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A novel SCAR marker for detecting *Psathyrostachys huashanica* Keng chromatin introduced in wheat

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ABSTRACT. In this study, we cloned and sequenced a 938-base pair polymorphic band, pHs27, in the tightly linked random amplified polymorphic DNA marker OPU10 and converted it into a sequence-characterized amplified region (SCAR) marker referred to as RHS141, which was specific for the Ns genome of *Psathyrostachys huashanica*. A GenBank basic local alignment search tool search showed that the sequence of pHs27 had no primary sequence homology with known sequences, and Southern blotting confirmed this result. This SCAR marker was used to detect Ns genome chromatin in wheat, and it was successfully amplified in *P. huashanica* itself, a complete set of wheat-*P. huashanica* disomic addition lines (1Ns-7Ns), and undetermined homoeologous group addition lines. This SCAR marker will be a powerful tool for the marker-assisted selection of *P. huashanica* chromosome(s) in a wheat background, and it should also allow wheat breeders to screen for the excellent traits found in *P. huashanica* chromatin.

Key words: Marker-assisted selection; *Psathyrostachys huashanica*; RAPD; Repetitive sequence; SCAR; Wheat

