

## THE HYDREPAIR® PLANT EXTRACT LABORATORY

As the largest human organ, the skin performs many different functions to protect and regulate. In order for the skin to perform these important tasks, it needs nutrients, trace elements and supporting skin care substances from both inside and outside. Frequent washing and disinfection places additional strain on the skin's protective function. Botanica has developed a purely natural HYDRepair® plant extract system which optimally supports moisturising and regenerating cosmetic formulations.

### HYDRepair® Matrix

The HYDRepair® system is based on a combination of bio glycerine and Bio Sempervivum juice (direct juice). The extracted ingredients of the required plant are dissolved in this matrix. Due to the high glycerine content, no additional preservative is needed. No water is added.

#### Bio Sempervivum juice: promotes wound healing, cell regenerating



The Sempervivum plants are cultivated in Switzerland according to controlled organic cultivation. The harvested fresh plants are cut in a short time and gently pressed in the region. The direct juice is filtered and immediately frozen. The short transport routes and regional processing result in a sustainable and valuable natural product.

Houseleek (*Sempervivum tectorum*) contains polyphenols, tannins, proanthocyanidins and a high diversity of flavonoids, which have been shown to have antioxidant, anti-inflammatory and antimicrobial effects [1, 2, 3]. By means of an in vitro scratch assay on human keratinocytes, a wound healing and cell regenerating effect of Bio Sempervivum juice was demonstrated, similar to that of Aloe Vera Bio juice, which was tested for comparison [4].

#### Bio glycerine: moisturizing

Bio glycerine is a natural component of animal and vegetable fats. It is used for various functions in cosmetics, mainly as a moisturizer [5]. Botanica uses only bio glycerine of vegetable origin and is suitable for vegan formulations.

### Manufacturing process of HYDRepair® 'C' G concentrates

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## 1. Selection of plants



There are no limits to creativity. You can choose your favourites from the huge Botanica selection of flowers, fruits, roots, seeds and leaves. We would be happy to advise you on your decision or make individual suggestions.

## 2. Extraction



Extraction of the dried plants takes place via a circulating organic alcohol/water mixture. In this way, both water-soluble and oil-soluble ingredients are extracted from the plant material.

## 3. Evaporation



In a further step, bio glycerine is mixed with the alcoholic organic extract. Via pressure and heat, the organic alcohol is evaporated and the ingredients are concentrated accordingly.

## 4. Completion



To complete the extraction in bio glycerine, 15% Bio Sempervivum juice is added. This homogeneous plant extract concentrate is self-preserving due to the high bio glycerine content.

# BOTANICA HYDREPAIR® 'C' G CONCENTRATE



After the external microbiological analysis the HYDRepair® 'C' G Concentrate is ready for use. Due to the natural and water-soluble components, the concentrate can be easily incorporated into various cosmetic formulations.

- ✓ Organic and natural cosmetics compliant
- ✓ Vegan
- ✓ 100% natural
- ✓ High organic value
- ✓ Coconut- and palm oil free
- ✓ Preservative free

## Literature

- [1] Alberti Á, Szőke É, Kéry Á, (2007). Evaluation of phenolic compounds in *Sempervivum tectorum* L. *Planta Med*, 73 – P 272.
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- [3] Kumar S. and Pandey A.K. (2013) Chemistry and Biological Activities of Flavonoids: An Overview, *The Scientific World Journal* Article ID 162750 <http://dx.doi.org/10.1155/2013/162750>.
- [4] Botanica Internal Documentation: *Sempervivum* Bio Juice (CH) P-00002997.
- [5] Becker, L.C., Bergfeld, W.F., Belsito, D.V., Hill, R.A., Klaassen, C.D., Liebler, D.C., Marks, J.G., Shank, R.C., Slaga, T.J., Snyder, P.W., et al. (2019). Safety Assessment of Glycerin as Used in Cosmetics. *International Journal of Toxicology* 38, 6S-22S

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