SYNTHESIS AND IN SILICO ANALYSIS OF 3-(1-(3-TOLYL)THIOUREIDO)PROPANOIC ACID DERIVATIVES AS ARACHIDONIC ACID METABOLIC PATHWAY INHIBITORS

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Arachidonic acid metabolism to leukotrienes catalysed by 5-lipoxygenase (5-LOX) inhibition is a potential target for inflammation modulation [1]. Molecular docking is an important component of drug discovery process. It is the most common computional structure-based drug desing method and has been widely used since 1980s [2]. This process allows researchers to screen large databases of theoretical compounds which can be focused down and then tested experimentaly. Molecular docking comprises of two separate algorithms. Sampling algorithm predicts confirmations which ligand can assume in the active pocket. And a scoring function which predicts binding energy between ligand and an anctive pocket [3].

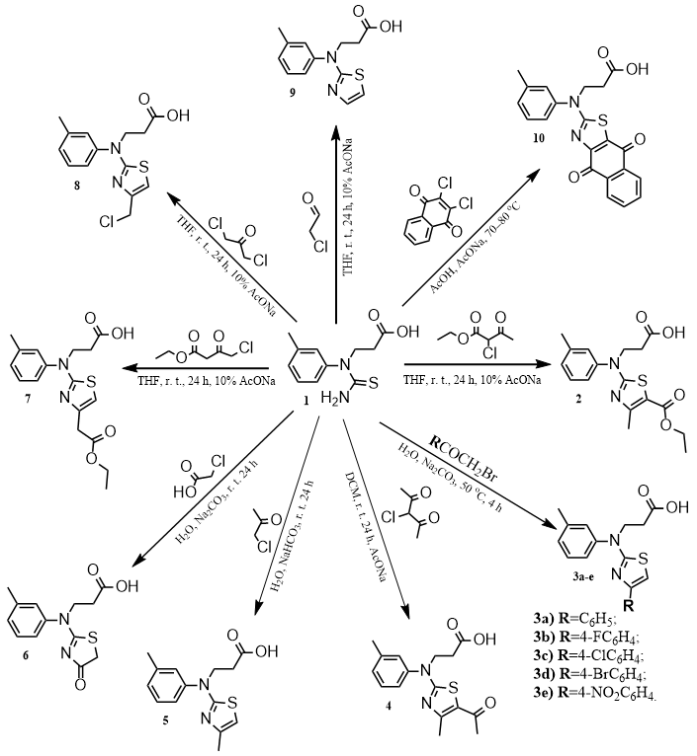

Fig. 1. Synthesis of novel 3-(1-(3-tolyl)thioureido)propanoic acid derivatives

Results.

Arachidonic acid metabolism can be inhibited by thiazole moiety containing compounds [4-6]. New thiazole derivatives **2-10** were synthesized by cyclocondensation reactions with a-halogenketones as shown in Fig. 1. All computational work was done on **MOE** [7] following procedure adapted from reported protocol [8] with slight modification. Synthesised compounds **2-10** showed competitive inhibition of 5-lipoxygenase.

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