

## **Serine Proteases and Lipases Secreted by the Entomopathogenic Fungus *Beauveria bassiana***

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Five isolates of the entomopathogenic fungus *Beauveria bassiana* with high virulence against the scale insect *Dactylopius spp* (Hemiptera: Dactylopiidae), a serious pest of the cactus palm in the NE of Brazil, were characterized using lipase and protease substrates. The aim of the study was to correlate enzyme activity as a possible pathogenicity factor due to the fact that this scale insect produces a waxy protective secretion which the fungi breakdown during the infection process. The five isolates (LCB52; LCB53; LCB55; LCB62; LPP19) were cultured on locust cuticle liquid media and samples removed following 2, 4 and 11 days. The samples were filtered and tested for protease activity using Bz-PheValArg-NA, Succinyl-AlaAlaProPhe-NA and SDS-PAGE Gelatin activity gels. Lipase activity was determined using a gravimetric method. The results showed that the highest levels of trypsin-like activity were associated with isolate LCB53. SDS-PAGE activity gels demonstrated that isolate LCB53 expressed 5 major proteases with a wide range of molecular masses. LPP19 and LCB55 expressed two major proteases of high molecular mass, although with lower overall activity than LCB53. LCB52 and LCB62 only demonstrated trace activity "in gel". However, lipase activity was only detected in culture filtrates of LCB62 and LCB55 when using olive oil as a substrate. Further characterization of these isolates is being carried out in our laboratories.

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