

# Molecular method for the authentication of Echinacea species



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## Invention



The present invention relates to a method for identifying material from *Echinacea purpurea* in a sample, distinguishing it from material from very similar species such as *Echinacea pallida* and *Echinacea angustifolia*, the reagents needed for this method and the kit to make it.

The species of perennial plants belonging to the *Echinacea* genus are generally used in phytotherapy for their antiviral, immunostimulating and antibacterial properties for internal use, while for external use their anti-inflammatory, purifying, decongestant, toning and healing properties are known. However, it is known that the different species of *Echinacea* produce different substances, in different quantities and in different parts of the plant. The known methods of authentication of the species are applicable only to the intact plant and, therefore, unsuitable for the validation of the sample on the market, after the processing and production process; other methods devised for finished products, on the other hand, are not able to differentiate with a good degree of certainty the most used varieties (*E. purpurea*, *E. angustifolia*, *E. pallida*). The patent overcomes the aforementioned limits by identifying a specific molecular marker that allows the presence of *E. purpurea* derivatives in a sample of plant products, including processed ones, to be unequivocally identified, or to distinguish plant material belonging to plants of this species by means of a rapid analysis of simple nuclear DNA present in the sample.

Drawings  
& pictures



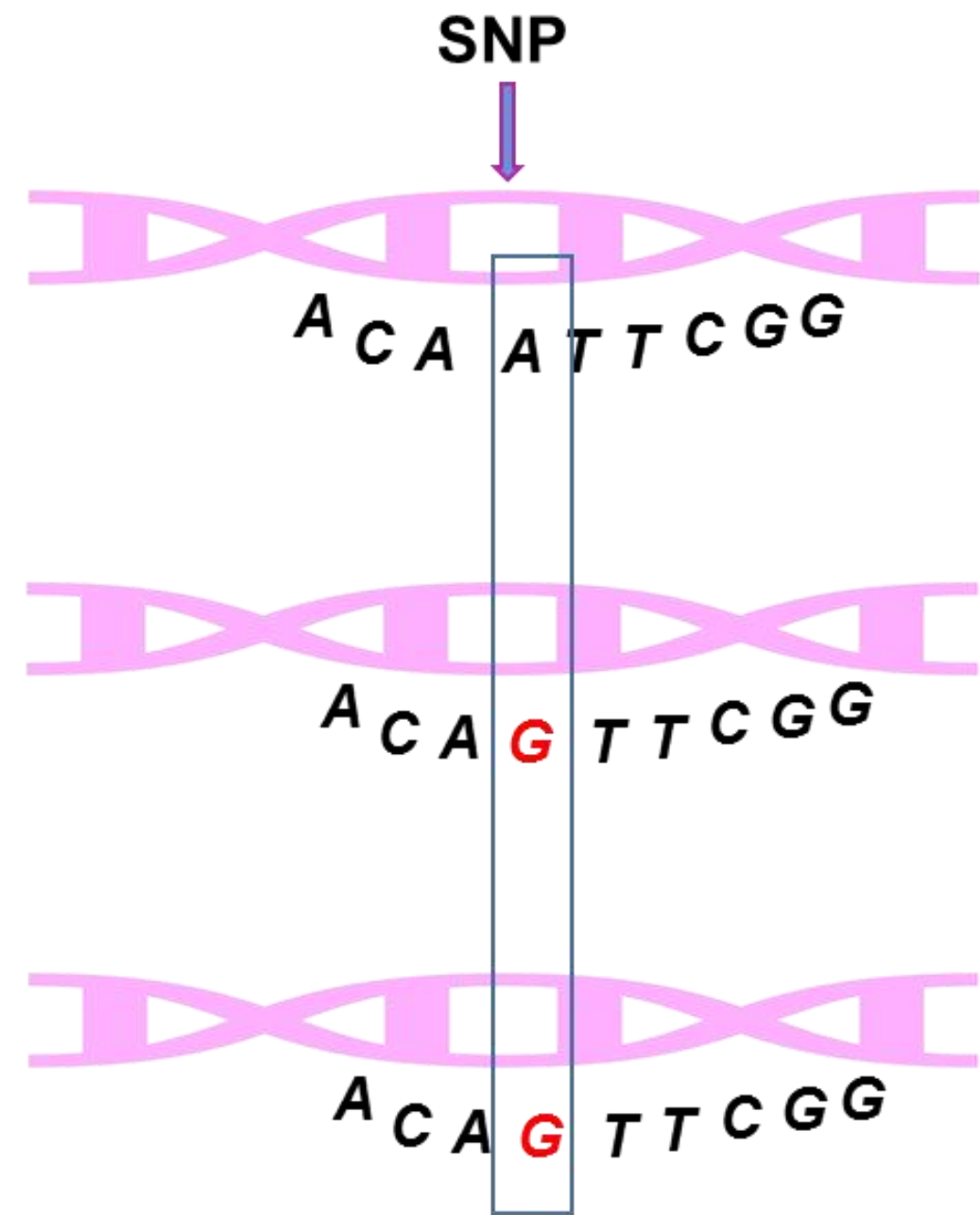
*E. purpurea*



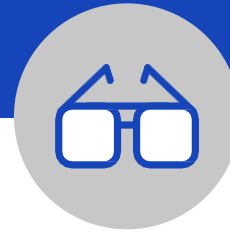
*E. angustifolia*



*E. pallida*



## Industrial applications



The advantages of the technology consist mainly in the certain identification of industrially processed genetic materials by means of an easy, fast and reproducible method of analysis.

The industrial application of the invention is intended for all those companies in the pharmaceutical, cosmetic and food sectors that need to recognize and distinguish the three most commonly used species on the market (*E. purpurea*, *E. angustifolia*, *E. pallida*) for the preparation of products with therapeutic activity. The invention also finds application in public and private certification, inspection and control systems as an anti-fraud system to identify products containing *E. pallida* and / or *angustifolia* instead of *E. purpurea*.

## Possible developments



The patent is available under an exclusive or non-exclusive license or sale. The license are available for the entire remaining term of the patent titles.

The research group is available for new research activities in collaboration and on behalf of third parties, technical insights, scientific advice, also aimed at raising the TRL of technology.

The TRL of the invention is 5.

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