Saccharification Techniques of Seaweed *Hypnea musciformis* for the Transformation of Ethanol

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In the milieu of economical and environmental concern, seaweeds capable of accumulating high concentration carbohydrate can serve as an excellent alternative to food crops for bioethanol production. Therefore, this study aimed to evaluate the red marine alga *Hypnea musciformis* as material to obtain ethanol by anaerobic fermentation. The alga collected in the Flecheiras Beach, Trairi, CE was dried in the sun and exposed at different conditions of acid hydrolysis (HCl 0.2, 0.5 and 1.0 M for 10, 20 and 30 min. at 121°C). After aqueous extraction in the proportion of 1:50 (w/v) at 80°C for 4 h, pH 7.0, under constant agitation, the homogenates were filtered through nylon cloth and crude hydrolyzate extracts supplemented with peptone (1 g/L), yeast extract (0.5 g/L) and NaCl (1 g/L), sterilized, inoculated with *Saccharomyces cerevisiae*, *Pichia anomala* and *Kluyveromyces lactis* (OD 630 = 0.5) and incubated at 30°C for 48 h. The content of reducing sugar of cruded unhydrolyzed extract was 0.43 mg/mL. However, a significant increase was observed for the crude hydrolyzate extract to 0.2, for 10 min (2.00 ± 0.2 mg/mL) and the maximum observed for the hydrolyzate to 1.0 m per 30 min. (3.1 mg/mL). Among the yeasts, *S. cerevisiae* and *P. anomala* were only able to ferment the crude hydrolyzate with 0.2 M HCl for 10 min. As shown these results, *H. musciformis* is a potential and novel bioresource for the conversion of bioethanol. However, studies are necessary to generate fuel for the exploding consumption.

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