

Effect of cuticular compounds on the elastase activity of the entomopathogenic fungus *Conidiobolus coronatus*E Wloka¹, M Golebiowski², M Ligeza-Zuber¹, A Kaczmarek¹, M Kazek¹, A Wronska¹ and M Bogua¹¹Witold Stefanski Institute of Parasitology-Polish Academy of Sciences, Poland²University of Gdansk, Poland

Entomopathogenic fungi are important natural regulatory factors of insect populations. They invade insects through the cuticle by a combination of mechanic pressure and enzymatic degradation. Insecticidal fungi produce several cuticle degrading proteases, chitinases and lipases. Among proteases of soil fungus *Conidiobolus coronatus*, elastase seems to play a key role in the hydrolysis of cuticle. Although mechanisms of enzymatic degradation of cuticle are intensively studied, the reasons of insects' differential susceptibility to fungal infection remain obscure. Susceptibility or resistance of various insect species to fungal invasion may result from the species-specific composition of the cuticle. We have examined effects of supplementation of the *C. coronatus minimal* culture medium with compounds previously detected in insect cuticle, on the activity of *C. coronatus* elastase. As additives elastin, chitin, N-acetylglucosamine, 11 fatty alcohols, 16 fatty acids, tocopherol acetate, butyl oleate, glycerol oleate, squalene and butyl stearate were used. It was found that cuticular compounds have various effects on the elastase activity: elastin, fatty acids C13:0 and C14:1 increased the elastase activity, whereas, fatty acid C26:0 and squalene decreased elastolytic activity. Obtained data suggested that cuticular compounds repressing activity of elastase might be responsible, at least in part, for the resistance to fungal infection.

Biography

E Wloka has completed her PhD from the Institute of Parasitology-PAS. She has published 20 conference reports, 12 original papers (9 in the JCR journals) and 4 other publications in the JCR journals which are currently in the press. In 2012 and 2013 she obtained the Prize of the Director of the Institute of Parasitology for Scientific Achievements. She has participated in 28 training sessions dedicated to various laboratory techniques. Since 2014, she has been active as a Local Coordinator of the Science Festival (event organized in Poland by scientists for people not related to science).

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