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Klinische Studie -
Wirkungsnachweis für das Produkt
“assuan”

Clinical Study – Effectiveness for the product
“assuan”

assuan – Produkt-Kurzbeschreibung

Die speziell für die Männerhaut entwickelte Creme assuan ist eine Kombination aus Pflanzenwirkstoffen der Bierhefe, Ringelblume, Propoli, Johanniskraut, Salbei, Eibisch, Arnika, Wildrose, Zypresse, Zaubernuss und Hydrosole. Die Haut enthält das volle natürliche Körperpflegeprogramm mit dem besten was uns die Natur zu bieten kann. Der Römer Plinius schrieb vor fast 2000 Jahren: "Die Ägypter benutzen den Schaum des Bieres, um die Frische ihres Teints zu verbessern". Besondere Anwendung fand es in der Zeit von Pharao Tutanchamun. Für einen reichen Vitamingehalt sorgen Hefe und Malz. So ist vor allem das Vitamin B6 zu finden, aber auch Vitamin B2 (Riboflavin), Pantothensäure und Niacin sind enthalten. Pantothensäure fördert den Energiestoffwechsel der Hautzellen und deren optimale Ernährung. Nicht umsonst wird diese Säure "Königin der Hautvitamine" genannt. Sie findet vor allem in Wund- und Heilsalben Anwendung.

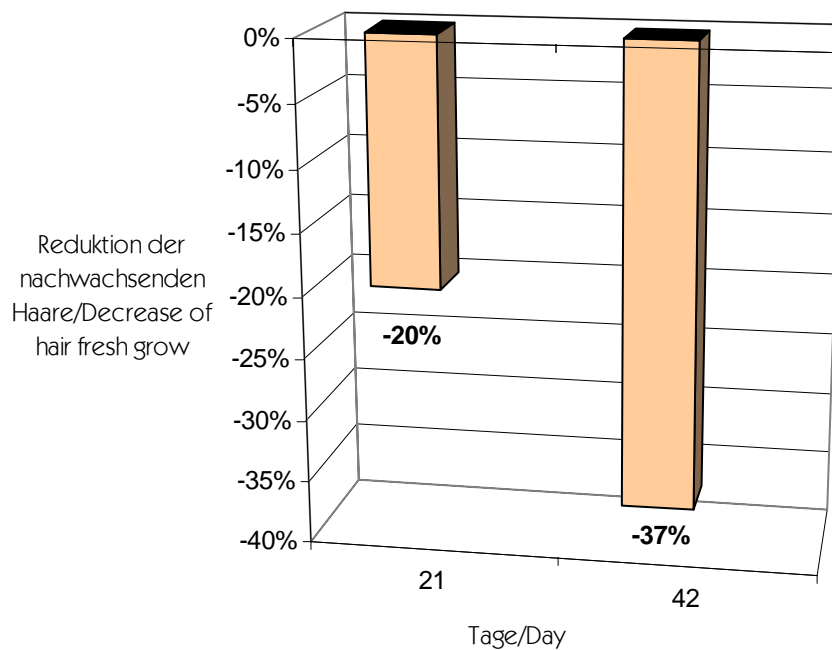
assuan –

assuan is an extra mild and revitalizing after shave cream - suitable for the sensitive skin - that hydrates and protects irritated skin after shaving, smoothes and relaxes it.

assuan contains the best nature has to offer: brewer's yeast, calendula, propoli, hypericum, sage, mallards, arnica and seawater which cares and moisturizes skin while hypericum and sage additively ease, relax and disinfect after shaving.

<p>KONZEPTION DER TESTS - Nachweis der Reduzierung des Haarwachstums</p> <p>Die Aktivität des Haarwuchses wurde bei 10 Freiwilligen im Alter von 20 bis 40 Jahre getestet.</p> <p>Nach einer Enthaarung mit Wachs wurde eine bestimmte Stelle am Bein mit einem Videomikroskop untersucht.. Die Anzahl der entfernten, kurzen und längeren Haare wurde gemessen.</p> <p>Die Auszählung der Haare beim behandelten und unbehandelten Bein erfolgte nach 0, 21 und nach 42 Tagen bei den 10 Freiwilligen.</p>	<p>GENERAL CONCEPTION OF THE TEST - Verification hair growth reduction</p> <p>The activity of the hair growth has been tested on 10 subjects of 20 to 40 old (medium age : 31 +/- 8 years).</p> <p>After a depilation with wax we choose on the video microscope an area on the leg. The number of close cropped, short and long body hair is determined.</p> <p>The total number of cropped and short body hair is determined on treated and no treated legs at day 0, at day 21 and at day 42 for the 10 volunteers.</p>
<p>ERGEBNISSE</p>	<p>RESULTS</p>
<p>Die Anzahl der nachwachsenden Haare nach der Behandlung mit assuan reduziert sich nach 21 Tagen um 20% und nach 42 Tagen sogar um 37%.</p>	<p>The number of regrowing hair is after the treatment with assuan reduced by 20% after 21 days and by 37% after 42 days.</p>

