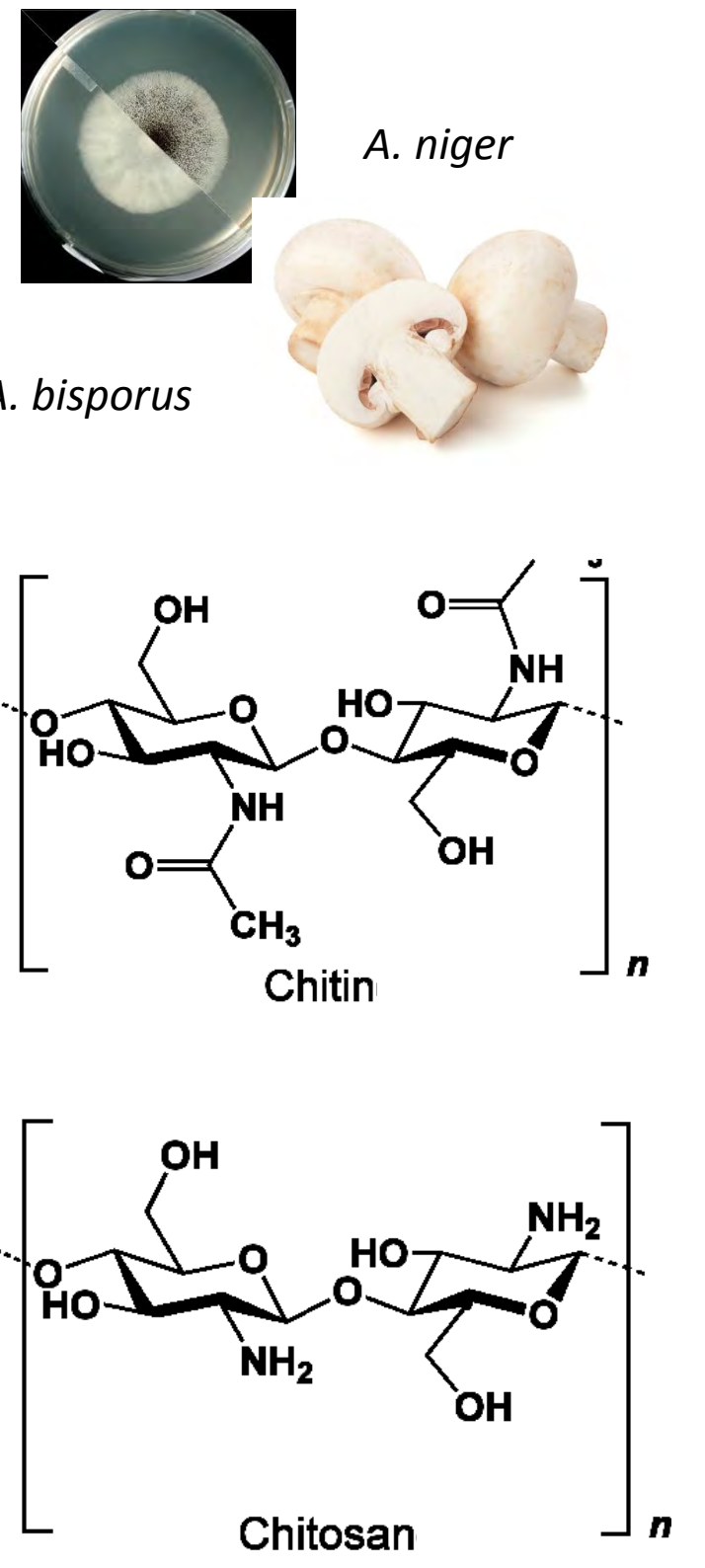


# Research on the origin and the side effects of chitosan stabilizing properties in wine

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Fungal chitosan is a polysaccharide made up of glucosamine and *N*-acetyl-glucosamine and derived from chitin-glucan from *Aspergillus niger* or *Agaricus bisporus*. It has been authorized in 2009 as an antiseptic agent in wine (OIV). At the maximum dose of 10g/hl, it was shown to efficiently eliminate *Brettanomyces bruxellensis*, a spoilage agent in red wines. Although fungal chitosan is highly renewable, biocompatible (ADI equivalent to sucrose) and non-allergenic, winemakers very often prefer to use sulfites (SO<sub>2</sub>), though they are classified as priority food