



## ISOLATION AND SELECTION OF STRAINS FROM CITRUS FOR USE IN BIOTRANSFORMATION OF (+)-VALENCENE

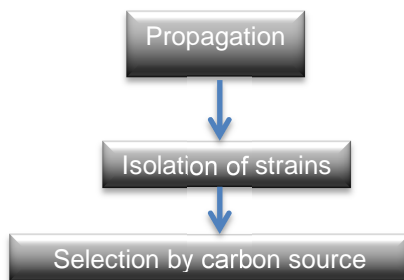
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**Introduction.** It has been reported that several microorganisms (*P. sapidus*, *P. ostreatus*, *P. solitum*, *T. harzianum*, *A. niger* y *F. culmorum*)<sup>(1,2,3)</sup> have enzymes suitable for biotransformation of (+)-valencene to (+)-nootkatone. These extracellular enzymes are type dioxygenases.

The aim of this work was to isolate strains from citrus peel from for later use as biocatalysts for allylic oxidation from (+)-valencene.

**Methods.** Citrus fruit which we worked were three: Lemon, tangerine and orange. The experimental strategy was as follows:



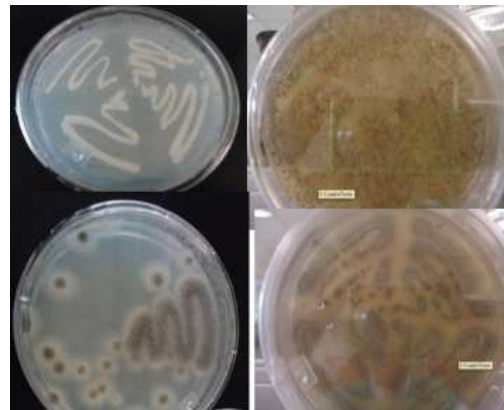
Cuts were made from the peel of fruits and then placed in Petri dishes, after cotton was placed in the Petri plates to retain moisture at 30°C, **Fig 1.** After obtaining several colonies, was continued isolation. PDA agar was used at 30°C for isolation. Finally we selected microorganisms that have the ability to grow in defined medium using orange peel as source of carbon.



**Fig.1** Culture of citrus fruits, 30°C pH free.

**Results.** Was found in the early cultures of microorganisms a variety of fungal and yeast strains. In order to isolate strains were subcultured until get axenic cultures. In Fig 2.

shows yeast and fungi that have the ability to grow on a defined medium using orange peel as carbon source. This feature allows us to assume that they can produce extracellular enzymes that can do allylic oxidation of valencene.



**Fig 2.** Strains isolated from citrus fruits.

From isolates were identified morphologically one that that could be *Apergillus niger*, this variety has been reported by Hashimoto<sup>(2)</sup> in the biotransformation of (+)-valencene to (+)-nootkatone. Morphologically identified another strain *Chaetomium globosum*<sup>(4)</sup> has also been reported with this biotransformation capacity.

**Conclusions.** Eight strains were obtained including three yeast and five fungi. It was found that all isolates can grow in minimal medium using orange peel as substrate

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