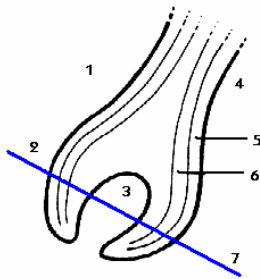
**Reduktion der nachwachsenden Haare nach assuan Anwendung/
Decreasing in the total number of growing again hair after assuan treatment**



Basics

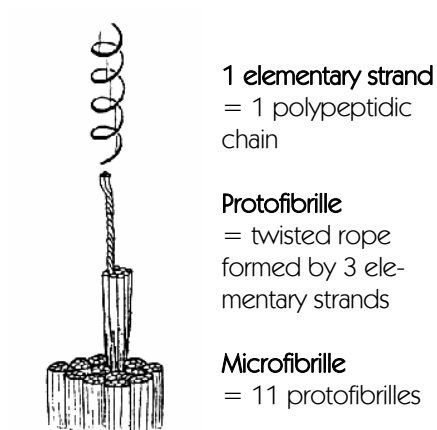
Hair Structure

In the bottom part of the hair bulb, there is an active zone of cellular division called hair matrix. At this level, each cell will divide every 39 hours giving birth to another cell which will be pushed upwards by other new cells and will progressively be keratinized in the superior part of the hair bulb and will produce the hair. The external part of the matrix will create the internal bag of the hair shaft which grows with the hair.



1: keratogenetic zone; 2: matrix; 3: papilla; 4: hair shaft; 5: external hair sheath; 6: internal hair sheath; 7: Auber line

The factors acting on the hair structure are either hormone related or linked to compounds acting directly on the keratine structure. Keratine is constituted by many a helices constituted by D or L amino acids. It is widely accepted that the a keratine helices are formed by parallel peptide chains disposed as a helices. Generally, 3 to 7 helices are wound up around each other and constitute a rope with 3 or 7 strands linked by disulfide bonds. It is therefore possible to denature keratine by acting on these disulfide bridges or on the conformation of the helices.



1 elementary strand
= 1 polypeptidic chain

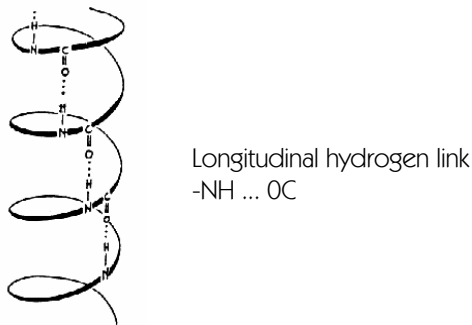
Protofibrille
= twisted rope formed by 3 elementary strands

Microfibrille
= 11 protofibrilles

Ultrastructure of hair shaft

BODY HAIR GROWTH INHIBITION

Various amino acids are able to destabilize or destructure a helices. Proline and hydroxyproline constitute the major ones implied in the destructure of this helix. In proline, the nitrogen atom is part of a rigid cycle and the rotation of the C - N bond is impossible and as there is no hydrogen atom on the nitrogen of the prolyl part of the peptide bond, no H bond is able to be formed with polyproline. So every time proline appears in the peptidic chain, it interrupts the helix by creating a curvature of the chain. Keratine destructure contributes to inhibit keratinization and consequently has a body hair growth action. assuan contains *Epilobium roseum* which is concentrated and we have a proline standardized extract, so it contributes to inhibit body hair regrowth by a helices destructure.



OCBody hair growth implies complex phenomenons where hormonal influence is crucial. It is well known that alopecia hits less frequently and at a lower extent women than men. In fact body hair like hair are stimulated by androgenic hormones and it is clear that anti androgenic factors are involved for limiting body hair growth. The anti androgenic effect of Saw palmetto extract targets it as a prime active to be incorporated in an hair growth product. [Saw palmetto extract inhibits 5 α reductase (Carilla & al. 1984, Pannunzio & al. 1987).]

The competitive bonding of Saw palmetto phytosterols with the androgenic receptors might be explained by the similarity of these compounds with the androgenic and oestrogenic structures (Ourisson & al., 1964, Schöpflin & al. 1966).

It has been proved that a Saw palmetto extract containing phytosterols acts on the intracellular conversion of testosterone by 5 α reductase and interacts with cellular androgenic receptors (Sultan & al. 1984).

The extract strongly reduces DHT formation and inhibits 5 α reductase cetosteroid which converts DHT into 5 a- androstane-3a 17 b diol. It is also a competitive inhibitor for the binding of androgenic hormones on their receptors. This anti androgenic effect of Saw palmetto is reinforced by the anti androgenic action of Pumpkin seeds which is known for reducing prostatic hypertrophy. This effect is also linked to the occurrence of phytosterols which are characteristic of this vegetable. These phytosterols may act by inhibiting 5 α reductase.

It has also been demonstrated recently that *Epilobium roseum* contains macrocyclic tannins which inhibit testosterone conversion by 5 α reductase (Ducrey & Hostettmann, 1995).

Due to its unique composition, Saw palmetto, *Epilobium roseum* and Pumpkin, assuan has all the necessary ingredients to limit testosterone production and therefore inhibit body hair growth.

Literatur – Literature

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