Selco

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Adenosine

Description

Adenosine is an organic compound that occurs widely in nature in the form of diverse derivatives. The molecule consists of an adenine attached to a ribose via a β N9 glycosidic bond. Adenosine is one of the four nucleoside building blocks of the DNA and RNA, while cyclic Adenosine monophosphate (cAMP) is pervasive in signal transduction.

Extracellular Adenosine concentrations from normal cells are approximately 300 nM; however, in response to cellular damage (e.g., in inflammatory or ischemic tissue), these concentrations are quickly elevated (600 - 1200 nM). Thus, regarding stress or injury, the function of Adenosine is primarily cytoprotective, preventing tissue damage. Activation of A2A receptors produces a constellation of responses that in general can be classified as anti-inflammatory. Adenosine is believed to be one of those agents. It increases tissue repair as well as reconstruction and helps decrease skin roughness and wrinkles. Increasing Adenosine levels in the basal forebrain is also related to sleep. Methylxanthines (e.g. caffeine, theophylline or theobromine) have a purine structure and bind to some of the same receptors as Adenosine. They block the Adenosine receptors avoiding the neural activity to slow down. Furthermore, Adenosine has been shown to promote hair thickening comparable to minoxidil but with a higher satisfaction rate due to "faster prevention of hair loss and appearance of the newly grown hairs".

Efficacy

- reduces inflammations
- reduces wrinkles and fine lines
- enhances skin texture
- increases hair growth and thickness
- enhances skin night repair processes
- helps to release stress
- supports wound healing and skin repair

Appearance

white or almost white crystalline powder

INCI

Adenosine

Registration

CAS-No.....58-61-7
EC-No.....200-389-9

Preservatives / Stabilizers

none

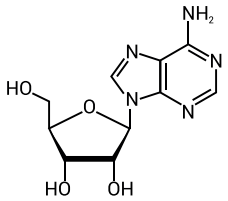
Nature needs no cosmetics,
but cosmetics need nature

Adenosine

Characteristics

loss on drying.....<= 0.5 %
specific rotation.....-68° to -72°
melting point..... 233 - 238 °C
purity (HPLC).....>= 98 %
residue on ignition.....<= 0.1 %

Adenosine | $C_{10}H_{13}N_5O_4$



molecular formula.....$C_{10}H_{13}N_5O_4$

Application

daily cosmetic products
creams and lotions
face masks
gels and ampoules
body care
hair care

Application concentration

skin care formulations.....0.04 – 0.5 %

Incorporation

Adenosine is soluble in water / 5 % pentylen glycol, water / 5 % glycerin and water / 5 % propylene glycol at RT. At 50°C up to 0.5 % is soluble in water (pH 6.2). It is unsolvable in pure ethanol, glycerin, pentylen glycol, propylene glycol or sunflower oil.

Toxicology

non hazardous in normal use concentration

Storage & Shelf life

Adenosine should be stored in a dry and light protected place at 10°C - 25°C. Keep container tightly closed. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

In closed original containers the shelf life is three years.

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