Rebamang A. Mosa et al., Madridge J Pharm Res. 2016
http://dx.doi.org/10.18689/2638-1591.a1.002

madridge CONFERENCES

International Conference on
Medicinal and Pharmaceutical Chemistry

December 5-7, 2016 Dubai, UAE

Cardioprotective potential of a lanosteryltriterpene from Protorhuslongifolia

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The current rapid increase in incidences of cardiovascular events indicates a need for discovery of new more effective cardioprotective agents. This study evaluated the cardioprotective effect of methyl-3β-hydroxylanosta-9, 24-dien-21-oate (RA-3) from *Protorhuslongifolia* stem bark. The cardioprotective effect of RA-3 was investigated in isoproterenol-induced myocardial injury in high fat diet (HFD)fed rats. Rats were randomly divided into the normal diet (ND) fed group and high fat diet (HFD) fed groups. The experimental hyperlipidemicgroup was orally administered with RA-3 (100 mg/kg body weight) for 15 days. The rats were then injected with isoproterenol (85mg/kg b.w) to induce myocardial injury. At the end of the experimental period,hearts and blood samples were collected and used for histology and biochemical assays, respectively. RA-3 exhibited cardioprotective effect as it minimized myocardial injury in HFD fed rats. Few lesions of acute hyaline degeneration and reduced fat deposition were observed in the heart tissue of the triterpene-treated rats. Lactate dehydrogenase activity waseffectively decreased in the blood of the triterpene-treated rats(44.1mU/mL) compared to the untreated group (64.8mU/mL). The RA-3 treatment also significantly decreased levels of serum total cholesterol (7.51 mmol/L) and LDL-c (4.46 mmol/L) with an increase in HDL-c (47.3 mmol/L) in HFD-induced hyperlipidemic rats relative to untreated control group. An increased glutathione content and catalase activity along with lower levels of malondialdehyde in the triterpene-treated animals (120.8 nmole/μL) than in the non-treated HFD fed rats (143.6 nmole/μL) were also observed. The results indicate that the triterpene has cardioprotective effect. It is apparent the triterpene has a potential to be used in the prevention and treatment of cardiovascular diseases and related health problems.

Biography:

Dr. Rebamang Anthony Mosa has completed his PhD at the age of 35 years from University of Zululand. He is a senior lecturer at the University of Zululand and a registered member of the South African Council for Natural Scientific Professions (SACNASP). He has published over 15 papers in reputed journals. His area of expertise is in phytomedicine, currently focusing on bioactivities of plant-derived compounds against human metabolic disorders.