Synthesis of new derivatives of dipyrimido[4,5-b:5,4-e][1,4]thiazine and their enzyme inhibitory activity assessment on soybean 15-lipoxygenase

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Pyrimidine derivatives and annulated pyrimidines continue to attract great interest because of their wide variety of interesting biological activities, such as anticancer [1], antiviral [2], antitumor [3], and anti-inflammatory activities [4].

Continuing our previous work [5], in this study we decided to synthesise a new fused pyrimidine ring system dipyrimido[4,5-b:5,4-e][1,4]thiazine and study its biological activities. For this purpose we first prepared compound (1) and (2).

Reaction of compound (1) with (2) in the presence of Et3N in boiling EtOH gave quantitatively the desired compound (3). The subsequent treatment of compound (3) with various secondary amines in DMF gave the cyclized products 4(a-f) in good yields (Scheme 1). Consequently, the enzyme inhibitory activities of these compounds on soybean 15-lipoxygenase (15-LO) are also evaluated.

Scheme 1.

References: