

## Sentinels of Disease: A Bioinformatics and Transcriptome Approach to Elucidating Plant Resistance Genes and their Response

## Fluhr, R., Davydov, O., Hadrian, O., Kaplan-Levy, R., Rothan, B., Lund, H.H., Sagi, M., Savaldi-Goldstein, S., Ner-Gaon, H. and Zohar, Y. Department of Plant Sciences, Weizmann Institute of Science

Successful defense against a pathogen requires perception of its whereabouts. In multicellular organisms this ability can be genetic information that is 'hard-wired' into the genome and is called 'innate immunity'. Innate immunity genes are made up of evolutionary conserved motifs. We have discovered new innate immunity genes and combinations by datamining the Arabidospsis genome.

The pathogen transcriptome interacts dynamically with the plant during infection. Microarray

screening of normalized libraries has led to discovery of new fungal pathogenicity targets.

Alternative splicing (AS) amplifies genome complexity. We note an increase in AS rate concomitant to the increase in genome size. Does stress-response alter alternative splicing? We have created a cross-species comparative AS database that will be directed to answer the question of AS dynamics.