CERTIFICATE
OF PARTICIPATION

The Chair of the National Conference and the President of the Scientific Committee hereby certify that :

DR. Amel Boudjelal

participated in the 1st National Conference on Chemistry and Associated Sciences

(1st NCC-AS),held on September 18th, 2025, at the Higher School of Teachers in Bousaada, M'Sila, Algeria.

A poster presentation was made in Topic 1, entitled:

"Phytochemical Characterization and Anticancer Evaluation of Arisarum vulgare Tubers: A Contribution to Ethnopharmacological Knowledge."

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Phytochemical Characterization and Anticancer Evaluation of *Arisarum vulgare* Tubers: A Contribution to Ethnopharmacological Knowledge

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Abstract

Arisarum vulgare, a plant widely used in Algerian folk medicine to treat skin disorders, inflammation, and tumor-like conditions, remains underexplored in contemporary pharmaceutical research.

In this study, the tubers were extracted using ultrasound-assisted aqueous extraction (UAE), a sustainable and effective technique known to enhance the recovery of bioactive compounds. The phytochemical composition of the extract was analyzed by LC-ESI-MS/MS and the cytotoxic potential of the extract was evaluated in vitro using the MTT assay against two human cancer cell lines: HT29 (colorectal carcinoma) and HepG2 (hepatocellular carcinoma), following 24 and 48 hour incubation periods.

Seventeen phytochemicals, belonging mainly to the flavonoids and phenolic acids' class were identify and semi-quantify. Among the major compounds identified were rutin, hesperidin, and isoquercitrin, three flavonoids with well-established antioxidant, anti-inflammatory, and anticancer properties. Their presence likely contributes to the biological activities observed.

The results of cytotoxicity test revealed a clear dose- and time-dependent decrease in cell viability. At lower concentrations (1.56–12.5 µg/mL), cell viability remained relatively high but showed statistically significant reductions compared to the negative control. At higher concentrations (50 and 100 µg/mL), a marked cytotoxic effect was observed, particularly after 48 hours, indicating enhanced antiproliferative activity with prolonged exposure.

IC_{50} values were determined for each condition, and statistical analysis confirmed highly significant differences ($p < 0.0001$) across most concentrations. The tuber extract, demonstrated especially potent effects on HepG2 cells, suggesting strong cytotoxic and time-dependent antiproliferative activity.

Overall, this study provides new evidence supporting the traditional use of *A. vulgare* tubers and highlights its potential as a natural source of anticancer agents.

Keywords

Arisarum vulgare tuber, extraction, LC-MS/MS, anticancer activity, HT29, HepG2, ethnopharmacology, traditional medicine