allergens. Indeed, fungal chitosan appears as a poorly reliable product because of many conflicting reports and advices on its efficiency and on its side effects towards beneficial wine microorganisms or wine sensory profile. These contradictions could be explained by the heterogeneity of the fungal chitosan lots traded, wines diversity (chemical composition, winemaking itineraries), but also, by the recently highlighted huge genetic diversity prevailing in wine microbial species.



## PARTNERSHIP

The CHITOWINE project (ANR 17-CE21-0006) is based on the close collaboration of three academic partners (a, b, c), an industrial partner (d) and a technology transfer unit (e).



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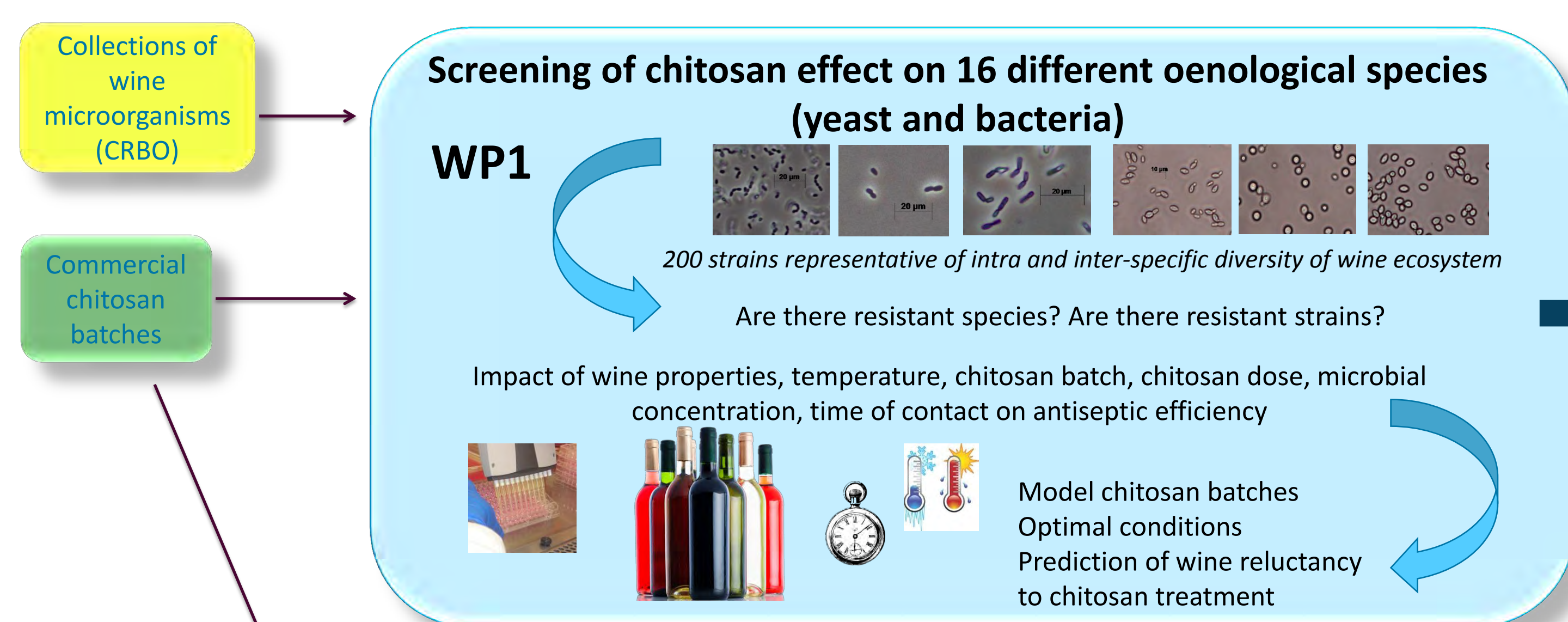


