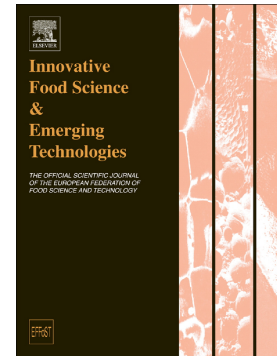


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Enrichment of waste yeast with bioactive compounds from grape pomace as an innovative and emerging technology: Kinetics, isotherms and bioaccessibility

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Enrichment of waste yeast with bioactive compounds from grape pomace as an innovative and emerging technology: kinetics, isotherms and bioaccessibility

**Running title:** *Saccharomyces cerevisiae* enriched with bioactive compounds

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## Abstract

*Saccharomyces cerevisiae* biomass obtained from brewing industry was thermally and chemically modified and applied for the biosorption of phenolic compounds from Cabernet Sauvignon and Bordeaux grape pomace extracts. The main purpose of this research was to enrich biomasses with bioactive compounds as an alternative for industrial waste recovery. Yeasts prepared by alkaline treatment showed the best performance in the uptake of phenolic compounds, with the highest sorption capacity of 190.28 mg g<sup>-1</sup> when in contact with Cabernet Sauvignon extract, 93.2% higher in comparison to non-treated yeast biomass. Biosorption was able to increase the bioaccessibility of grape pomace extracts. Alkaline pretreated yeasts showed an antioxidant capacity of 188.90 μmol TE L<sup>-1</sup>, 196% higher than yeasts without treatment, and a bioaccessibility 147% higher than control yeast suspension. Enriched biomasses display an important role in the preservation of the antioxidant capacity and in the bioaccessibility of compounds even after an *in vitro* digestion.

Keywords: By-product; *in vitro* digestion, structural characterization, yeast modification, isotherm.

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