Abstract

Abrus precatorius, widely known for its medicinal properties, accumulates triterpenoid saponins, which includes abrusoside in the leaves and glycyrrhizin in the roots. Nonetheless, the innate accumulation of the compounds in this plant is limited, which requires strategies to increase the biosynthesis process. This study investigates the effects of foliar applications of salicylic acid treatment on the triterpenoid saponins content in the leaves and roots of *Abrus precatorius*. The phytohormone, salicylic acid, is known to play a role as a signaling molecule in the plant defence mechanisms. This stimulates the activation of the genes related to the production of the secondary metabolites. In this study the effect of salicylic acid treatment to boost the accumulation of triterpenoid by triggering the defence related pathways were analysed. The treatments were found affecting plant growth indicated by the dose-dependent increase in the plant biomass and height at higher salicylic acid concentrations. The semi-quantitative analysis using the Liebermann-Burchard test and UV/Vis spectrophotometer showed that there is a significant increase in saponin content in both leaves and roots from the 200 µM treatment. These results show the potential of salicylic acid as an elicitor to enhance production of triterpenoid saponin, allowing further optimization for pharmaceutical applications.

Keywords: *Abrus precatorius*, triterpenoids, saponin, Salicylic Acid, semi-quantitative analysis