Retinol, when applied to the skin, is converted by the skin enzymes into retinaldehyde and converted again into retinoic acid. Retinyl palmitate is converted to retinol, then retinaldehyde and then into retinoic acid.

Retinoic acid is a potent, multifunctional anti-ageing active because it interacts with receptors inside the keratinocytes, promotes cell growth, strengthens the epidermal protective function, reduces transepidermal water loss, protects collagen against degradation and inhibits the activity of metalloproteinases which are responsible for the degradation of the extracellular matrix. Retinoids are more potent than retinol because they contain a higher percentage of retinoic acid, hence, retinoids are often prescribed where retinol is preferred in cosmetic products.

All these intricate processes help cosmetic scientists and marketers with claims such as skin brightening, cell renewal, spot reduction, wrinkle reduction, acne treatment, oil and pore reduction and even skin tone. However, similar results have been obtained using **Hypskin** – a COSMOS approved bioactive from sustainably harvested botanicals.

When the results of 1.0% Hypskin was compared to 0.3% of retinol in clinical tests conducted over a period of 56 days, there was no significant statistical difference in the results. The reason for the much lower level of retinol used is the irritancy level of the retinol.

The stability of retinoids, retinol and retinyl palmitate are formulation dependent i.e. the vehicle (oil, emulsion or gel), the pH value (if applicable), and the presence of other antioxidants can affect the stability of the final products. These actives are sensitive to heat, light and oxidation so, once packaged and sold to consumers without knowing the storage conditions, there is no guarantee that the initial dosage level of the actives is still intact when the consumer buys the product or once it has been opened and being used. As a matter of fact, many of the cosmetic products tested in the study had less than one third of the claimed retinol or retinyl palmitate left after 6 – 12 months from date of manufacture.

Hypskin is stable in the presence of light, heat and oxygen. It is water-soluble, the stability is not formulation-dependent and it is cost-effective. The shelf life is two years.