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Stress-induced recombination

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Somatic recombination is a mechanism by which plants can acquire the genetic variability that enables them to respond to environmental stress conditions. In an Advanced Online Publication in *Nature Genetics*, Lucht *et al.* report the effect of biotic stress on somatic recombination and plant genome stability (February 11, DOI:10.1038/ng846). They used transgenic *Arabidopsis thaliana* lines that carry a disrupted β -glucuronidase (GUS) reporter gene that becomes activated by a homologous recombination event. They sprayed transgenic *Arabidopsis* seedlings with a suspension of the **plant pathogen** *Peronospora parasitica* and scored for GUS activation. Infected plants had almost twice as many recombination sectors. Lucht *et al.* also demonstrated a similar effect when they used chemical stimuli, or genetic mutations, which mimic biotic stress by activating the plant pathogen-defense mechanism. These results suggest that the induction of somatic recombination may be a general response to stress and may influence the plant's ability to adapt to environmental conditions.

References

1. Intrachromosomal homologous recombination in whole plants.
2. *Nature Genetics*, [<http://www.nature.com/ng>]
3. *Arabidopsis* as a model host for studying plant-pathogen interactions.