

NOVEL ELICITORS TO INCREASE PRODUCTION OF RESVERATROL

P PATENTED TECHNOLOGY



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ABSTRACT

It has been developed a simple biotechnological method to obtain and accumulate high amounts of antioxidant resveratrol from natural resources.

It has been optimized plant cell culture conditions in bioreactors in order to obtain more than 4 grams of resveratrol per litre of culture, easily to extract and purify.

The research group is looking for companies interested in acquiring the technology for commercial exploitation.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

Resveratrol is found in grapevine and other kind of products derived from it (wine, must, etc.) in limited quantities that requires complex processes to recovery it. In this sense, it is important to have an alternative natural source which allows obtain it in high quantity to satisfy international demand.

The main advantages of this technology versus currently are the following:

- Accumulation of resveratrol is mainly extracellular, so its extraction and purification is really easy.
- It is not necessary to lyse live cells to recover resveratrol.
- Cell culture can be used several cycles to continue production.
- Its average productivity is more than 4 grams per liter of fresh culture.
- It is a sustainable technology because it does not exploit a natural resource.
- It is an unlimited source of raw material.
- Its production does not depend on climatic, seasonal or geopolitical factors.
- Cell cultures can satisfy resveratrol demand at any time and any quantity.
- This technology is environmentally friendly because waste generation is insignificant compared with extraction from wine by-products.
- Few waste generated, such as antioxidant proteins or stem cells, are potentially recoverable in cosmetics, nutraceuticals, etc.
- Important efficiency of the process allows a high production of resveratrol with low consumption of raw materials.
- Trans-resveratrol (bioactive molecule of interest) is generated almost exclusively (> 98%), compared to cis-resveratrol (1-2%).
- Extract obtained has a high purity in resveratrol (> 70%).

MARKET APPLICATIONS

Resveratrol is a biologically active substance with antibiotic and pharmacological broad-spectrum activity. It has demonstrated benefits on

health, and for this reason, it is desirable its inclusion in human and animal diet. Furthermore, it constitutes an interesting way to reduce the incidence of cancer and cardiovascular diseases. Moreover, it is effective to prevent atherosclerosis and as anti-inflammatory agent, antioxidant, vasodilator and platelet antiaggregate. Therefore, it provides nutritional and therapeutic benefit in the following industrial sectors:

- Cosmetics
- Nutraceuticals
- Pharmaceuticals
- Medicine
- Biotechnology
- Food industry
- Dietary supplements
- Feed supplements

COLLABORATION SOUGHT

Research group is looking for companies interested in acquiring this technology for commercial exploitation through:

- Licensing agreement.
- Funding opportunities to develop new applications.
- Scaling-up industrial level.
- Fitting specific needs of the companies.
- Developing R&D projects.

Agreements on technology transfer or knowledge transfer.
