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**Extraction and activity evaluation of lotus leaf alkaloids**

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**Abstract:**

**Background/Objective:** [In order to determine the optimal conditions for the extraction of lotus leaves alkaloids .]

**Methods:** [Using the cellulase enzymatic hydrolysis method to extract biologically active alkaloids from lotus leaves, the antioxidant capacity was evaluated. The antioxidant capacity of lotus leaf alkaloids was assessed by measuring the clearance rates of DPPH and hydroxyl radicals. The effects of liquor ratio, cellulase enzyme addition amount, water bath temperature, and water bath time on the extraction rate of lotus leaf alkaloids were determined through single-factor and orthogonal experiments.]

**Results:** [ The optimal conditions for extracting lotus leaf alkaloids were found to be a liquor ratio of 1:30 (g:mL), a cellulase enzyme addition amount of 2.5 mg, a water bath temperature of 50°C, and a water bath time of 60 minutes. Under these conditions, the extraction rate of lotus leaf alkaloids reached 0.63%. The experimental results showed that at a mass concentration of 1 mg/mL, the clearance rates for DPPH and hydroxyl radicals were 71% and 61%.]

**Conclusion:** [The alkaloids from lotus leaves act as natural antioxidants with high scavenging capacity towards DPPH and hydroxyl radicals, and are healthier and safer, with promising application prospects.]

**Keywords:** [Alkaloids from lotus leaves; Extraction Rate; Cellulase Enzymatic Hydrolysis Method; Antioxidant]