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Streptomyces species are gram-positive filamentous soil bacteria that produce a wide variety of secondary metabolites including antibiotics. Genome sequencing projects of many Streptomyces species have revealed that they have a greater genetic potential to produce over 20 secondary metabolites. However, most of secondary metabolite biosynthetic gene clusters are poorly or not expressed under laboratory growth conditions. Kenji Arakawa's research group focuses on unique biosynthetic machinery of secondary metabolites, their structural redesign, and genome mining for activating silent secondary metabolite biosynthetic genes. The photograph shows various mutants of Streptomyces rochei grown on yeast extract/malt extract/glucose agar medium for 7 days.

This image was contributed by Aiko Teshima at Arakawa's laboratory, Hiroshima University (http://home.hiroshima-u.ac.jp/mbiotech/5lab/Arakawa/intro-J.html).

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