The production of geraniol in wild rose petals appeared thanks to duplications and specializations of the NUDX1 gene during the evolution of Rosaceae.

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Résumé

Wild roses have been used for their perfume since ancient times. They contain hundreds of volatile compounds that combine to give different smells. However, fragrant roses all possess acyclic monoterpenes, which correspond to modifications of the volatile precursor, geraniol. We have previously shown that geraniol is produced by a non-canonical cytosolic pathway that emerged by modifying the function of an ancestral Nudix hydrolase. Here we followed the history of *cis* and *trans* duplications of the *NUDX1* gene in the *Rosaceae* family. We also explained the appearance of its new function in the petals before the domestication of ornamental roses.

*Intervenant

Mots-Clés: Rosaceae, Rosa, Nudix hydrolase, monoterpenes, NUDX1 synteny