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Formulation and characterization of wheat bran oil-in-water nanoemulsions

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3

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8 **ABSTRACT**

9 Wheat bran oil (WBO) has been reported to have an important content of bioactive
10 compounds, such as tocopherols, alkylresorcinols, steryl ferulates and other phenolic
11 compounds; however, its poor solubility in water systems restricts its applications in the food
12 industry. This study is focussed on the formulation of oil-in-water (O/W) nanoemulsions of
13 WBO in order to improve the bioaccessibility of its active compounds. The influences of oil
14 concentration, surfactant type and concentration, and emulsification method, on the droplet
15 size and stability of the nanoemulsions were investigated. Response surface methodology was
16 used to optimize the conditions for preparing stable nanoemulsions with the minimum droplet
17 size. The optimal nanoemulsion was obtained when 1% of WBO and 7.3% of a surfactant

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