

# Growth Factors Complex

Growth Factors Complex is a concentrated complex of plant origin rich in glutamine, vitamin B9 and cellular growth factors: IGF-1, EGF, aFGF, bFGF and VEGF. Growth factors are proteins that are important for the processes of cell growth, division and differentiation. They bind to receptors on the cell surface, which initiates a number of reactions that influence the cellular response. The complex has a synergistic effect, stimulating the regeneration of both epidermis and dermis cells. It activates repair processes, has anti-aging properties, improves facial contours and helps keep the skin looking young for longer. Moreover, it strengthens capillaries, stimulates the angiogenesis process<sup>[1]</sup>, reduces wrinkles, stimulates collagen synthesis and accelerates the wound healing process<sup>[2,3]</sup>. Due to their broad spectrum of effects, growth factors are perfect for therapies that reduce scars, stretch marks, discolorations and symptoms of photoaging.

- EGF – epidermal growth factor
- IGF – insulin-like growth factor
- FGF – fibroblast growth factor
- VEGF – vascular endothelial growth factor

## INCI

Aqua, Lecithin, Acetyl glutamine, sh-Oligopeptide-1, sh-Oligopeptide-2, sh-Polypeptide-1, sh-Polypeptide-9, sh-Polypeptide-11, Bacillus/folic acid ferment filtrate extract, Sodium hyaluronate, Caprylyl glycol, Butylene glycol, 1, 2-Hexanediol

## properties

- regenerating
- repairing
- revitalizing
- firming
- increasing flexibility
- strengthening vessels
- anti-wrinkle
- rejuvenating
- moisturizing

## application

- recommended in face, body and hair care products

## advantages

- MOQ 1 kg
- Suitable for vegans and vegetarians
- ISO 16128 naturalness index close to 1
- Paraben-free
- No GMO

## use

- recommended use: 1-3%
- raw material used at the end of the process at a temperature below 40°C

## technical data

- light yellow liquid with a characteristic smell
- pH 5.5 - 7.5
- stable at room temperature
- water-soluble

## indications

- tired, grey skin that requires stimulation and regeneration
- mature skin with wrinkles that has lost its firmness and elasticity
- skin exposed to the harmful effects of external factors
- symptoms of skin photoaging
- acne scars and discolorations
- tendency to bursting blood vessels

## FACE MASK

PHASE	TRADE NAME	%
A	Water	61,10
	Flocare PSD 100	0,30
	Cheladrem- SP*	0,20
	Verstabil PC	1,00
B	Rheocare® XGN / Verdessence™ Xanthan	0,10
	Glycerine	4,00
C	SP Crodacol CS90-MBAL-PA-(RB)	2,00
	Shea Butter Care	3,00
	Waglinol 6016	3,00
	Argan Oil	2,00
	Avocado Oil	4,00
	Symbiomuls GC MB	1,00
	Olivem 1000	3,00
D	Emolid CC	4,00
	ECM Tripeptid*	3,00
	Rhodiola Calm*	3,00
	Growth Factors Complex*	5,00
	Fragrance Composition	0,30

\*Popławska Group

## technology

1. Add the ingredients of phase A and the premix of the ingredients of phase B to the main container, heat to 80°C and mix until a smooth mass is obtained.
2. Dissolve the ingredients of phase C in the auxiliary container at 80°C.
3. Add the ingredients prepared in item 2 to the main container and start homogenization.
4. Cool below 40°C, introduce the ingredients of phase D and mix.

### Literature:

1. Fiddes J.C., Hebda P.A., Hayward P., Robson M.C., Abraham J.A., Klingbeil C.K.: Preclinical wound-healing studies with recombinanthuman basic fibroblast growth factor. Ann. N.Y. Acad. Sci., 1991;638: 316-328
2. Gibran N.S., Isik F.F., Heimbach D.M., Gordon D.: Basic fibroblast growth factor in the early human burn wound. J. Surg. Res., 1994; 56: 226-234