

Antifungal Activity of Lectin Preparation from *Microgramma vacciniifolia* Rhizome

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INTRODUCTION: Fungi belonging to *Colletotrichum* and *Fusarium* genera cause damages to plant health and can infect humans. Lectins are carbohydrate-binding proteins that have been reported to exert antifungal activity. Rhizomes of *Microgramma vacciniifolia* contain a chitin-binding lectin (MvRL) with antifungal activity against *Fusarium oxysporum* f. sp. *lycopersici*. **OBJECTIVE:** This work evaluated the effect of a lectin preparation from *M. vacciniifolia* rhizome on growth of *Colletotrichum gloeosporioides*, *Fusarium decemcellulare*, *Fusarium lateritium*, *Fusarium moniliforme* and *Fusarium solani*. **METHODOLOGY:** Lectin preparation was obtained following a previously established protocol (Int. Biodeter. Biodegr. 75:158-166, 2012). Rhizome extract was prepared by homogenization of rhizome powder in 0.15 M NaCl (10%, w/v) for 16 h at 25°C. After filtration and centrifugation (3000 g, 15 min), the proteins were precipitated with ammonium sulphate (60% saturation). The precipitate (F0-60) was dialysed (4 h) against 0.15 M NaCl. The fungi were cultivated for 7 days at 28°C in Potato-Dextrose-Agar (PDA). To evaluate the antifungal activity, F0-60 (50 µl; 50 µg of protein) was smeared on PDA medium in Petri plates (90 x 15 mm) and then a fungal mycelium disk (0.625 cm in diameter) was put in the center of the plate. In control, it was used 0.15 M NaCl. The plates were incubated at 28°C for 72 h. Assays were performed in triplicate. **RESULTS AND DISCUSSION:** F0-60 inhibited the growth of *C. gloeosporioides* (78%), *F. decemcellulare* (56%), *F. lateritium* (60%), *F. moniliforme* (37%) and *F. solani* (52%), in comparison with the respective controls. The antifungal activity of F0-60 may be linked to the interaction of MvRL with glycidic components (such as chitin) present in the fungal cell wall. **CONCLUSION:** Preparation from *M. vacciniifolia* rhizome rich in lectin showed antifungal activity against phytopathogens, which stimulates further studies on the biotechnological potential of this protein.

Key words: *Microgramma vacciniifolia*; lectin; *Fusarium*; *Colletotrichum*.
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