

Plant interaction with friendly bacteria gives pathogens their break

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In two papers to be published in *Current Biology*, researchers from JIC and The Sainsbury Laboratory on the Norwich Research Park, and Rothamsted Research and the University of York identify genes that help plants interact with microbes in the soil.

Professor Giles Oldroyd of the John Innes Centre explains how plant roots form beneficial interactions with [soil microbes](#). Almost all plants associate with [mycorrhizal fungi](#) to help in the uptake of nutrients such as phosphate. Some plants, particularly legumes, also associate with bacteria that 'fix' atmospheric nitrogen into a form the plant can use as fertiliser.

These two interactions are mediated within the plant by a common signalling pathway. The researchers have identified a specific mycorrhizal transcription factor. They also show how the signalling pathway has been recruited by [pathogenic microbes](#), presenting a challenge to the plant. Its ability to form beneficial interactions can leave it vulnerable to invasion by pathogens.

More information: Wang, E., Schornack, S., Marsh, J.F., Gobbato, E., Schwessinger, B., Eastmond, P., Schultze, M., Kamoun, S., and Oldroyd, G.E.D. (2012). A common signaling process that promotes mycorrhizal and oomycete colonization of plants. *Curr. Biol.* Published online November 1, 2012. [dx.doi.org/10.1016/j.cub.2012.09.043](https://doi.org/10.1016/j.cub.2012.09.043)
Gobbato, E., Marsh, J.F., Vernie', T., Wang, E., Maillet, F., Kim, J., Miller, J.B., Sun, J., Bano, S.A., Ratet, P., et al. (2012). A GRAS-type

transcription factor with a specific function in mycorrhizal signalling.
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