ABSTRACT

REAL-TIME MONITORING OF *HANSENIASPORA* AND *METSCHNIKOWIA* USING FLUORESCENTLY LABELED ANTIBODIES AND FLOW CYTOMETRY

Hanseniaspora/Kloeckera and *Metschnikowia* antibodies were developed to follow the organisms in fermentations by themselves and in combination with each other and *Saccharomyces cerevisiae*. The cross-reactivities encountered for the antibodies were lowered substantially for both *Hanseniaspora* and *Metschnikowia* antibodies using the adsorption method. The fluorescent stain, propidium iodide, was used in conjunction with the purified primary antibody and the fluorescent secondary antibody to determine the viability of yeast populations in the fermentations by flow cytometry. FTIR spectroscopy was used to follow alcohol production and sugar utilization of the fermentations. *Kloeckera apiculata* was found to be a more aggressive fermenting yeast than *Metschnikowia*. At low concentrations (10^3/mL), neither of the two yeasts affected the primary fermenter, *S. cerevisiae*.

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