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MATERIALS RESEARCH SOCIETY OF SERBIA

Programme and the Book of Abstracts

**TWENTY-FIRST YOUNG RESEARCHERS' CONFERENCE
MATERIALS SCIENCE AND ENGINEERING**

Belgrade, November 29 – December 1, 2023



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Evaluation of the anti-inflammatory potential of *Paeonia tenuifolia* L. petal extract

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Paeonia tenuifolia L. is a perennial, herbaceous plant species, known for the medicinal value of all of its parts. This study is aimed at determining the anti-inflammatory activity of the petals from *P. tenuifolia* L. wild-growing in Gulenovci, Serbia. The extract was prepared using the maceration method, and methyl alcohol as the extraction solvent, after which the sample was filtered through a filter paper, and dried to a constant mass using a drying oven. The anti-inflammatory activity of the extract was assessed based on the inhibition of protein denaturation under the influence of elevated temperatures. *P. tenuifolia* L. petal extract (250–1000 µg/mL) achieved a significant *in vitro* inhibition of the bovine serum albumin (BSA) denaturation, in a dose-dependent manner. The obtained results were compared to a reference drug, ibuprofen (20-100 µg/mL). The petal extract showed the highest anti-inflammatory potential at a concentration of 250 µg/mL, with $80.07 \pm 1.33\%$ of inhibition, while the lowest level of inhibition was achieved at the highest tested concentration ($54.33 \pm 2.33\%$). This type of findings highlight the potential use of *P. tenuifolia* petal extracts in pharmaceutical and cosmetic industries, for the treatment of skin inflammation.