Extraction of Plant Growth Regulator Hormones; Abscisic Acid, Gibberellic Acid, Zeatin and Auxin from *Gracilaria corticata* for Agricultural and Aharmaceutical Purposes

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Abstract:

Algae are the most important producers in aquatic ecosystems; therefore, they are considered as the basis of the food network. In addition to food and pharmaceutical consumption, seaweed will be a source of future industrial materials, including algae liquid fertilizers. Extracts from algae, such as hormones and plant growth regulators, including abscisic acid, gibberellins, auxins, and cytokines, will be widely used in agriculture and pharmaceuticals. Due to the small amount of these hormones that cause the basic growth processes and previous research in this field is not available. In this study, these hormones were extracted from *Gracilaria Corticata* red algae on the northern shores of the Persian Gulf (Bushehr) within a year. After sampling, the samples were transferred to the laboratory for hormone extraction, and after extraction, they were measured by HPLC method to obtain a general conclusion about the amount of extractable of these hormones in algae. The results showed that the highest levels of hormones in *Gracilaria* red algae were ABA in November, GA_3 in May, Zeatin in September and IAA in January. The analysis showed that, given the presence of these hormones in algae, there is a possibility of extraction in larger quantities for use in algae liquid fertilizers and algae extracts.

Keywords: Abscisic acid, Gibberellic acid, Auxin, zeatin, *Gracilaria*