

Formation of nudicaulins *In Vivo* and *In Vitro* and the biomimetic synthesis and bioactivity of O-methylated nudicaulin derivatives.

Dudek B, Schnurrer F, Dahse HM, Paetz C, Warskulat AC, Weigel C, Voigt K, Schneider B (2018) Formation of nudicaulins *In Vivo* and *In Vitro* and the biomimetic synthesis and bioactivity of O-methylated nudicaulin derivatives. *Molecules* 23(12), 3357.

Details



Abstract

Nudicaulins are yellow flower pigments accounting for the color of the petals of Papaver nudicaule (Papaveraceae). These glucosidic compounds belong to the small group of indole/flavonoid hybrid alkaloids. Here we describe *in vivo* and *in vitro* experiments which substantiate the strongly pH-dependent conversion of pelargonidin glucosides to nudicaulins as the final biosynthetic step of these alkaloids. Furthermore, we report the first synthesis of nudicaulin aglycon derivatives, starting with quercetin and ending up at the biomimetic fusion of a permethylated anthocyanidin with indole. A small library of nudicaulin derivatives with differently substituted indole units was prepared, and the antimicrobial, antiproliferative and cell toxicity data of the new compounds were determined. The synthetic procedure is considered suitable for preparing nudicaulin derivatives which are structurally modified in the indole and/or the polyphenolic part of the molecule and may

have optimized pharmacological activities.

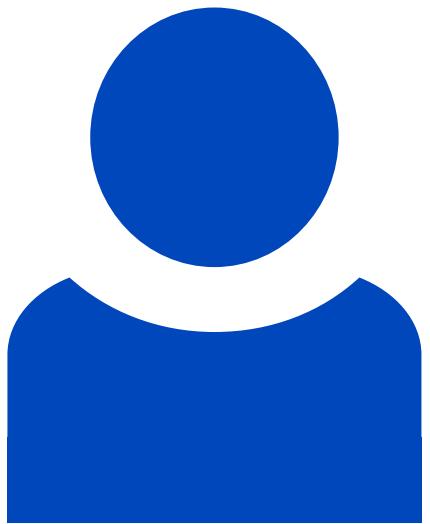
Involved units

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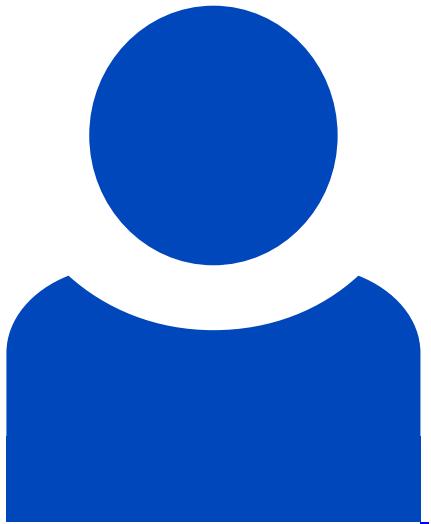
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