

**Abstract 32 – Paper ID: 045****Bioassay-Guided Fractionation of *Zanthoxylum armatum* DC. Stem Extract Identifies Sesamin and Fargesin as Inhibitors of CpG-Induced Inflammatory Responses in cDC1 Cells**

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**Abstract**

This study aimed to investigate the major constituents of the stem of *Zanthoxylum armatum* DC. through bio-guided isolation and to evaluate their anti-inflammatory potential. *Zanthoxylum armatum* DC. is well known for its medicinal value, and bioassay-guided isolation of active metabolites from medicinal plants remains a powerful strategy for identifying novel therapeutic candidates. Hydromethanolic stem extract of *Z. armatum* was sequentially fractionated, and the resulting fractions were subjected to bioassay-guided purification using column chromatography combined with heat-induced haemolysis inhibition and albumin denaturation inhibition assays. Structural characterization of the isolated compounds was performed using single-crystal XRD and NMR spectroscopy. The anti-inflammatory activities of the purified compounds were assessed *in vitro* by analyzing IL-12 and CD80 expression levels in conventional type 1 dendritic cells via flow cytometry. Among all fractions, the sequential ethyl acetate fraction exhibited the strongest protein anti-denaturation and membrane-stabilizing activities. Subsequent purification led to the isolation of sesamin and fargesin from this fraction. Both compounds suppressed IL-12 production, while fargesin additionally demonstrated significant inhibition of CD80 expression. Overall, the study identified bioactive constituents with promising activity against proinflammatory dendritic cells for the first time. These findings provide scientific support for the traditional use of *Zanthoxylum armatum* DC. as an anti-inflammatory agent.

**Keywords:** *Zanthoxylum armatum* DC., Sesamin, Fargesin, Anti-inflammation, Intracellular IL12p40/70, CD80