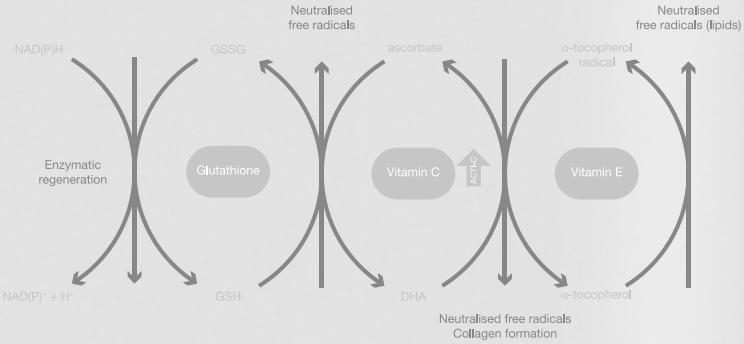
- The provision of vitamin C to the skin greatly assists wound healing and minimizes raised scar formation.

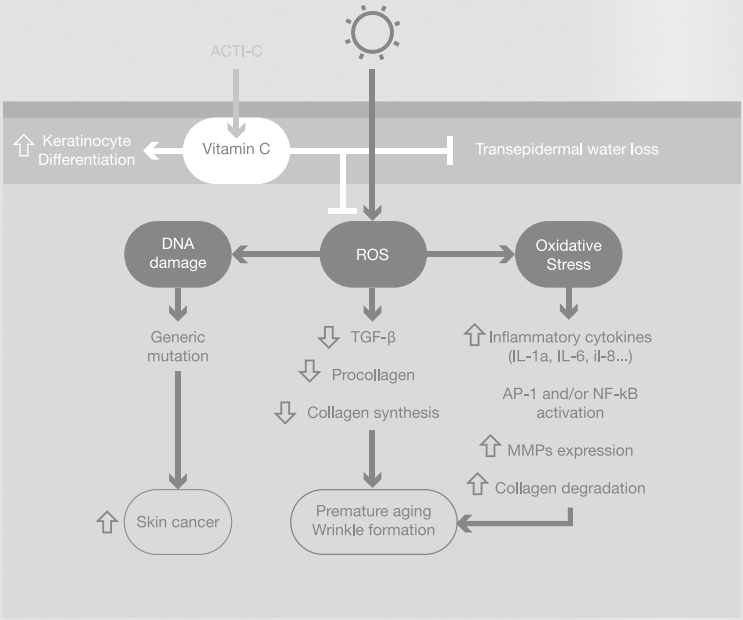
Some vitamin C can be delivered to the epidermal layer by topical application, although the efficacy of this is dependent on the formulation of the cream or serum used on the skin. Vitamin C, as a water-soluble and charged molecule, is repelled by the physical barrier of the terminally differentiated epidermal cells. It is only when pH levels are below 4 and vitamin C is present as ascorbic acid that some penetration occurs. A great deal of effort has been put into the development of ascorbic acid derivatives for the purpose of topical application. Such derivatives need to **ensure stabilization of the molecule from oxidation and also overcome the significant challenge of skin penetration**. In addition, they must be converted to ascorbic acid in vivo in order to be effective.

As a result, Sepai has developed a range of **special first aid solutions for specific problems with a multi-benefit Vitamin C derivative, as potent as Vitamin C with better stability and penetration. The VITAMIN C POWERED serums defy every possible skin challenge**.

Multi-benefit Vitamin C derivative:
- Even out skin tone
- Free radical scavenging: Protects skin from environmental and intrinsic stress factors
- DNA protection from UV
- Prevent photo-aging
- Collagen boosting effect: Improves skin complexion and enhances its elasticity
- Reduce dark & age spot
- Anti-oxidation properties
- Anti-inflammation
- Anti-pollution




Neutralised free radicals
Neutralised free radicals (lipids)
NAD(P)H
GSSG
ascorbate
α-tocopherol radical
Enzymatic regeneration
Glutathione
Vitamin C
ACTI-C
Vitamin E
NAD(P)+ + H+
GSH
DHA
α-tocopherol
Neutralised free radicals
Collagen formation


ACTI-C
Keratinocyte Differentiation
Vitamin C
Transepidermal water loss
DNA damage
ROS
Oxidative Stress
Generic mutation
TGF-β
Procollagen
Collagen synthesis
Inflammatory cytokines (IL-1a, IL-6, il-8...)
AP-1 and/or NF-kB activation
MMPs expression
Collagen degradation
Skin cancer
Premature aging
Wrinkle formation