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**PROCEEDINGS OF  
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 ABSTRACTS**

# Abstract Submission Professional

*Biological Sciences (BS)*

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## ANTI-INFLAMMATORY PROPERTIES OF ARTEMISIA TILESII LEDEB EXTRACT

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**Preferred presentation method::** Oral Presentation

**Introduction:** Inflammation is the cause of many chronic diseases of various human body systems. Neurodegenerative disorders, including Alzheimer's disease, which directly linked to inflammation, are one of the leading causes of disability in Europe.

Enzymatic and non-enzymatic ways of formation of lipid peroxidation metabolites play a significant role in the formation and progress of inflammatory processes, initiating oxidative stress and provoking secondary alteration as a mediator of inflammation. One of the key enzymes of lipid metabolism is 15-lipoxygenase.

**Objectives:** Investigation of substances that inhibit 15-lipoxygenase activity based on extracts from biotechnological plant raw materials of the rare plant *Artemisia tilesii* Ledeb.

**Methods:** FTIR spectroscopy, UV spectrophotometric study of the kinetics of 15-lipoxygenase inhibition.

**Results:** The study of the extract from *Artemisia tilesii* Ledeb using FTIR spectroscopy revealed that the main part of the extract substances has an aromatic nature, a small amount of substances contains aliphatic groups with a branched structure. In comparison with rutin, this water-ethanol extract (30:70%) *Artemisia tilesii* Ledeb, contains about 34% flavonoids. It was also proved that this extract effectively inhibits the enzyme 15-lipoxygenase ( $IC_{50} = 17.94 \pm 1.20 \mu\text{m}$ ), because this effect is manifested in the studied concentration range for rutin 25-100  $\mu\text{m}$ . Probable mechanism of inhibition of 15-lipoxygenase extract from *Artemisia tilesii* Ledeb – mixed (partial). Mixed (partial) inhibition occurs when the inhibitor binds both in the active site of the enzyme and externally, and the enzyme substrate complex retains partial activity compared to the native enzyme. The mechanism of inhibition established in this study fully accord to the essence of the extract composition as a mixture of different biologically active and inert substances. Thus, it can be argued about the potential anti-inflammatory properties of the extract of *Artemisia tilesii* Ledeb in vitro.

**Conclusion:** The results indicate that the extract of *Artemisia tilesii* Ledeb can be used as an active pharmaceutical ingredient in the development of new anti-inflammatory drugs for the treatment of neurodegenerative diseases.

**Disclosure of Interest:** None Declared

**Keywords:** 15-lipoxygenase, anti-inflammatory properties, *Artemisia tilesii* Ledeb, extract, inhibition