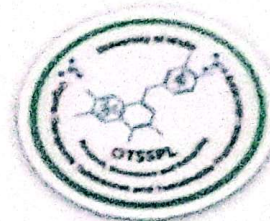




People's Democratic Republic of Algeria
University of M'sila
Faculty of Sciences, Department of Chemistry
Laboratory of Organo-Therapeutic Substances and Sustainable Processes (OTSSPL)



**1st International Hybrid Seminar: Green Chemistry and Artificial
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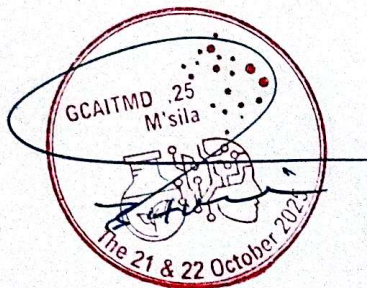
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كلية العلوم
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***In vivo* wound-healing and molecular docking studies support the traditional use of *Arisarum vulgare* aqueous extract**

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Abstract

In Algerian traditional medicine, *Arisarum vulgare* O. Targ. Tozz. (Araceae), locally known as “Elbgouga”, is widely used to treat eczema, wounds and burns [1]. Investigate, using *in vivo* and *in silico* molecular docking techniques, the possible effects of *A. vulgare* ultrasound-assisted aqueous extract (AVAE) on wound healing for the first time. The phytochemical profile was elucidated by LC-ESI-MS/MS analysis. Wistar albino rats were used *in vivo* tests to evaluate the AVAE ointment's acute cutaneous toxicity and wound-healing potential (1, 2, and 5% AVAE) [2]. Through *in silico* investigations, TNF- α , IL-1 β , MMP-9, TGF- β , VEGF, and EGFR were examined as possible therapeutic targets [3]. Twenty-seven phytochemicals, belonging mainly to the flavonoids and phenolic acids' class were identify and semi-quantify. The 5% AVAE-treated group showed a significantly greater ($p < 0.001$) wound contraction (8–20 days) with respect to untreated and petroleum jelly groups, whereas no statistically significant difference was observed with respect to the Madecassol[®]-treated group. On the contrary, the two lower dosages (1 and 2% AVAE) showed

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no statistically significant effects. Docking studies showed that *A. vulgare* bioactive compounds may have therapeutic effects on wound healing by targeting with high affinity TNF α , IL-1 β , MMP-9, TGF- β R1, VEGF and EGFR, counteracting inflammation, angiogenesis and oxidative unbalance, and promoting wound repair. This study demonstrated as that AVAE possess *in vivo* wound healing properties and no dermal toxicity, shading light also on the potential therapeutic targets involved.

Keywords: *Arisarum vulgare* O. Targ.Tozz.; traditional medicine; LC-ESI-MS/MS analysis; *in vivo* wound healing activity; *in silico* molecular docking studies.

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