CSIC has generated a natural enzymatic extract from a grapevine fungus that, applied after fermentation, reduces the concentration of biogenic amines in wine. The extract is obtained by filtration of the culture medium. Histamine content is reduced up to 90% in white wine and tyramine and putrescine are completely degraded in red wines. Wine-makers or food additive producers interested in applying or manufacturing the extract under a patent licence are sought.

An offer for Patent Licensing

**A enzymatic detoxifying extract**

Biogenic amines are produced in food during fermentation, being toxic at high concentrations, especially for sensitive people who are deficient in amine oxidase enzymes. Current methods to prevent its formation are applied before fermentation and can give rise to alterations in the final characteristics of the product.

A research group has used a detoxifying enzymatic extract after fermentation to degrade the biogenic amines already formed. The extract is obtained from a *Penicillium* strain isolated from grapevine. The amino-oxidase activity of this strain is induced by adding an amine (histamine, tyramine or putrescine) to the culture medium. The extract is obtained by simple filtering of the medium.

The extract was tested in wines with pH= 3.2-4.5, and histamine content was reduced up to 90% for red wine and up to 40% for white wine. Complete degradation of tyramine and putrescine was achieved in red wine.

**Main applications and advantages**

- The extract comes from a natural source, facilitating the application in the food industry
- Its production and application are inexpensive, simple and safe for the consumer
- It can be applied at the end of the fermentation, when the amines are formed, contrary to the existing methods which are directed to the prevention of its formation and may result in altered fermentation leading to poorer final quality
- Reduction in the free amines is very effective, reaching decreases up to 90% of histamine and complete elimination of tyramine and putrescine
- It is able to eliminate amines at pH values lower than 4, making it ideal to be applied in wine.
- The process has been tested in wine, but could be applied in other fermented beverages or foods, as it is acting at pH lower than 4

**Patent Status**

Priority established by a Spanish patent application
PCT application filed

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