

# Preparation of Natural Anti-dandruff Shampoo Using Seaweed-Rice Extract

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## Abstract

The reported microbial agents related to dandruff include the *Malassezia* fungus and the *Staphylococcus* bacteria. Samples of both seaweed and rice have been proven to have antimicrobial activity. The study will thus undertake the formulation of a natural anti-dandruff shampoo using the seaweed, *Gracilaria taiwanensis*, and black glutinous rice (derive from Taiwan). The methanol extracts from the seaweed and rice samples will be combined (1:1). The efficacies of the combined extract will be compared to that of anti-dandruff shampoos (TARDAN, Nizoral A-D, Zdrave Tri-Active, and Neutrogena T/Gel Therapeutic Anti-Dandruff Shampoos) at different concentrations (10, 25, 50, 100, 150, 200, 500, 750, 1000 µl/ml). The activity against *Malassezia furfur* fungus and *Staphylococcus epidermidis* bacteria will be determined by disc-diffusion and blotting paper disc-diffusion technique with zinc pyrithione as the positive control. Inhibition zone will be observed after conducting the antimicrobial assays. The most effective concentration range of natural extract will be used as reference for further research in the phytochemical and physicochemical evaluation of the natural extracts. The appropriate cleansing agent and conditioner along with the effective concentration of seaweed-rice natural extract will be used to prepare the anti-dandruff shampoo following optimization of formulation.

**Keywords:** anti-dandruff, *Malassezia*, natural extracts, shampoo, *Staphylococcus*



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