

High-resolution chemical profiling and antiparasitic potential of the tropical shrub *Dillenia suffruticosa*

ABSTRACT

The aquaculture industry is growing rapidly throughout the world, but due to intensification, fish hatcheries are often faced with infestations of parasites, which can lead to economic loss. Among these parasites, the leech *Zeylanicobdella arugamensis* (Hirudinea: Piscicolidae) has been reported to impact hybrid groupers and other hosts. The objective of this study was to test the antiparasitic potential of chromatographic fractions of a crude methanolic extract of the tropical shrub *Dillenia suffruticosa*. The phytochemical composition of the shrub was determined using high-resolution liquid chromatography (LC)–quadrupole time-of-flight (QTOF)–mass spectrometry (MS) to narrow down the metabolites responsible for its antiparasitic properties. Seven fractions of a methanolic extract of *D. suffruticosa* were obtained through flash column chromatography. Various concentrations of the fractions were prepared and tested against *Z. arugamensis*. In the bioassay conducted with fresh leeches, significant mortality was induced by fraction 6 at 31.66 ± 4.88 min, followed by fraction 5 (39.58 ± 2.94 min), fraction 3 (63.75 ± 6.61 min) and fraction 4 (65.25 ± 4.98 min). Chemical profiling using LC–QTOF–MS identified 17 secondary metabolites comprising triterpenoids, sterols, flavones, a glycoside, a non-flavone phenolid, a pyrrolizine, a fatty acid and a fatty amide. Thus, our study indicated that the *D. suffruticosa* fractions contained potent bioactive compounds with antiparasitic potential.