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Evaluating Antifungal Potential of Respiratory Inhibitors against Phyto-Pathogenic Fungi

Authors : Sehrish Iftikhar, Ahmad Ali Shahid, Kiran Nawaz, Waheed Anwar

Abstract : Discovery and development of new compounds require intense studies in chemistry, biochemistry. Numerous experiments under laboratory-, greenhouse- and field conditions can be performed to select suitable candidates and to understand their full potential. Novel fungicides are fundamental to combat plant diseases. Fusarium solani is important plant pathogen. New broad spectrum foliar fungicides against complex II were designed in this study. Complex II, namely succinate dehydrogenase (SDH), or succinate quinone oxidoreductase (SQR) is a multi-subunit enzyme at the crossroads of TCA and ETC at the inner mitochondrial membrane. The need for new and innovative fungicides is driven by resistance management, regulatory hurdles and increasing customer expectations amongst others. Fungicidal activity was assessed for the effect on mycelial growth and spore germination of the fungi using fungicide amended media assay. In mycelial growth assay compounds C10 and C6 were highly active against all the isolates. The compounds C1 and C10 were found most potent in spore germination test. It fully proved that the SDHIs designed in this paper displayed as good inhibitory effects against Fusarium solani.

Keywords : Wilt, Fusarium, SDH, antifungal
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