GUIDELINES FOR WRITING ABSTRACTS

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Example

RNA SILENCING OF THE TRICHOTHECENE BIOSYNTHESIS GENE *TRI6* IN *FUSARIUM CULMORUM*. B. Scherm[1], M. Orrù[1], V. Balmas[1], T.M. Hammond[2], N.P. Keller[2], and Q. Migheli[1]. *[1]Dipartimento di Protezione delle Piante, Università degli Studi di Sassari, Via E. De Nicola 9, I-07100 Sassari, Italy and [2]Department of Plant Pathology, University of Wisconsin, Madison, USA; Fax: +++39079229316; E-mail: qmigheli@uniss.it*

Post-transcriptional regulation of eukaryotic genes through interception and degradation of mRNA is known as RNA silencing. This mechanism is activated by an RNAse III enzyme, which digests double-stranded RNA (dsRNA) molecules into 21- to 25-bp fragments. These fragments (siRNAs) are incorporated into a complex of proteins, the "RNA-induced silencing complex" (RISC), which uses the incorporated siRNAs to target and degrade mRNA with complementary sequences. It was recently demonstrated that inverted repeat transgenes (IRT) are efficient activators of RNA silencing in fungal species. The aim of this study was to evaluate whether RNA silencing could be applied to suppress mycotoxin production in the plant pathogen *F. culmorum* (W.G. Smith) Sacc., incitant of crown and foot rot on wheat. Transformation of a highly virulent strain of *F. culmorum* with IRT containing sequences corresponding to the trichothecene biosynthesis gene *tri6* was achieved by using the hygromycin B resistance gene *hph* as selectable marker in PEG-mediated co-transformation of fungal protoplasts. The pattern of integration indicates that most transformants underwent homologous recombination events with partial deletion of the endogenous *tri6* gene. A subset of transformants possessing both the endogenous gene and the *tri6*-specific IRT construct were selected for further studies. The *tri6*-specific IRT did not alter physiological characteristics, such as spore production, pigmentation, and growth rate on solid media. Pathogenicity assays are being carried to evaluate whether impairment in deoxynivalenol production in the *tri6*-IRT strains correlates with a loss of virulence.