

Synthesis and Antihyperlipidemic Properties of Novel *N*-(4-Benzoylphenyl) Pyrrole-2-Carboxamide Derivatives

By

Nisreen Nazmi Haj Ahmad

Supervisor

Prof. Tariq Musbah Al-Qirim

Co-supervisor

Dr. Abdel Qader Fares Al Bawab

ABSTRACT

Hyperlipidemia is involved in development of atherosclerosis and coronary heart disease. We synthesized four novel pyrrole carboxamide derivatives (**3**, **5**, **7** and **9**) as antihyperlipidemic agents. The verified molecules were characterized using I.R. and NMR facilities. Biological evaluation of **3** and **5** showed that compound **3** significantly decrease TG (95%), LDL-C (77%), TC (75%) and mild increase in plasma HDL-C (22%). Contrarily, compound **5** appeared to be less potent compared to **3**; it decreased moderately TG (55%), LDL-C (22%), TC (26%), and mild increase of HDL-C (4.5%). The NH group of pyrrole mediates H-bond interaction of **3** with the backbone of the target(s) protein(s) and this corresponds to the high potency of **3**. The lower activity of **5** confirms that the presence of H-bond is essential to induce high activity. The finding of this work suggests that this scaffold might be promising as antihyperlipidemic agents for future work.