Galactomannoproteins of *Schizosaccharomyces japonicus* and wine protein stability

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Nowadays commercial preparations of yeast polysaccharides (in particular mannoproteins) are widely used for wine colloidal and tartrate salt stabilization. In this context, the industry has developed different processes for the isolation and purification of polysaccharides from the cell wall of *S. cerevisiae*. Indeed, *S. cerevisiae* releases low amounts of mannoproteins in the growth medium thus rendering economically disadvantageous their isolation directly from the culture broth. In contrast, *Schizosaccharomyces japonicus*, a non-*Saccharomyces* yeast isolated from wine, releases a high quantity of polysaccharides (in particular galactomannoproteins) during the alcoholic fermentation. Therefore, this yeast could be useful for the industrial production of exogenous polysaccharide preparations that could be easily purified and subsequently used as additives in winemaking.

In the present work, the polysaccharides (PSs) released from *Sch. japonicus,* recovered directly from the growth medium by ultrafiltration, have been chemically characterized and their impact on the wine colloidal stability evaluated. Interestingly, these PSs contribute positively to the wine protein stability. The visible haziness of the heated proteins decreased as the concentration of added PSs increased revealing an exponential relationship between concentration of additive and the extent of haze protection. The results obtained through SDS PAGE analysis of the haze and of the surnatant after the heat test of the wine are consistent with the turbidity measurements. Moreover, particles size distributions of the heat-treated wines, evaluated by Dynamic Light Scattering (DLS), show a decrease in the average dimension of the protein aggregates as the concentration of added PSs increased.