

## Antiangiogenic Potential of Phellodendron amurense Bark Extract Observed on Chorioallantoic Membrane

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**Abstract :** Angiogenesis, a formation of new blood vessels from a pre-existing vasculature, plays an important role in pathologic processes such as the growth and metastasis of tumours. Tumours cannot grow beyond a few millimetres without blood supply from the newly formed blood vessels from the host tissue, a process called tumour-induced angiogenesis. The successful research of antiangiogenic treatment of cancer has focused on nutraceuticals with angiogenesis-modulating properties. Berberine, as a major active component of the bark of *Phellodendron amurense* Rupr., has shown antitumour activity by intervening into different steps of carcinogenesis. The influence of ethanolic extract of *Phellodendron amurense* bark on the angiogenesis was tested *in vivo* on chick chorioallantoic membrane (CAM). The irritancy of the CAM after the application of the crude bark extract dissolved in normal saline (10 mg/mL) was investigated on embryonic day 7. No significant signs of the irritancy, such as vasoconstriction, hyperaemia, haemorrhage or coagulation were observed which indicates the harmless character of the extract. A significant reduction in vessel sprouting and higher percentage of avascular zone was observed in the case of CAM treated with the extract in comparison with non-treated CAM (control), which is a proof of the antiangiogenic potential of the extract. These results could contribute to the development of novel drugs for the treatment of cancer or other diseases, in which angiogenesis plays a significant role.

**Keywords :** angiogenesis, berberine, chorioallantoic membrane, irritancy, phellodendron amurense

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