



Histolocalization and physico-chemical characterization of dihydrochalcones: Insight into the role of apple major flavonoids

Submitted by Emmanuel Lemoine on Thu, 02/12/2015 - 13:14

Titre	Histolocalization and physico-chemical characterization of dihydrochalcones: Insight into the role of apple major flavonoids
Type de publication	Article de revue
Auteur	Gaucher, Matthieu [1], Dugé de Bernonville, Thomas [2], Lohou, David [3], Guyot, Sylvain [4], Guillemette, Thomas [5], Brisset, Marie-Noëlle [6], Dat, James F. [7]
Editeur	Elsevier
Type	Article scientifique dans une revue à comité de lecture
Année	2013
Langue	Anglais
Date	2013/06
Pagination	78 - 89
Volume	90
Titre de la revue	Phytochemistry
ISSN	0031-9422
Mots-clés	Antimicrobial activity [8], Dihydrochalcones [9], Histolocalization [10], Iron chelation [11], Malus x domestica [12], Phloretin [13], Phloridzin [14], Rosaceae [15], Sieboldin [16]
Résumé en anglais	Flavonoids, like other metabolites synthesized via the phenylpropanoid pathway, possess a wide range of biological activities including functions in plant development and its interaction with the environment. Dihydrochalcones (mainly phloridzin, sieboldin, trilobatin, phloretin) represent the major flavonoid subgroup in apple green tissues. Although this class of phenolic compounds is found in very large amounts in some tissues (≈ 200 mg/g of leaf DW), their physiological significance remains unclear. In the present study, we highlight their tissue-specific localization in young growing shoots suggesting a specific role in important physiological processes, most notably in response to biotic stress. Indeed, dihydrochalcones could constitute a basal defense, in particular phloretin which exhibits a strong broad-range bactericidal and fungicidal activity. Our results also indicate that sieboldin forms complexes with iron with strong affinity, reinforcing its antioxidant properties and conferring to this dihydrochalcone a potential for iron seclusion and/or storage. The importance of localization and biochemical properties of dihydrochalcones are discussed in view of the apple tree defense strategy against both biotic and abiotic stresses.
URL de la notice	http://okina.univ-angers.fr/publications/ua7882 [17]
DOI	10.1016/j.phytochem.2013.02.009 [18]
Lien vers le document	http://dx.doi.org/10.1016/j.phytochem.2013.02.009 [18]

Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=11924](http://okina.univ-angers.fr/publications?f[author]=11924)
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=12293](http://okina.univ-angers.fr/publications?f[author]=12293)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=12726](http://okina.univ-angers.fr/publications?f[author]=12726)
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=11925](http://okina.univ-angers.fr/publications?f[author]=11925)
- [5] <http://okina.univ-angers.fr/thomas.guillemette/publications>
- [6] <http://okina.univ-angers.fr/m.brisset/publications>
- [7] [http://okina.univ-angers.fr/publications?f\[author\]=11926](http://okina.univ-angers.fr/publications?f[author]=11926)
- [8] [http://okina.univ-angers.fr/publications?f\[keyword\]=9335](http://okina.univ-angers.fr/publications?f[keyword]=9335)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=11898](http://okina.univ-angers.fr/publications?f[keyword]=11898)
- [10] [http://okina.univ-angers.fr/publications?f\[keyword\]=12277](http://okina.univ-angers.fr/publications?f[keyword]=12277)
- [11] [http://okina.univ-angers.fr/publications?f\[keyword\]=12278](http://okina.univ-angers.fr/publications?f[keyword]=12278)
- [12] [http://okina.univ-angers.fr/publications?f\[keyword\]=12279](http://okina.univ-angers.fr/publications?f[keyword]=12279)
- [13] [http://okina.univ-angers.fr/publications?f\[keyword\]=12280](http://okina.univ-angers.fr/publications?f[keyword]=12280)
- [14] [http://okina.univ-angers.fr/publications?f\[keyword\]=12281](http://okina.univ-angers.fr/publications?f[keyword]=12281)
- [15] [http://okina.univ-angers.fr/publications?f\[keyword\]=12137](http://okina.univ-angers.fr/publications?f[keyword]=12137)
- [16] [http://okina.univ-angers.fr/publications?f\[keyword\]=12282](http://okina.univ-angers.fr/publications?f[keyword]=12282)
- [17] <http://okina.univ-angers.fr/publications/ua7882>
- [18] <http://dx.doi.org/10.1016/j.phytochem.2013.02.009>

Publié sur *Okina* (<http://okina.univ-angers.fr>)