Ethanollic Extract of *Tithonia diversifolia* (Hemsey) A Gray Inhibit Migration Activity and Decrease TGF beta and VEGF expression on Keloid Fibroblast

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Background. Keloid occurred by abnormal wound healing is characterized by massive fibroblast proliferation and excessive collagen accumulation. Therapy for keloid is relatively limited and has side effects. *Tithonia diversifolia* Hemsley A Gray has known to have anti proliferative effect against some cancer cells in vitro. However its potential as anti keloid has not been explored.

Objective. This study aims to assess the *T. diversifolia* ethanolic extract effect on fibroblast migration activity TGF beta and VEGF expression of keloid fibroblasts in vitro.

Methods. Fibroblast were isolated from keloid collected from patient keloid tissue. The migration activity of keloid fibroblast was assessed using scratch assay. TGF beta and VEGF expression examination were done using ELISA.

Results. Ethanolic extract of *T. diversifolia* treatment at concentration of 20 ug/mL 10 ug/mL and 5 ug/mL for 24 hour on keloid fibroblast culture showed slower migration activity compare to those on keloid fibroblast culture without treatment ($p < 0.05$). The TGF beta and VEGF expression were significantly lower in ethanolic extract of *T. diversifolia* treatment group compare to those on keloid fibroblast without treatment ($p < 0.005$).

Conclusion. Ethanolic extract of *T. diversifolia* inhibit fibroblast migration activity and decrease the expression of VEGF and TGF beta on keloid fibroblasts in vitro.