# **Development of High-throughput DNA Markers for Improvement of Scab Resistance in Wheat. (C01bai130329-Oral)**

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## Abstract:

Wheat scab (Fusarium graminearum Schwabe) causes severe reductions in grain yield and quality of wheat. Because large environmental variation associates with disease evaluation, molecular markers for scab resistance genes will greatly enhance selection for resistance. To improve efficiency of marker analysis, multiplexing AFLP and SSR protocols were optimized for high-throughput genotyping of wheat mapping populations with LI-COR IR2 DNA Sequencer. To facilitate application of molecular markers linked to 3BS major QTL for scab resistance in breeding program, AFLPs tightly linked to the QTL have been converted into simple STS markers which can be directly used in wheat breeding programs. SSR and STS markers tightly linked to the 3BS QTL were also validated in diverse breeding populations. The feasibility and efficiency of using these markers for MAS was evaluated in different generations of breeding populations. The results will facilitate marker-assisted breeding and enhancement of scab resistance in wheat.

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