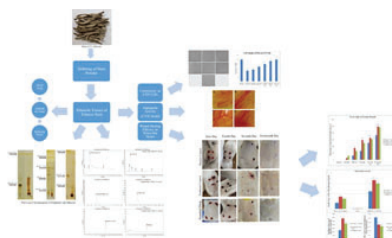## Preclinical assessment of stem of *Nicotiana tabacum* on excision wound model

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Agro-waste material derived from *N. tabacum* has shown enormous potential antioxidant and antimicrobial activity. Hence in the present study, we investigated the wound healing efficacy of ethanolic extract of stem of *Nicotiana tabacum* on Wistar rat model. Ethanolic extract prepared from defatted stem was to check various phytochemicals using spectrophotometric and chromatographic technique. The antioxidant potential was determined by FRAP and Reducing Power assay in extract. Cytotoxicity of extracts was determined using mouse fibroblast L929 cell lines by MTT assay. *In vivo* angiogenic activity was observed on chick chorioallantoic membrane (CAM) model by observing blood vessels formation and its branching. *In vivo* wound healing activity was observed on excision wounds in rat model by quantifying percentage of wound contraction, antioxidant activity and histopathology studies. From the present study, polyphenols, tannins and alkaloids were found to be determined in the ethanolic extract by means of spectrophotometric and chromatographic analysis against standards. Antioxidant assay revealed maximum antioxidant potential in ethanolic extract. Cytotoxic effect of extract has not been shown on L929 cell line. From CAM model, extract has shown growth of blood vessels formation at concentration of 480 μg/ml. Topical application of extracts on excision wounds, revealed wound healing activity i.e., 98.7% ± 0.002 on 14th day as well as enzymatic activity (SOD, CAT, GST) and non-enzyme content (GSH and Lipid peroxidation) has been found to be high in granulated tissue. Histopathological studies confirmed the re-epithelization in skin wounds. It can be concluded that stem of *N. tabacum* can be used as herbal remedy in wound healing process as a topical application.

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