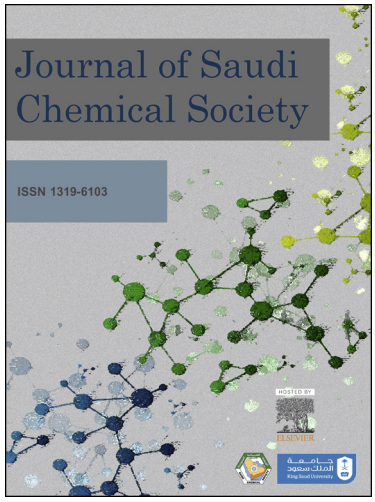

Original article

Antioxidant and Anticancer Activities of α-Aminophosphonates Containing Thiadiazole Moiety

Mohamed M. Azaam, El-Refaie Kenawy, Ahmed S. Badr El-din, Abeer A. Khamis, Mohammed A. El-Magd

PII: S1319-6103(17)30072-8
DOI: http://dx.doi.org/10.1016/j.jscs.2017.06.002
Reference: JSCS 888

To appear in: *Journal of Saudi Chemical Society*

Received Date: 9 May 2017
Revised Date: 31 May 2017
Accepted Date: 3 June 2017

Please cite this article as: M.M. Azaam, E-R. Kenawy, S.B. El-din, A.A. Khamis, M.A. El-Magd, Antioxidant and Anticancer Activities of α-Aminophosphonates Containing Thiadiazole Moiety, *Journal of Saudi Chemical Society* (2017), doi: http://dx.doi.org/10.1016/j.jscs.2017.06.002

Antioxidant and Anticancer Activities of α-Aminophosphonates Containing Thiadiazole Moiety

Mohamed M. Azaam[*,1] El-Refaie Kenawy[1], Ahmed S. Badr El-din[1,2], Abeer A. Khamis[3], Mohammed A. El-Magd [4]

[1]Department of Chemistry, Faculty of Science, Tanta University, Tanta, Egypt

[2]Department of Chemistry, Faculty of Science, University of Tabuk, Tabuk, Saudi Arabia

[3]Biochemistry Division, Department of Chemistry, Faculty of Science, Tanta University, Tanta, Egypt

[4]Anatomy Department, Faculty of Veterinary Medicine, Kafr elsheikh University

***E-mail address:** mmkazaam@yahoo.com, Mohmed.azam@science.tanta.edu.eg,

Tel.: +201227171142

Abstract:

In the current study, α-aminophosphonates containing thiadiazole moiety **(1-4)** was synthesized, characterized and their antioxidant and anticancer activities were carried out. The compounds **(1-4)** were synthesized from the reaction of 2-amino-5-methyl-1,3,4-thiadiazole with various aldehydes, triphenylphosphite and mixed valence Cu(I)/Cu(II) inorganic coordination polymer as a catalyst. The elucidation of compounds structures were carried out using different spectroscopic techniques. The antioxidant properties were carried out using radical scavenging methods (DPPH) which exhibited excellent scavenging activity particularly with compound **3**. The cytotoxic effects of the five compounds on the human hepato cellular carcinoma (HepG2) and breast adeno carcinoma (MCF7) cell lines were evaluated using MTT assay which revealed the presence of cytotoxic effect with highest activity for