



## **New Derivatives of 3-Substituted 5,5-Diphenyl-2,4-imidazolidinedione as Anticonvulsant and Antiepileptic Candidates**

**Saadi Mohammed Dhaher Al-Nuzal\***

Environmental Research Centre, The University of Technology, Baghdad, **IRAQ**

Email: [saadidhaher@yahoo.com](mailto:saadidhaher@yahoo.com)

Accepted on 25<sup>th</sup> May 2014

---

### **ABSTRACT**

*New reliable synthetic method for the preparation of 3-substituted-5,5-diphenyl-2,4-imidazolidinedione derivatives, through Mannich reaction of phenytoin, small aldehydes or ketones, and amines. In this procedure it is possible to attach known biologically active molecules to the molecule of 5,5-diphenyl-2,4-imidazolidinedione through methylene bridge to give products with good yields. Many amines having straight or branched chain alkyl, or substituted aromatic ring, were found to follow this procedure, and the products were identified following available techniques such as <sup>1</sup>H and <sup>13</sup>C NMR, UV-visible and FT-IR absorption techniques, as well as elemental analysis. In all the cases paraformaldehyde was used as Mannich aldehyde of moderate reactivity, and the products obtained were white to yellow stable solids with good yields. These derivatives are good anticonvulsant and antiepileptic candidates.*

**Keywords:** 3-substituted-5,5-diphenyl-2,4-imidazolidinedione derivatives, Mannich reaction, phenytoin, biologically active molecules to the molecule, methylene bridge, anticonvulsant and antiepileptic candidates.

---