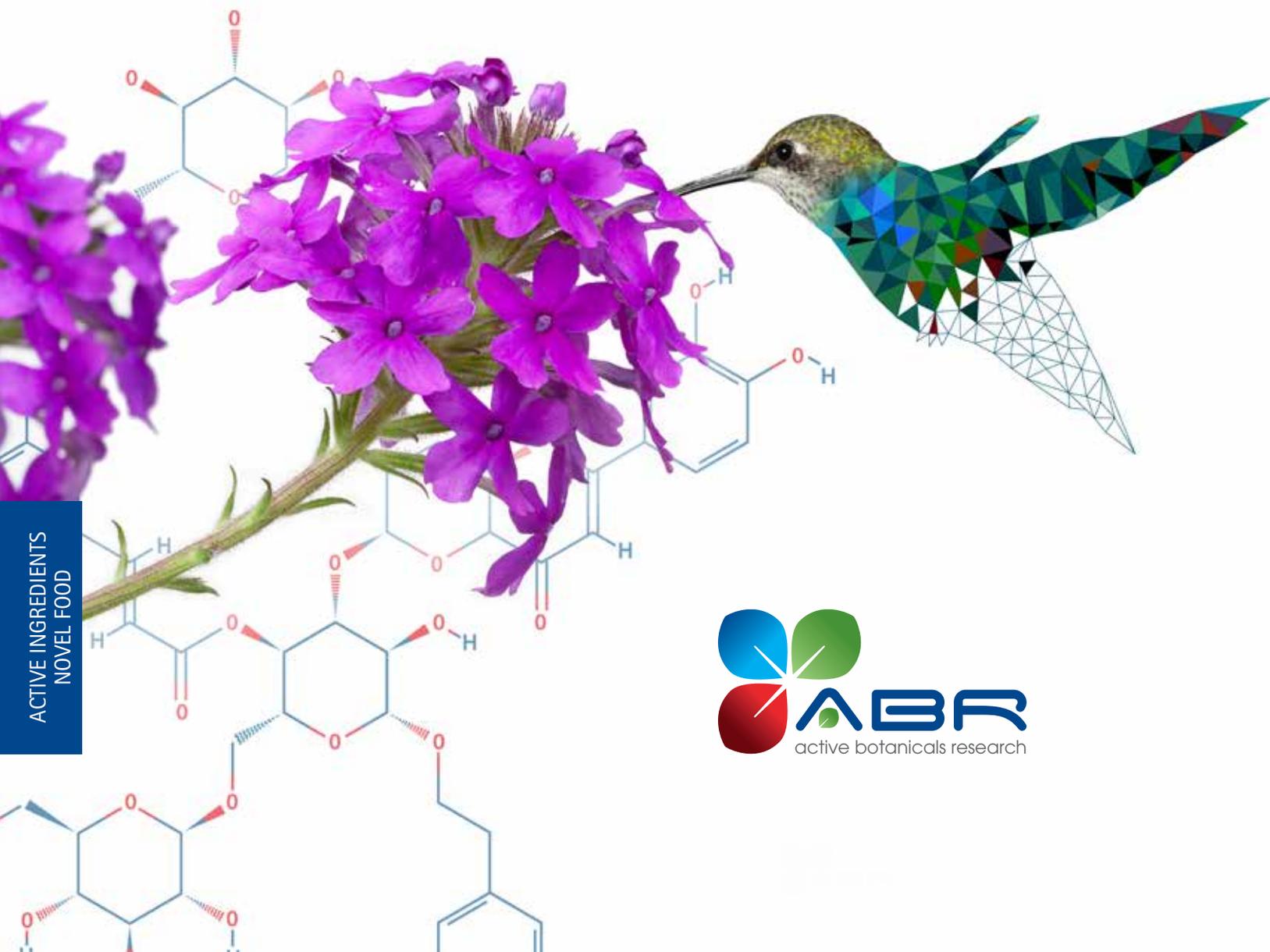


Inspired by nature...
driven by biotechnology!



ACTIVE INGREDIENTS
NOVEL FOOD



ABR

where nature meets biotechnologies

In the increasingly globalized market of botanical ingredients, where quality and standardization are the fundamentals to distinction, ABR mixes the passion for research with a sound background to meet new needs and find solutions. Founded in 2009 by professionals with a strong experience in Nutraceuticals and Nutricosmetics, ABR represents the junction between the innovation offered by biotechnology and classic production methods of actives.

As matter of fact, ABR developed a proprietary industrial platform for the production of active ingredients extracted from specific, non GMO, natural plant cells. A long story of pioneering collaborations with top international research centres and accredited laboratories is the basis of ABR success, committed to the production of unique products devoted to human health with particular care to preserve the nature and the environment.



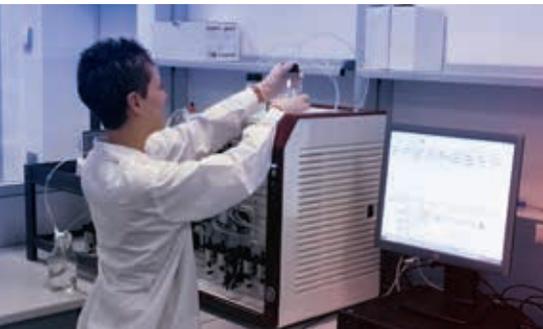
Natural biotechnology, the present and the future of actives

We are inspired by nature and entrust biotechnology to uncover the magic of botanical ingredients to support human health. We are a green mindset company that ideated new sustainable industrial processes to get the most out of smart plant cell cultures, respecting and preserving the environment.

