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Season variation and starvation period influence on the antithrombotic activity of Leech Saliva extract from the medicinal Malaysian Leech, Hirudinaria manillensis

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Leech therapy has been practiced for a wide range of therapeutical purposes since the extreme old ages. Nowadays, leech application in plastic and microsurgery has been considered as a promising tool. In Malaysia, traditional physicians have used the medicinal leeches as an effective remedy for bloodletting and many body disorders. Leech saliva extract (LSE) was collected after feeding leeches on the phagostimulatory solution through parafilm membrane. The total protein concentration was estimated using Bradford assay. The antithrombin activity was evaluated using the amidolytic assay of the synthetic substrate S-2238 and thrombin time assay in vitro. It was found that LSE could inhibit thrombin-medicated hydrolysis of the substrate. The extract effectively prolonged thrombin time of the citrated plasma in a linear dose-dependent manner. It was found that the extract collected during the dry season was more biologically active than those collected during the rainy season. Likewise, results revealed that the longer the starvation period, the lower the antithrombin activity. For effective utilization of leech therapy or leech products, we recommend to be used during the dry season and after a starvation period not more than 16 weeks.

Key words:

Amidolytic, antithrombin, leeches, leech saliva, thrombin time.

Biography

Abbas Mohammad Ghawi has completed his MSc by 1978 from Cairo University, Egypt and Ph.D by 1985 from University Brisbane, Australia. He has a wide experience, many publications and scientific activities in the field of natural products, traditional medicine, therapy, academic teaching, etc. He is currently a Prof. of Pathology in Department of Basic Medical Science, International Islamic University.

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