# Selco<sup>®</sup>

## Tranexamic Acid

### Description

Tranexamic acid has been entered on the "Model List of Essential Medicines" (EML) of the World Health Organization (WHO) - in particular for the treatment of trauma after traffic accidents or in the case of hemorrhagic risks and even fatal hemorrhage. Tranexamic is an amino acid. In dermatology the effects of Tranexamic acid have been known for a long time, namely in the context of pigment disorders. The first report on the treatment of melasmas with Tranexamic acid dates to 1979 and comes from an accidental observation after the oral administration of Tranexamic acid. In this case, the intensity of a melasma was significantly reduced within a period of two to three weeks.

Tranexamic acid prevents UV-induced pigmentation by interfering with the structure of plasminogen and preventing the binding of plasminogen to the lysine-binding sites of keratinocytes. Consequently, there is less free arachidonic acid leading to a reduced ability to produce prostaglandins and thus decreased melanocyte tyrosinase activity and melanogenesis. Blocking of the Sc-uPA pathway may be another mechanism through which Tranexamic acid reduces hyperpigmentation. It is found to be similar to tyrosine in the part of its structure, which can competitively inhibit the activity of tyrosinase.

### Efficacy

### Appearance

white crystalline powder

#### promotes lightening and an even skin tone on all skin types

- diminishes senile lentigo

- reduces hyperpigmentation

- reduces age spots
- minimizes liver spots
- reduces the degree of skin tanning after UV exposure

### INCI

Tranexamic Acid

### Registration

CAS-No	1197-18-8
EC-No	214-818-2

### Preservatives / Stabilizers

none

Nature needs no cosmetics, but cosmetics need nature

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### Characteristics

assay99 - 101 %	,
loss on drying<= 0.5 %	)
pH-value (5 % water solution)7 - 8	



#### TRANEXAMIC ACID

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molecular weight......157.213 g/mol molecular formula.....C $_{8}H_{15}NO_{2}$ synonyme: Cyklokapron, trans-4-(aminomethyl) cyclohexane carboxylic acid

### Application

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

### Application concentration

skin care formulations.....0.5 – 2 %

### Incorporation

Tranexamic Acid is soluble in water and in glacial acetic acid. It is practically insoluble in alcohol and in acetone. It should be added to the formulation in the cooling phase at the end of production (below 40°C). Should not be combined with sugars (possible Maillard reaction) or Copper peptides (oxidation of Tranexamic Acid).

Formulation advice, recommended pH 4 – 7.

### Toxicology

non hazardous in normal use concentration

### Storage & Shelf life

Tranexamic Acid should be stored in original sealed containers in a dry, well-ventilated and light protected place at temperatures between 10 – 25°C.

In closed original containers the shelf life is 36 months.

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