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# Production of food emulsifier from marine yeast

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Generally microbial compounds exhibit a variety of useful properties for the food industry especially as emulsifiers, foaming, wetting agents and solubilizers. Biosurfactants (bioemulsifiers) are a structurally diverse group of surface-active molecules synthesized by microorganisms. In the present study screening and identification of highly potential bioemulsifier producing marine yeasts viz. *Candida orthopsilosis, Candida intermedia* and *Candida glabrata* were done. The most potential *Candida orthopsilosis* was optimized for various physicochemical parameters using response surface methodology (RSM) and mass scale cultivation was done in an air lift fermentor (70L) and the yield of bioemulsifier obtained was 5.07g/l. The extracted bioemulsifier was partially purified and characterized as glycoprotein. The particle size of glycoprotein was around ~270nm whereas the emulsion size was in the range of 153 to 957nm. The partially purified glycoprotein showed high antifungal activity against both plant and human pathogens whereas antibacterial activity was observed only against human pathogens. Apart from these, antioxidant and anticancer properties were also observed. The glycoprotein was also scrutinized for oral acute toxicity in Wistar rats with three different concentrations Viz. 100mg/kg, 250mg/kg and 500mg/kg and was found to be nontoxic in nature. Finally the emulsifier was used as an ingredient in cake by replacing commercially available chemical emulsifiers in use and the quality criteria were compared.

## Biography

S. Jayalakshmi has 25 years of research experience in marine microbial biotechnology and 12 years of teaching experience. She has published 30 papers in reputed international and national journals and presented 30 papers in conferences. 5 students were awarded with PhD degree under her guidance and 9 more are working, mostly of microbial products. She has completed 3 major projects and has 2 ongoing projects.

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