



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

*A. Karimian**, M. Rahimizadeh, H. Eshghi, M. Bakavoli

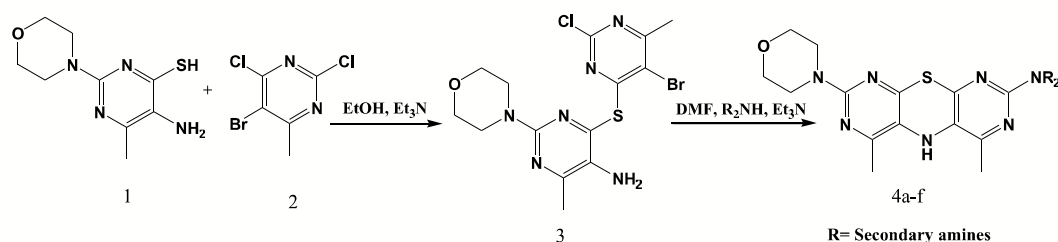
Department of Chemistry, Faculty of Science, Ferdowsi University of Mashhad, 91775-1436, Mashhad, Iran

Email: a_karimian87@yahoo.com

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:

1. C.R. Petrie, H.B. Cottam, P.A. McKernan, R.K. Robins and G.R. Revankar, *J. Med. Chem.*, **1985**, 28, 1010.
2. M.M. Gineinah, M.A. El-Sherbeny, M.N. Nasr and A.R. Maarouf, *Arch. Pharm.*, **2002**, 335, 556.
3. P.G. Baraldi, M.G. Pavani, M.C. Nunez, P. Brigidi, B. Vitali, R. Gambari and R. Romagnoli, *Bioorg. Med. Chem.*, **2002**, 10, 449.
4. S.M. Sondhi, M. Johar, S. Rajvanshi, S.G. Dastidar, R. Shukla, R. Raghubir and J.W. Lown, *Aus. J. Chem.*, **2001**, 54, 69.
5. M. Bakavoli, M. Nikpour, M. Rahimizadeh, M. R. Saberi and H. Sadeghian. *Bioorganic & Medicinal Chemistry*, **2007**, 15, 2120–2126.

