INTRODUCTION: Microalgae are presented as a new source of secondary metabolites to produce bioproducts in many industrial sectors, mainly used for the easy availability, using few nutritional sources, as well as a large biomass production. *Monoraphidium* is a genus of microalgae composed by 31 species. The current culture was obtained in state of Amapá, Brazil and it was identified morphologically as belonging to a *Monoraphidium* genus. Glucosidase enzymes are of utmost importance as targets for drug development as well as their inhibitors. Glucosidase inhibitors are used as drugs for the treatment of several pathologies, including diabetes, Gaucher disease, among others. OBJECTIVES: This study aims to detect glucosidase inhibitors in a methanolic fraction derived from a unialgal culture of *Monoraphidium* sp. from Brazilian Amazon region. MATERIALS AND METHODS: After one month of cultivation in Medium BG-11, the cells were harvested by centrifugation and a crude extract was obtained. This extract was passed through a column of hydrophobic interaction producing two fractions, an aqueous one and a methanolic one. The assay consisted in observing the enzyme substrate reaction inhibition in four different concentrations of the methanolic extract from the Monoraphidium sp. Briefly, the extract was incubated with a commercial β-glucosidase for 1 hour in a tube before applying to agar plates containing FeC\(_3\), and esculin 2%. As controls, were used β-glucosidase almonds (Sigma), conduritol β-epoxide (Aldrich) and β-glucosidase with methanol. RESULTS AND DISCUSSION: One of the four concentrations of methanolic extract of Monoraphium sp. started to show enzyme-substrate activity only after 45 minutes and stayed with partial inhibitory activity until 1 hour of the assay. CONCLUSION: The current assay shows the presence of β-Glucosidase inhibitors in *Monoraphidium* sp. More assays need to be done to quantify and identify the current inhibitor.

Keywords: glucosidase, inhibitors, microalgae.

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