

## **In vivo Determination of Anticoagulant Property of the Tentacle Extract of Aurelia aurita (Moon Jellyfish) Using Sprague-Dawley Rats**

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**Abstract :** Moon jellyfish, *Aurelia aurita*, has become a popular research organism for diverse studies. Recent studies have verified the prevention of blood clotting properties of the moon jellyfish tentacle extract through in vitro methods. The purpose of this study was to validate the blood clotting ability of *A. aurita* tentacle extract using in vivo method of experimentation. The tentacles of *A. aurita* jellyfish were excised and filtered then centrifuged at 3000xg for 10 minutes. The crude nematocyst extract was suspended in 1:6 ratios with phosphate buffer solution and sonicated for three periods of 20 seconds each at 50 Hz. Protein concentration of the extract was determined using Bradford Assay. Bovine serum albumin was the standard solution used with the following concentrations: 35.0, 70.0, 105.0, 140.0, 175.0, 210.0, 245.0, and 280.0 µg/mL. The absorbance was read at 595 nm. Toxicity testing from OECD guidelines was adapted. The extract suspended in phosphate-buffered saline solution was arbitrarily set into three doses (0.1mg/kg, 0.3mg/kg, 0.5mg/kg) and were administered daily for five days to the experimental groups of five male Sprague-Dawley rats (one dose per group). Before and after the administration period, bleeding time and clotting time tests were performed. The One-way Analysis of Variance (ANOVA) was used to analyze the difference of before and after bleeding time and clotting time from the three treatment groups, time, positive and negative control groups. The average protein concentration of the sonicated crude tentacle extract was 206.5 µg/mL. The highest dose administered (0.5mg/kg) produced significant increase in the time for both bleeding and clotting tests. However, the preceding lower dose (0.3mg/kg) only was significantly effective for clotting time test. The protein contained in the tentacle extract with a concentration of 206.5 mcg/mL and dose of 0.3 mg/kg and 0.5 mg/kg of *A. aurita* elicited anticoagulating activity.

**Keywords :** anticoagulant, bleeding time test, clotting time test, moon jellyfish

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