www.ijcps.org

IJCPS Vol. 7, Special Issue
RICES - Jan 2018

ISSN:2319-6602
International Journal of Chemical and Physical Sciences

Synthesis and Characterization of Chlorinated Thiophene Based Flavones

P. V. RANDHAVANE[1*], H. N. AKOLKAR[2], R. S. ENDAIT[2], R. K. JADHAV[1], A. B. NIKUMBH[1] and B. K. KARALE[2]

[1]Department of Chemistry, S. S. G. M. College, Kopargaon, (MS) India.
[2]Department of Chemistry, Radhabai Kale Mahila Mahavidyalaya, Ahmednagar, (MS) India.
Corresponding Author email: pvrandhavane@gmail.com

Abstract

(E)-3 -(3- (2,5-dichlorothiophen-3-yl) -i- (2,3-dimethylphenyl) -1H-pyrazol-4-yl) -1-(2-hydroxyphenyl)prop-2-en-1-ones were synthesized by Claisen-Schmidt condensation reaction between 3-(2,5-dichlorothiophen-3-yl)-1-(2,3-dimethylphenyl)-1H-pyrazole-4-carbaldehyde and substituted 2-hydroxy acetophenones. 2-(3-(2,5-Dichlorothiophen-3-yl)-1-(2,3-dimethylphenyl)-1H-pyrazol-4-yl)-4H-chromen-4-ones were synthesized by oxidative cyclization of corresponding chalcones using DMSO/I_2.The structures of newly synthesized compounds were confirmed by some spectral analysis methods like, IR, NMR and Mass.

Keywords: Chlorinated thiophene, oxidative cyclization,Claisen-Schmidt condensation.

Introduction

Thiophene is a five membered heteroaromatic compound with sulfur as a heteroatom. Thiophene and its derivatives exist in petroleum or coal. Thiophene moiety is found in certain natural products. It is also incorporated in several pharmacologically active compounds. The compounds containing thiophene moiety are reported to have antiproliferative [1], antibacterial [2], anticonvulsant [3] and antiprotozoal [4].

Chalcones are organic compounds possessing an enone moiety between two aromatic or heteroaromatic rings. These are the building blocks for the synthesis of various heterocyclic compounds like flavones, hydroxyl flavones, aurones and pyrazolines. Some chalcones are natural products found in various plant species around the world.Chalcones possess pharmacological activities like anticancer [5], anticancer [6] and antioxidant [6].

Flavones are group of naturally occurring oxygen containing heterocyclic compounds. They found in cereals and herbs. Flavones possess the activities such as antioxidant [7], antibacterial [8], antifungal [9] and antiviral [9].

Considering the biological importance of thiophene based heterocyclic compounds and in continuation of our work it was planned to synthesize chalcones and flavones containing chlorinated thiophene moiety.

Experimental

Melting points were recorded in open capillaries in liquid paraffin bath and are uncorrected. IR spectra were recorded on Perkin-Elmer FTIR spectrophotometer.^{1}H NMR spectra were recorded on Bruker Avance 400 MHz NMR spectrometer in DMSO as a solvent and TMS as an internal standard. Peak values are shown in σ (ppm). Mass spectra were recorded on Finnigan mass spectrometer.