

Product Specification : Cosmetic Product 009

(ผลิตภัณฑ์เครื่องสำอาง)

Name : Hair Lotion Spray Formula 2 (Anti-hair loss)

แฮร์โลชั่นสเปรย์ สูตร 2 (ป้องกันผมร่วง)

Thai FDA Registration No. : 50-1-5902149**Active Compositions** : Containing natural products of cocktails from extracts of Thai medicinal plants including Sorghum/ ข้าวฟ่าง (*Sorghum bicolor*), Soy Bean/ ถั่วเหลือง (*Glycine max* (L.) Merrill) encapsulated in nanovesicles**Characteristics :**

- Physical appearance : Light brownish clear solution
- pH : 5
- Odor : Specific herbal odor
- Particle size and zeta potential : Particle size in nanosize range of 19.17 ± 1.01 nm with the zeta potential value of (-) 4.67 ± 0.33 mV

Standardization : Phytochemicals including linoleic acid (1.84 mg/g) and quercetin (8.22 μ g/g) are used as markers for HPLC fingerprints as the control of standardization and product uniformity**Biological activities :**

- Antioxidation activity by scavenging of DPPH free radical and inhibiting of lipid peroxidation at the SC_{50} and IPC_{50} values of more than 1000 mg/ml
- Anti-inflammation activity by the inhibition of denaturation by heat of albumin from egg white with the IC_{50} value of 10.61 mg/ml in comparing to the standard inflammatory drug, diclofenac which gave the IC_{50} value of 2.38 mg/ml

Animal study :

- Increase numbers of hair on aged black mice more than the negative control and the dutasteride groups after 6 weeks of topical application
- In histopathology observation, increase of hair follicle numbers of the aged black mice more than the negative control and the dutasteride groups after 3 and 6 weeks of topical application

- More numbers of growth and density of hair on rabbit's back in comparing to the negative control and the group applied with 5% minoxidil
- No irritation of the product when applied on the shaved rabbit's back

Clinical Performance :

- When tested in 15 human volunteers for 8 weeks in comparing to 1% minoxidil, most volunteers give an increased number of hair with decreasing of falling hair more than when applied with 1% minoxidil

Microbial Contamination : None

Safety Evaluation : No skin irritation in human volunteers

Stability : Physical and chemical stability by the freeze-thaw process (45 and 4 °C) of 6 cycles using linoleic acid and quercetin as markers indicating of linoleic acid and quercetin remaining of about 95 and 74% respectively after the test

Shelf life at 30 °C : 5 years

Indication : Spray on the hair, hair base or scalp where is hair loss or less hair with 1 minute massage every day, after shampooing in the evening without rinsing off and shampooing in the next morning. Use continuously for 1-2 months.

Packaging and Storage : 50 ml in a bottle with sprayer/ keep in dry and cool place protected from light

Precaution : For external use only, avoid inhalation and get into eyes. If there is any undesirable effect, wash out immediately and stop using.