

RESEARCH ARTICLE

EVALUATION OF CYTOTOXIC AND THROMBOLYTIC ACTIVITIES OF METHANOLIC EXTRACT OF THE FLOWERS OF *SIDA ACUTA*

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The methanolic extract of flowers of *Sida acuta* (MESAF) was subjected to cytotoxic activity evaluation by *in vitro* brine shrimp lethality bioassay and thrombolytic activity. In brine shrimp bioassay, the crude methanolic extract of flowers showed significant cytotoxic activity with LC₅₀ value of 74.20 µg/ml compared to 0.96 µg/ml, exhibited by standard vincristine sulphate. During thrombolytic activity evaluation, the methanolic extract of *S. acuta* flower showed 24.733±8.017% lysis of clot while standard streptokinase (SK) and water, used as positive and negative controls, demonstrated 79.062±6.197% and 1.54±0.876% lysis of clot, respectively.

Key words: *Sida acuta*, Brine Shrimp bioassay, Thrombolytic activity, Cytotoxic activity, Streptokinase.

INTRODUCTION

All plants produce chemical compounds as part of their normal metabolic activities. These phytochemicals are divided into 'primary metabolites' such as sugars and fats, which are found in all plants; and 'secondary metabolites', compounds which are found in a smaller range of plants, serving a more specific function. These secondary metabolites can have therapeutic actions in humans which can be refined to produce drugs (Meskin Mark, 2002) and presence of these active constituents contribute for medicinal value of plants (Dey *et al* 2012; Deb *et al* 2013; Arjariya and Nema, 2014).

Sida acuta is a small, erect, perennial shrub, branching profusely from the base. It belongs to the family 'Malvaceae' and has wide application in Nigeria folk medicine. Some herbalist have claimed the traditional use of this plant to cure infections such as malaria, ulcer, fever,

gonorrhoea, abortion, breast cancer following inflammation, wound infections (Kayode, 2006; Edeoga *et al* 2005). The leaf part is the most frequently used against various infections (Figure 1).



Fig. 1. *Sida acuta* flower (Wireweed)