A cutting-edge technology designed for the production of highly pure and active novel ingredients. Natural plant cell culture is the election technology to extract organic molecules with

standardized profiles in a fully controlled environment where the advantages become a must:

- No impoverishment of the soil and forests;
- Reduction in the use of hydric resources;
- Unlimited availability of ingredients
- No influence on seasonality;
- Free from pollutants, fertilizers, pesticides and aflatoxins.



Ajuga reptans extract

BACKGROUND

Ajuga reptans belongs to the *Lamiaceae* family native of Europe, Asia, Africa and naturalized in Oceania and North America. The most of *Ajuga* beneficial characteristics resides mainly in leaves and flowers to counteract fever, hemorrhage, biliary disorders, high pulse, ulcers and skin diseases.

Ajuga reptans species is nowadays particularly well known for its antibacterial, antimycotic, astringent, diuretic and antineoplastic properties.

The most important active ingredient extracted from *Ajuga reptans* is the phenylpropanoid **TEUPOLIOSIDE**.

Teupolioside is a secondary metabolite produced by the plant with defensive aim against environmental agents such as UV radiations.

Its scarce quantity in the whole plant is the reason for which this ingredient can be hardly secured with classical extraction methods.

TEUPOL 10P

A BOTANICAL INGREDIENT
NOVEL FOOD AUTHORIZED

TEUPOL 10P is the ABR Novel Food authorized active ingredient, titrated at 10% Teupolioside, extracted and purified from *Ajuga reptans* cell cultures.

TEUPOLIOSIDE

Biological effects

ABR conducted *in vitro* and *in vivo* studies that demonstrated Teupolioside antiinflammatory and antioxidative properties. Besides the ability to modulate testosterone-related problems, especially in juvenile acne and for the prevention of hair loss in androgenic alopecia, Teupolioside was proved to be effective in:

- Benign prostatic hyperplasia (BPH);
- Crohn's syndrome and gastro-intestinal chronic diseases;
- Improving the functionality of microvasculature.

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Echinacea angustifolia extract

BACKGROUND

Echinacea angustifolia is a herbaceous, flowering and perennial plant member of the *Asteraceae* family.

The root of Echinacea is greatly valued in ethnopharmacology and the sprouts and flowers activity was also known by North American ancient populations

who considered Echinacea as a versatile herb that contributed to fight infections, increase appetite and strengthen the sexual male organ.

Echinacea angustifolia species is nowadays particularly well known for its antioxidant and scavenging properties.

The most important active ingredient extracted from *Echinacea angustifolia* is the phenylpropanoid **ECHINACOSIDE**.

Echinacoside is a secondary metabolite produced by the plant as a difensive compound against pathogen agents.



ECHINAN 4P

A BOTANICAL INGREDIENT
NOVEL FOOD AUTHORIZED

ECHINAN 4P is a Novel Food authorized active, titrated at 4% Echinacoside, extracted and purified from *Echinacea angustifolia* cell cultures.

ECHINACOSIDE Biological effects

ABR conducted *in vitro* and *in vivo* studies that demonstrated Echinacoside antioxidative properties. Specifically, ABR is proprietary of a clinical trial on sport practitioners where the protective action of ECHINAN 4P is evident against lipoperoxidation related damages. Other clinical studies, in literature, showed also Echinacoside beneficial effects in:

- Fighting flu and flu-like infections;
- Immunosuppressive conditions;
- Reducing risk of medical complications in upper respiratory tract infections;
- Modulating EPO production without affecting red blood cells count.

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Lippia citriodora extract

BACKGROUND

Plants of genus *Lippia* were and are still generally used by South American indigenous populations and traditional Chinese medicine for the treatment of respiratory disorders such as cold and flu, cough and bronchitis. *Lippia* is used

in medicine as relaxant and carminative herb that counteracts stress related conditions, especially those that affect the stomach, as well as dyspepsia, headaches, neuralgic pain and vertigo.

The most important active ingredient

extracted from *Lippia citriodora* is the phenylpropanoid **VERBASCOSIDE**.

Verbascoside (also known as Acteoside) is a secondary metabolite produced by the plant as defensive molecule against insects and parasites.

ACTEOS 10P

A BOTANICAL INGREDIENT
NOVEL FOOD AUTHORIZED

ACTEOS 10P is a Novel Food authorized active, titrated at 10% Verbascoside, extracted and purified from *Lippia citriodora* cell cultures.

VERBASCOSIDE

Biological effects

ABR conducted *in vitro* and *in vivo* studies that demonstrated Verbascoside anti-inflammatory properties. Specifically, ABR is proprietary of a clinical trial on smokers where the protective action of Verbascoside against oxidative stress is evident. Verbascoside also demonstrated relevant effects in the reduction of symptoms in chronic pathologies such as:

- Arthritis;
- Hypertension;
- Oxidative stress;
- Parkinson's disease;
- Alzheimer's disease;
- Allergy type 1;
- Intestinal mucosytis;
- Estrogenic mediated diseases.

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ACTEOS 10P

Customized Botanical Actives

ABR makes its cell cultures platform, the company main asset, available to any customer who requires specific customized products. Product customization helps brands boost sales and differentiate to competition. ABR innovative system guarantees a relative short time project design and a smooth production scale-up with standard price compared to classic industrial extraction methods. The average time to obtain stable cell lines

for large scale productions of customized ingredients is 18 months and NOVEL FOOD registration takes around 24 months. Every new project is configured as a step by step process of research, development and industrialization in which the customer is always brought in.



What's next... meeting customers expectation



CUSTOMIZATION



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