



**ANGIOGENIC EFFECT OF *Abelmoschus esculentus* (L.) Moench (OKRA)
FRUIT EXTRACT TO THE CHORIOALLANTOIC
MEMBRANE (CAM) OF A 10-DAY
OLD DUCK EMBRYO**

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ABSTRACT

Angiogenesis is a multi-step, physiological process that involves the generation of new blood vessels from pre-existing vasculature. Okra has phytochemical components known to play key roles in the prevention of degenerative processes such as cancer, tumor growth, and diabetes. This study determined the angiogenic effect of crude *Abelmoschus esculentus* fruit extract on the Chorioallantoic membrane of a 10-day old *Anas luzonica* (duck) egg. The experiment made use of one control group and three treatment groups of varying concentrations of crude *A. esculentus* fruit extract: T0 - control (saline solution), T1 - 100 ppm, T2 - 200 ppm, and T3 - 300 ppm. The treatments were injected to 8-day old duck eggs, left to incubate for 48 hours, and observed. The number of secondary blood vessels of each test embryo were counted using a dissecting microscope. When compared with the control group, the treatment with 100 ppm did not exhibit a significant effect; whereas treatments of 200 ppm and 300 ppm exhibited a significant effect on the CAM by decreasing the number of blood vessels formed. It can be concluded that 200 ppm and 300 ppm of crude *A. esculentus* fruit extract possess angiogenic inhibiting properties on the CAM of the duck embryo without sacrificing its health. Meanwhile, the treatment with 100 ppm had no significant effect on the suppression of angiogenesis. The phytochemical components present in okra are flavonoids, tannins, sterols, triperenes, and quercetin. These constituents are present in the okra fruit and are responsible for the angiogenesis inhibition on the CAM.

Keywords: angiogenesis, Abelmoschus esculentus (okra), anti-cancer, chorioallantoic membrane, CAM assay, vascularization



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