

## Distribution of 9-methoxycanthin-6-one from the intact plant parts and callus cultures of *Eurycoma longifolia* (Tongkat Ali)

### ABSTRACT

Study was carried out to determine 9-methoxycanthin-6-one distribution in intact plants and callus cultures of *Eurycoma longifolia*. Qualitative analysis using TLC revealed that the compound 9-methoxycanthin-6-one was present in leaves, petioles, stem, rachis, tap roots, fibrous roots, cotyledons and embryo of the in vivo plants. The quantitative analysis using HPLC showed that the highest concentration of 9-methoxycanthin-6-one content was found in tap roots (4.10 mg.g<sup>-1</sup> dry weight (DW)) followed by fibrous roots (3.91 mg.g<sup>-1</sup> DW), rachis (2.10 mg.g<sup>-1</sup> DW), cotyledons (1.44 mg.g<sup>-1</sup> DW) and embryo (0.84 mg.g<sup>-1</sup> DW). Petioles stem and leaves had relatively low concentrations compared to other intact plant parts, with 0.15 mg.g<sup>-1</sup> DW, 0.12 mg.g<sup>-1</sup> DW and 0.08 mg.g<sup>-1</sup> DW, respectively. Compound 9-methoxycanthin-6-one was also present in callus tissues derived from different explants. The highest concentration was detected in fibrous root-derived callus (7.12 mg.g<sup>-1</sup> DW tissues), followed by stem-derived callus (4.18 mg.g<sup>-1</sup> DW tissues), leaf-derived callus (2.17 mg.g<sup>-1</sup> DW tissues), embryo-derived callus (2.03 mg.g<sup>-1</sup> DW tissues), rachis-derived callus (1.25 mg.g<sup>-1</sup> DW tissues), tap root-derived callus (0.96 mg.g<sup>-1</sup> DW tissues), petiole-derived callus (0.61 mg.g<sup>-1</sup> DW tissues) and cotyledon-derived callus (0.18 mg.g<sup>-1</sup> DW tissues). From the comparison between the data of using callus tissues and intact plant parts, it has shown that the higher concentration of 9-methoxycanthin-6-one of more than 73.7 % was detected in callus tissues.

**Keyword:** *Eurycoma longifolia*; Callus; 9-methoxycanthin-6-one