

Evaluation of indigenous *Pichia kudriavzevii* from cocoa fermentation for a probiotic candidate

ABSTRACT

Currently, probiotics are becoming a concern along with a healthy lifestyle awareness. Besides bacteria, yeast can be used as a probiotic candidate with specific functional properties. Research on yeast as a probiotic is still limited (except for *Saccharomyces boulardii*). Previous research has isolated yeasts from the cocoa fermentation process. This study aimed to evaluate the probiotics properties and antioxidant activity of yeast strains isolated from spontaneous cocoa fermentation in Sukabumi, Indonesia. Previous research has isolated 23 yeast strains from spontaneous cocoa (*Theobroma cacao*L.)fermentation. Of the 23 yeaststrains isolated from cocoafermentation, 22 strains showed negative hemolysis as an indicator of non-pathogenic properties. Ten yeast strains were able to grow at 37°C and 41°C, pH 3, 0.5% bile salts, had autoaggregation ability (63.99-95.33%), and co-aggregation with *S. typhimurium*ATCC14028 (>80%), as character requirement for probiotic candidates. The genetic identification of the ten yeast strains showed that they were 99% identical to *Pichia kudriavzevii*. Based on its antioxidant activity, the *P. kudriavzevii*2P10 metabolites had the highest percentage of inhibition (68.51%) against DPPH free radicals and resistance to H₂O₂oxidative stress up to 3 mM. It can be concluded that *P. kudriavzevii*2P10 is a promising probiotic candidate for functional foods and health purposes.

Keyword: Antioxidant; Cocoa fermentation; *Pichia kudriavzevii*; Probiotics; Yeast