<sup>c</sup> UMR 1083 Sciences pour l'œnologie, INRA, SupAgro, UM1, 2 place Viala, F-34060 Cedex Montpellier



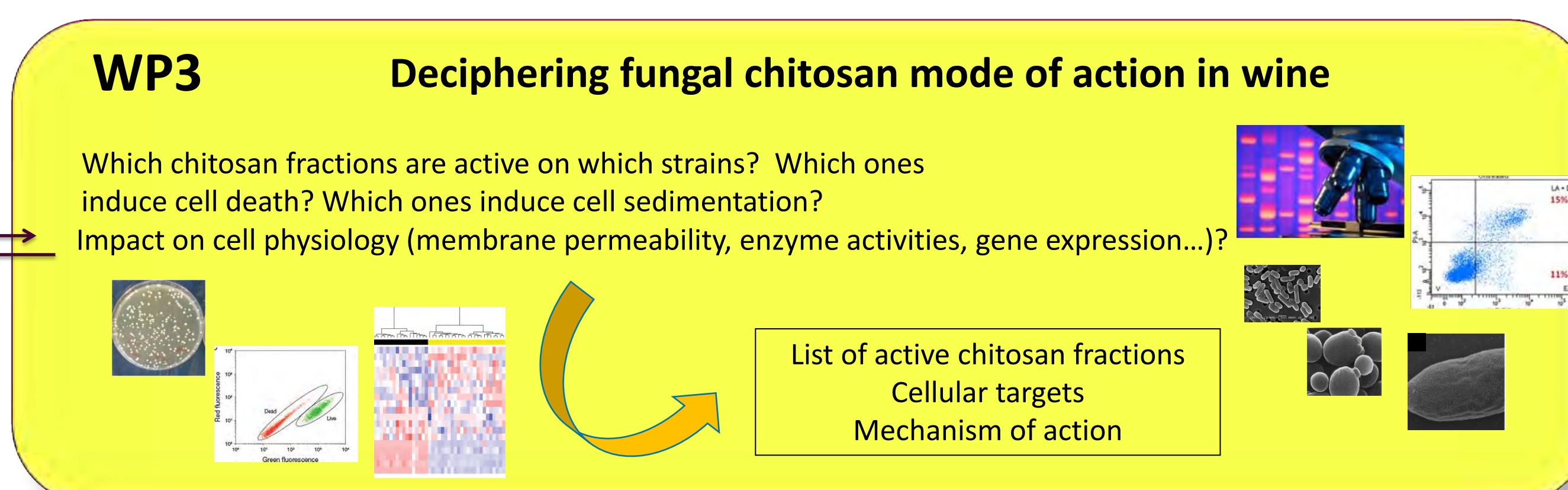
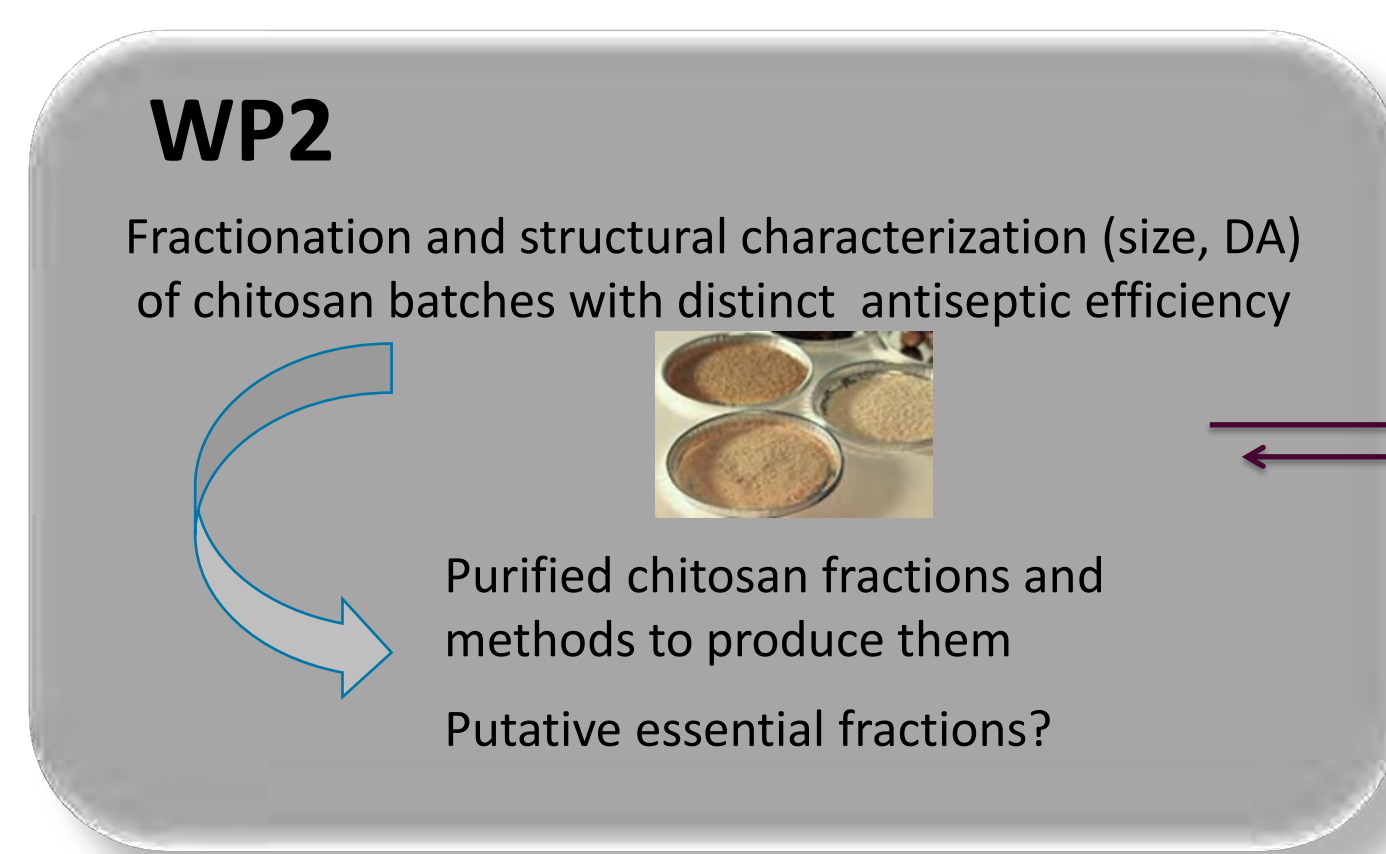
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## AIMS and METHODOLOGY



CHITOWINE aims at

- better defining the spectrum of fungal chitosan in wine
- determining chemical characteristics and extrinsic reaction parameters essential for antiseptic activity
- Identifying molecular targets of chitosan ,
- understanding the sensitivity differences observed between species and between strains in the same species.
- Proposing and evaluating improved use recommendation.



### WP4/WP5 Technological implementation, use recommendations, communication

Improved use recommendation will be proposed and evaluated through winemaking trials  
Sensorial analysis will be performed and wine quality assessed.  
**New analytical methods to guide chitosan use:**  
To check chitosan quality, for detection of resistant strains, for detection of chitosan residue...

