



## 2 Peptibiotin

Alopecia is a complex process that depends on many factors and takes various forms. We distinguish, among others, androgenetic alopecia and anagen alopecia, which are most common in men and result from a sudden cessation of mitotic divisions in the hair follicle. There is also telogen effluvium, in which the hair growth phase is shortened (characteristic of women), and alopecia areata. The formula of 2-Peptibiotin combines three synergistic active ingredients that have a beneficial effect on both the hair bulbs, their follicles and the hair shafts themselves. Acetyl tetrapeptide-5 contained in the complex stimulates the synthesis of proteins in the extracellular matrix of the dermal papilla. It prevents glycation of collagen fibres, which leads to hair weakness and hair loss. It also increases the proliferation of keratinocytes in hair follicles, increasing the concentration of the adhesive protein laminin 5, which is very important in anchoring the hair in the root sheath and hair papilla. In this way, the hair maintains proper stability and resistance to mechanical and external factors. Another active substance found in the complex is a biomimetic peptide called Sh-Polypeptide-9 (CG-VEGF). It imitates the effects of vascular endothelial growth factor naturally occurring in the human body, which stimulates hair growth. It promotes the vascularization of the hair follicle by stimulating the angiogenesis process. By intensifying the blood supply to the scalp around the hair follicle papilla, the amount of nutrients and oxygen increases, which affects the proper hair growth cycle and prevents excessive hair loss [1-3]. 2-Peptibiotin Complex has been additionally enriched with biotin, which contains active sulphur molecules needed to build keratin. Biotin intensively nourishes weak, damaged and dry hair prone to loss. It makes it look healthier, stronger and thicker. 2-Peptibiotin strengthens, increases elasticity and shine, and also contributes to hair regeneration.

### INCI

Aqua, Glycerine, Sh-Polypeptide-9, Acetyl Tetrapeptide-5, Biotin, Sodium Benzoate, Potassium Sorbate

### indications

- alopecia
- hair loss and thinning
- reconstruction and regeneration of hair damaged and weakened by physical and chemical factors

### technical data

- clear, transparent liquid with a characteristic smell
- soluble in water
- pH 5,5- 7,5

### use

- recommended dosage 1-10%
- raw material added cold, at a temperature below 40°C

### advantages

- MOQ 1 kg
- Suitable for vegans and vegetarians
- ISO 16128 Natural Index is close to 1
- No PEGs, paraben-free, no GMOs
- Stable at temperatures from -14 to +40°C

### properties

- stimulates growth and reduces hair loss
- extends the anagen phase of the hair growth cycle
- stimulates microcirculation of the scalp
- noticeably improves hair thickness
- stimulates the production of keratin, which restores the strong and healthy appearance of the hair

### HAIR GROWTH STIMULATING SERUM

PHASE	TRADE NAME	%
A	Water	80,14
	Zemea Propanediol	5,00
	Cheladrem- SP*	0,10
	Glycerine	2,00
B	Verstatil PC	1,00
	Menthol	0,05
C	2-Peptibiotin	10,00
	Fragrance Composition	0,10
	Polysorbate 20*	0,50
	Coffee Extract*	0,10
D	24 h Hyaluronat*	1,00
	Purac FCC80 Lactic Acid	0,01

\*Poplawska Group

### technology

1. Add the ingredients of phase A to the main container and mix until a mass without lumps of solid substances is obtained
2. Weigh the ingredients of phase B in a separate container, heat gently to dissolve the menthol
3. Combine the mixture prepared in item 2 with the ingredients of phase C, homogenize and introduce into the main container, emulsify
4. Add the ingredient of phase D to the main container and mix

#### Literature:

1. Reynolds A J, Jahoda C A. Ann N Y Acad Sci1991;642: 226-241
2. Hill R P, Gardner A, Crawford H Cet al.Exp Der-matol 2013;22: 236-238
3. Yano K, Brown L F, Detmar M. J Clin Invest2001;107: 409-41