



ABSTRACT

Angiogenesis is the formation of new blood vessels from the preexisting ones and the process is robustly involved in the development of solid tumor for delivery of nutrients and oxygen to the growing tumor. Thus, inhibiting angiogenesis could inhibit tumor formation. The present study was designed to study the anti-proliferative and anti-angiogenic effects of a plant *Senegalia modesta* (Phulai) in cancer. This project was aimed to regulate angiogenesis through biological compounds which can provide alternative options for therapeutics of metastasis. The detection of compounds was analysed by the GC-MS and found various phenols, amino acids, saponins, flavonoids and terpenoids which play crucial role in biological activities. Furthermore, HPLC analysis identified the thymol as bioactive compounds present in the plant extract act as anti-angiogenic agent. The anti-angiogenic activity of *Senegalia modesta* extracts was evaluated *in-vivo* using the chick embryo chorioallantoic membrane (CAM) assay and wound healing assay in albino mice. The ethanolic extract exhibited anti-angiogenic activity by inhibiting the vessel formation in CAM assay. The CAM treated with *Senegalia modesta* stem extracts (400 μ g/ μ l) showed a significantly reduced vessel formation compared to control. The CAM assay results coincide with the wound healing assay at varying concentrations (50mg/ml, 100mg/ml and 200mg/ml) and exhibited a significant dose dependent effect. The plant extracts significantly delayed angiogenesis in wound healing in mice at higher concentration (200mg/ml). These results suggested that *Senegalia modesta*'s extract has anti-angiogenic activity and the plant may be used as a potential therapeutic agent for metastasis in cancer.