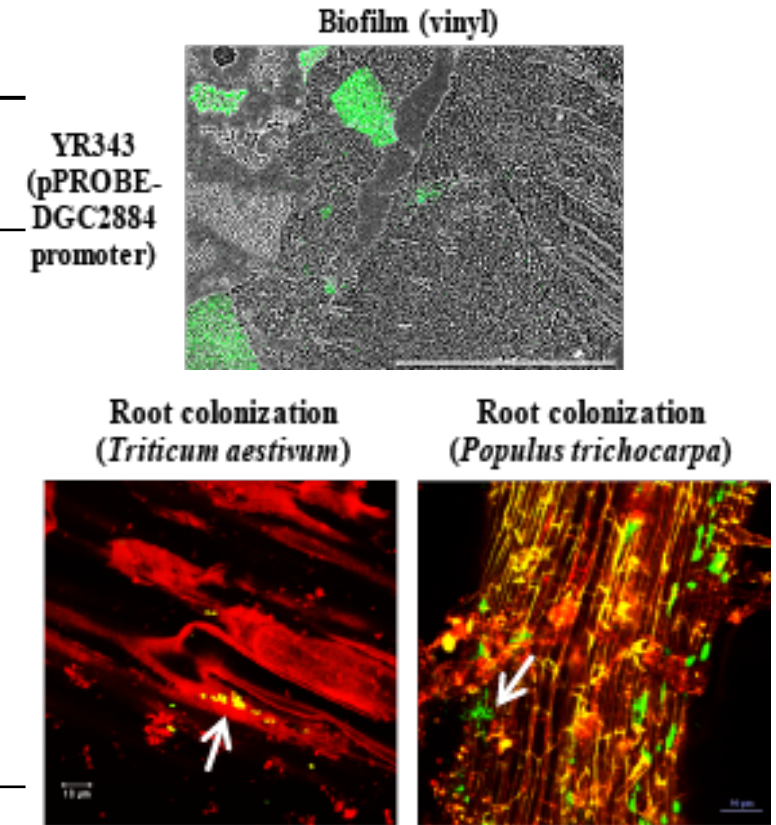


PMI SFA Publication Highlight

Project result: A diguanylate cyclase expressed in the presence of plants allows for discovery of candidate gene products involved in root colonization by *Pantoea* sp. YR343

Objective	<ul style="list-style-type: none"> Identify the genes involved in plant root colonization by <i>Pantoea</i> sp. YR343.
New science	<ul style="list-style-type: none"> A diguanylate cyclase, DGC2884, expressed during biofilm formation and root colonization has been identified using promoter-reporter assays. Characterization of DGC2884 identified the importance of its N-terminal transmembrane domain for localization and enzyme activity. Unique behaviors exhibited by <i>Pantoea</i> sp. YR343 that overexpress DGC2884 allowed development of a mutagenesis screen by which new genes that are affected by root colonization could be identified.
Impact	<ul style="list-style-type: none"> Discovery and characterization of gene products involved in root colonization by <i>Pantoea</i> sp. YR343 allows for understanding of the molecular mechanisms that lead to beneficial plant colonization.



Expression of diguanylate cyclase, DGC2884 (labeled green), from *Pantoea* sp. YR343.

Top figure: Expression during biofilm formation; Bottom two figures: Expression during root colonization of common wheat (*Triticum aestivum*) and poplar (*Populus trichocarpa*).

Bible, A.N., et al. (2021). Identification of a diguanylate cyclase expressed in the presence of plants and its application for discovering candidate gene products involved in plant colonization by *Pantoea* sp. YR343. *PLOS One*. <https://doi.org/10.1371/journal.pone.0248607>