**ABSTRACT**

A series of chalcones of Benzothiazole derivatives [AV-5(a-j)] were synthesized by cyclization of chiff bases. The structures of new synthesized compounds were confirmed by IR, 1H NMR and Mass spectral data. Synthesized derivatives were evaluated for their anti-inflammatory, analgesic, antiulcer, antibacterial and antifungal activities. Some of the synthesized compounds were found to possess significant antiinflammatory, analgesic, antibacterial and antifungal activities. Compounds having good QSPR values were comparable to the result obtained during pharmacological activities.The docking studies were carried out in 2OYE, 1CX2, 1CQE, 1CVU and 1DCXreceptors. It was found that AV-5a has 1CX2 receptor binding more than that of other receptors which is a clear indication that the molecule will have good anti-inflammatory activity with fewer side effects which was proved by anti-inflammatory and antiulcer activities. The derivative possessing nitro and methoxy group as substituent in phenyl ring exhibited good pharmacological activities than other synthesized derivatives.

**Key words:** Benzothiazole; Anti-inflammatory; Antiulcer; Analgesic; Antimicrobial;

Docking; QSPR.