Cloning of Resistance Gene Analogs in Wheat. (C07costa102240-Poster)

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Abstract:

Based on sequence similarities of resistant genes cloned from diverse plant taxa so called Resistance Gene Analog (RGA) have been isolated from wheat by using degenerate primers and PCR. The primers RGA1, RGA4, RGA8 and Kin-LRR were used to isolate related sequences in wheat. One clone (Kin2-4-59) shared 86% identity with the wheat resistance gene Cre3. while the other clone (Kin2-19-3) shared 72% identity at the DNA level. Amino acid sequence homology of these clones and the Cre3 locus ranged from 70-90% identity. Phylogenetic analysis of these sequences with the Cre3 gene of wheat and other resistance gene analogs showed two main clusters. One cluster included resistance genes from dicot plant species including the Arabidopsis genes RPM1 and RPS2, the flax gene L6 and the tobacco gene N. A second cluster included the sequences Kin2-4-59 and Kin2-19-3 clustering with resistance gene Cre3. These RGAs from wheat and barley and the wheat resistance genes.

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