Purification and Partial Characterization of an Extracellular Melanoprotein from the Fungus *Venturia inaequalis*

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Z. Naturforsch. **60 c,** 109–115 (2005); received August 24/September 20, 2004

The fungus *Venturia inaequalis* clone No. 36 isolated from *Malus domestica* cv. Gloster excretes a melanoprotein of 36 kDa in relatively high amounts during growth in liquid culture. The protein was isolated from the culture medium and purified to homogeneity. It was shown to contain melanin. After raising an antiserum against the isolated protein, the protein could be shown to be located in the apoplast fluid of the *V. inaequalis* infected *Malus domestica* cv. Elstar. Partial sequencing of the protein revealed no significant sequence homologies to so far sequenced proteins. The melanoprotein binds ferrous and ferric iron. Moreover, it could be shown that the binding of ferric iron (but not of ferrous iron) leads to a change in the absorbance of the protein suggesting a modification of the protein by ferric, but not by ferrous, iron. In addition to iron, the protein also binds copper, but does not bind manganese or nickel. A possible function of this protein in the recruiting and transport of iron and copper and/or in the protection of the fungus by metal-ion mediated oxidative stress is discussed.

Key words: Apoplast, Melanoprotein, *Venturia inaequalis*