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Two-hybrid assay in plants

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In the August issue of Nature Biotechnology, Rajagopal Subramaniam and colleagues from the Université de Montreal describe a system for visualizing protein-protein interactions in living plant cells (*Nature Biotechnology* 2001, **19:**769-772). Their technique is based on an *in vivo*protein-fragment complementation assay in which protein interactions between fusion proteins induce folding and reassembly of fragments of the murine dihydrofolate reductase (DHFR) enzyme. Protein-protein interactions are monitored by the DHFR inhibitor fluorescein-conjugated methotrexate (fMTX). Subramaniam *et al.* used their assay to examine the interaction between *Arabidopsis* disease-resistance protein NPR1/NIM1 and the basic leucine-zipper protein TGA2. They show that salicylic acid induced NPR1-TGA2 interaction in tobacco or potato cells. This plant two-hybrid system should prove useful for the functional annotation of plant genomes.

References

1. *Nature Biotechnology*, [http://www.nature.com/nbt/]

2. Université de Montreal , [http://www.umontreal.ca]

3. Clonal selection and *in vivo* quantitation of protein interactions with protein-fragment complementation assays.

4. The *Arabidopsis NPR1* gene that controls systemic acquired resistance encodes a novel protein containing ankyrin repeats