

Herbals & Natural Remedies

October 26-27, 2015 Chicago, USA

Antiplatelet aggregation and cytotoxicity activity of betulinic acid and its acetyl derivative from *Melaleuca bracteata* var. *revolution gold*

Foluso O Osunsanmi, Oluwagbemiga S Soyinbe, Idiat B Ogunyinka, Rebamang A Mosa and Andy R Opoku
University of Zululand, Republic of South Africa

Platelet dysfunctions are implicated in cardiovascular diseases. Management of abnormal platelet aggregations with natural products is a promising approach to the treatment of cardiovascular diseases. In this study, Betulinic Acid (BA) and its acetyl derivative (3- β acetylbetulinic acid) (BAA) from *Melaleuca bracteata* var. *revolution gold* were investigated for their antiplatelet aggregation and cytotoxicity. BA was isolated from *Melaleuca bracteata* by column chromatography and some portion of BA were used to synthesize BAA. The antiplatelet aggregation activity of the compounds was separately evaluated on collagen, ADP, thrombin and epinephrine to induce rat platelet aggregations. The MTT cytotoxicity assay was used to determine the cytotoxic effect of the compounds against Human Embryonic Kidney (HEK293) and Hepatocellular Carcinoma (HEPG2) cell lines. BA and BAA exhibited significant ($p < 0.05$) dose dependent antiplatelet aggregation activity. BA and BAA showed the highest platelet aggregation inhibition on epinephrine induced platelet aggregation with IC_{50} values 0.78 mg/ml and 0.85 mg/ml, respectively. BA and BAA showed less cytotoxicity effect on both HEK293 cell (IC_{50} 1027 μ g/ml and 1051 μ g/ml, respectively) and HEPG2 cells (IC_{50} 448 mg/ml and 672 mg/ml, respectively). The results suggest that the compounds could serve as template for synthesis of new antiplatelet drugs platelets.

Biography

Foluso O Osunsanmi is a Senior Biochemist with over fifteen years work experiences in both industrial and academic sectors. He is currently a Researcher in the Department of Biochemistry and Microbiology, University of Zululand, South Africa. He specializes on natural product synthesis in the treatment of various diseases. He has completed his PhD works and is at the edge of submitting his thesis. Notable publications have been accredited to him in reputable journals. He is a Member of South Africa Association of Clinical Biochemistry and National Association of Safety Professional.

alafin21@yahoo.com

Notes: