Use of Nuphar advena as a Biodegradable Disinfectant and Anticancer Agent

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Commonly known as the yellow water lily root or kaandoosh in Ojibwe language, the rhizome of Nuphar advena is utilized by Indigenous communities for treating a wide variety of ailments, including bacterial overgrowth and gastrointestinal issues. Prior research supported these usages: showing Nuphar advena's effectiveness against bacterial overgrowths without hazardous effects on water systems, yet questions remained on heavy metal interactions' affect on human health. This study aims to investigate the impact of Nuphar advena rhizome on cancer cells (67NR, 4T1, MDA-ME-231, MiaPaCa-2) while emphasizing Ojibwe teachings around efficacy. Rhizome extractions were made with acidic, basic, and nuetral water, acetone, ether, ethanol, ethyl acetate, and chloroform. The MTT assay produced EC50 values revealing that ether extractions were effective against all cancer cell lines in concentrations less than 500 mg/L. These results contribute to the ethnopharmacological knowledge and reappraisal of Ojibwe medicinal teachings. Data is analyzed using Graphpad Prism 10 and Microsoft Excel.

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