IN VIVO ANTIHYPERLIPIDEMIC PROPERTIES OF NOVEL PYRROLE-2-CARBOXAMIDE DERIVATIVES IN TRITON WR-1339 INDUCED HYPERLIPIDEMIC RATS

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ABSTRACT

In the search for new potential antihyperlipidemic agents, the present study focuses on the synthesis of novel *N*-(9,10-dihydro-1-hydroxy-9,10-dioxoanthracen-1-yl)1-*H*-pyrrole-2-carboxamide derivatives (compounds **6**, **6a**, **7** and **11**) and 4-(9,10-dihydro-9,10-dioxoanthracen-1-ylsulfamoyl)-1*H*-pyrrole-2-carboxylic acid derivative (compound **13**) and investigating their antihyperlipidemic activity using Triton WR-1339-induced hyperlipidemic rats as an experimental model.

Hyperlipidemia was developed by intraperitoneal injection of Triton WR-1339 (300 mg/kg body weight). The tested animals were divided into normal control (NCG), hyperlipidemic (HCG), compounds **6**, **6a**, **7**, **11**, **13** and bezafibrate treated groups. At a dose of 15 mg/kg body weight, compounds **7**, **11**, **13** and bezafibrate (100 mg/kg)

significantly ($p < 0.0001$) reduced elevated plasma triglycerides levels after 18 h compared to the hyperlipidemic control group. However, only the groups treated with compounds **11** and **13** showed an obviously significant ($p < 0.0001$) reduction in plasma total cholesterol levels after 18 h compared to the hyperlipidemic control group. Low-density lipoprotein cholesterol levels also significantly ($p < 0.0001$) decreased with compounds **11** and **13** levels after 18 h compared to the hyperlipidemic control group. Moreover, high-density lipoprotein cholesterol levels were significantly ($p < 0.0001$) increased with compounds **11**, **13** and bezafibrate treated groups and ($p < 0.001$) with compound **7** after 18 h compared to the hyperlipidemic control group. In addition, glucose levels significantly decreased with compounds **7** and **11**. It is therefore reasonable to assume that compounds **7**, **11** and **13** may have potential in the treatment of hyperlipidemia and compounds **7** and **11** have potential in the treatment of hyperglycemia.