Medicago truncatula EST-SSRs as a Source of Cross Species Markers for Legumes. (C07-mian094428-Oral)

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Abstract:

The development of SSR markers from genomic libraries is expensive and inefficient. On the contrary, the development of EST-SSR markers is efficient and inexpensive. Also, since the EST-SSRs are derived from expressed genes they may be useful for cross-referencing genes between related species for comparative genomic studies. The availability of SSR markers in most Medicago spp. (including alfalfa) and many important food legumes remains low. We have developed more than 400 high quality SSR markers from the publicly available EST database of M. truncatula. These markers were tested on six Medicago forage species. The majority of these markers (>80%) are transferable to these species including alfalfa. High levels of polymorphism (>50%) of markers were observed both within and among these Medicago species. A subset of the markers was tested on six other legume crops (chick pea, garden pea, lentil, peanut, white clover, and soybean). The rate of transferability of the markers to these legume crops is generally low (<20%). Our results indicate that the SSR markers developed from M. truncatula ESTs will be valuable genetic markers for plants in Medicago species and to a lesser extent to other food legume crops.

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