GREEN CHEMISTRY FOR SUSTAINABLE DEVELOPMENT AT L'OREAL: SYNTHESIS OF NEW *C*-GLYCOSIDES OF LARGE INTEREST IN COSMETICS

Michel Philippe
L'Oreal Recherche, Aulnay-sous-bois, France
mphilippe@rd.loreal.com

The description of L'Oreal's Research and Development and its commitment to green and sustainable chemistry are developed.
The latter is directly linked to a socially responsible business (1).

L'Oreal's "green methodology" is based on the basic principles of green chemistry as defined by P. Anastas and J. Warner (2).

To develop sourcing innovation, greater emphasis is placed on three main principles:

- the use of renewable raw materials from plants,
- the development of environmentally friendly processes,
- and the manufacture of low ecotoxicity and biodegradable ingredients.

The company favours the use of renewable raw materials from plants; today, 40% of ingredients used are sourced from renewable plants.
Among these raw materials, carbohydrates represent a unique class of compounds as final products or strategic building blocks to have access to new active ingredients in cosmetics.

Greater emphasis is also placed on the development of new green technologies. L'Oreal has perfected original green routes (3) to produce C-glycosides of interest in our different applications as amphiphilic derivatives or new skin care active ingredients.
These new green routes are discussed in comparison with previous processes.

[1] www.LOREAL.com /Our Company/Sustainable Development;

[2] Anastas P., Warner J.C., Green Chemistry, Oxford University Press, New York, 1998, p. 30);

[3] Lubineau A. *et al*., Chem. Commun., 2000, 2049-2050;
Dalko M., Breton L., WO 2002051828 (L'OREAL);
Philippe M., Semeria D., WO 2002051803 (L'OREAL);
Hersant Y. *et al*., Carbohydrate Research 339 (2004) 741-745.