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Designing a SCAR molecular marker for monitoring *Trichoderma* cf. *harzianum* in experimental communities

Key words: ***Trichoderma* cf. *harzianum*, SCAR, Molecular marker, Experimental fungal communities**

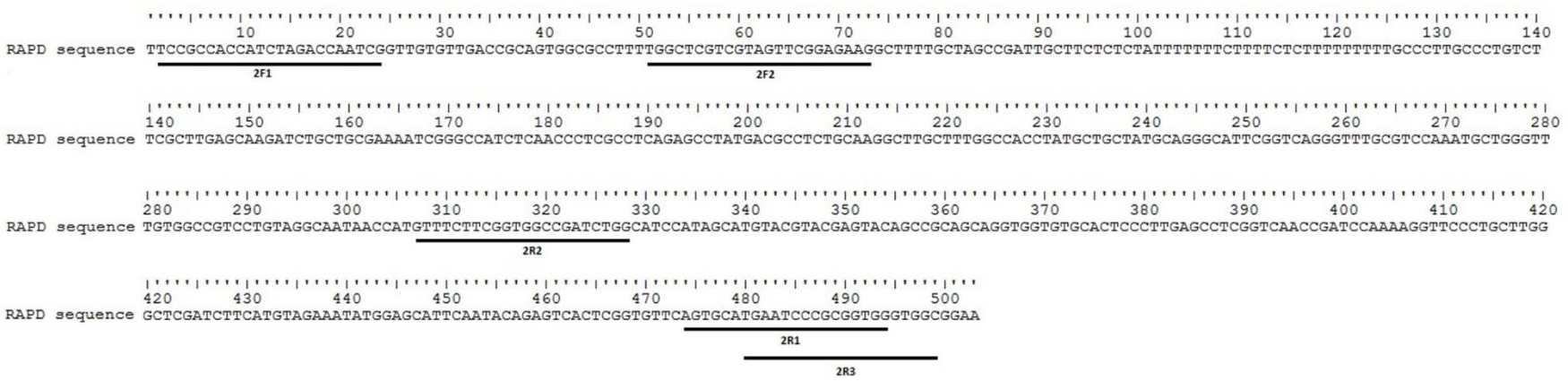
Research summary

The aim of this work was to develop a species-specific SCAR (Sequence-Characterized Amplified Region) marker to monitor the growth of *T.* cf. *harzianum* when it invades and colonizes experimental fungal communities. SCAR marker was derived from RAPD assays and the design of primers was focused on obtaining a molecular marker useful for a wide range of *T.* cf. *harzianum* strains.

Experimental procedure

- Identification of a common band to all the *T.* cf. *harzianum* strains from polymorphic RAPD patterns.
- Sequencing of the RAPD band and design of SCAR primers.
- Evaluation of SCAR primers: PCR and qPCR optimization; specificity and sensibility evaluation.
- Monitoring of *T.* cf *harzianum* in experimental fungal communities.

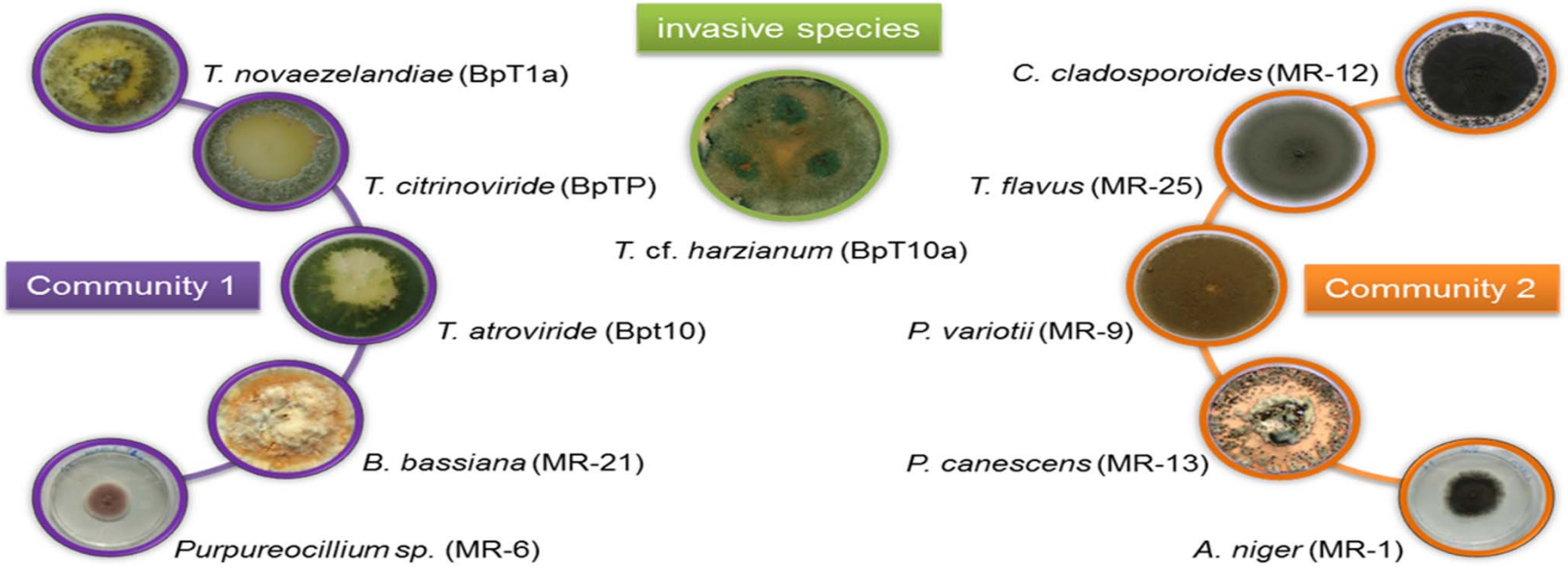
Design of SCAR primers



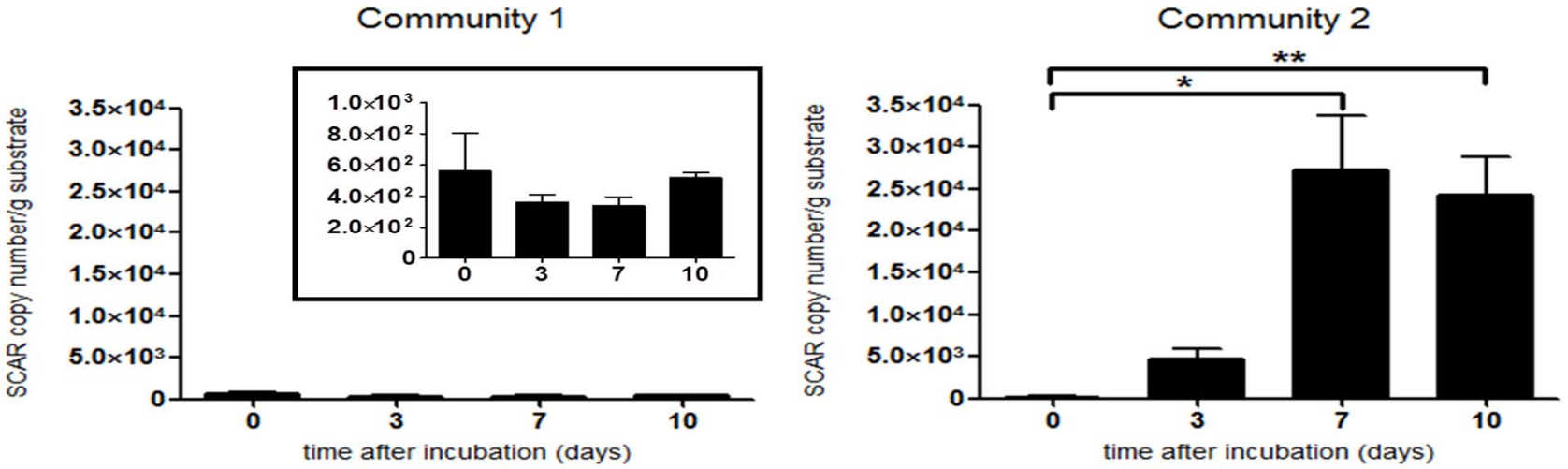
Characteristics of SCAR primers

SCAR-primer	Sequence (5'-3')	Positions in the RAPD fragment	%GC	Tm (°C)
2F1	TCCGCCACCATCTAGACCAATCG	2-23	56.5	58.28
2F2	TGGCTCGTCGTAGTTCGGAGAAG	51-73	56.5	58.26
2R1	CCACCGCGGGATTCATGCACT	474-494	65.0	58.68
2R2	CCAGATCGGCCACCGAAGAAAC	307-328	59.1	57.92
2R3	GCCACCCACCGCGGGATTCA	480-499	70.0	61.78

Setup of experimental communities



Monitoring of *T.* cf. *harzianum* in experimental fungal communities



Highlights

- **The developed SCAR marker can be used as a highly sensitive diagnostic tool, either by conventional PCR or qPCR, for tagging *T.* cf. *harzianum* populations in experimental fungal communities.**
- **In addition, it can be used as a quality control system to confirm the identity of *T.* cf. *harzianum* in the industrially batch production of this fungus to market it as a biocontrol agent.**



T. cf. *harzianum* (BpT10a)