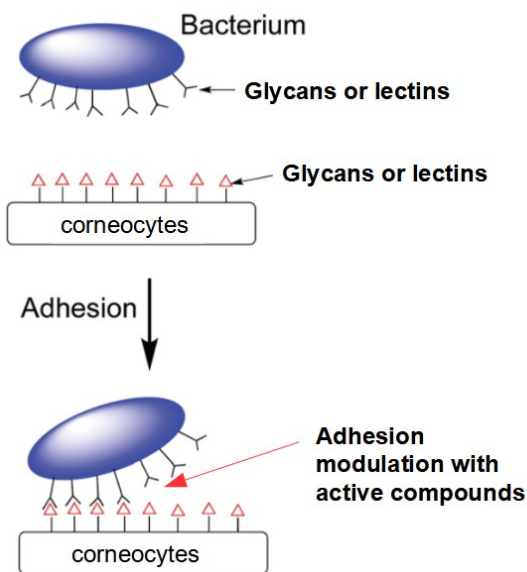


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**Focus on corneocytes/microorganism interaction studies**

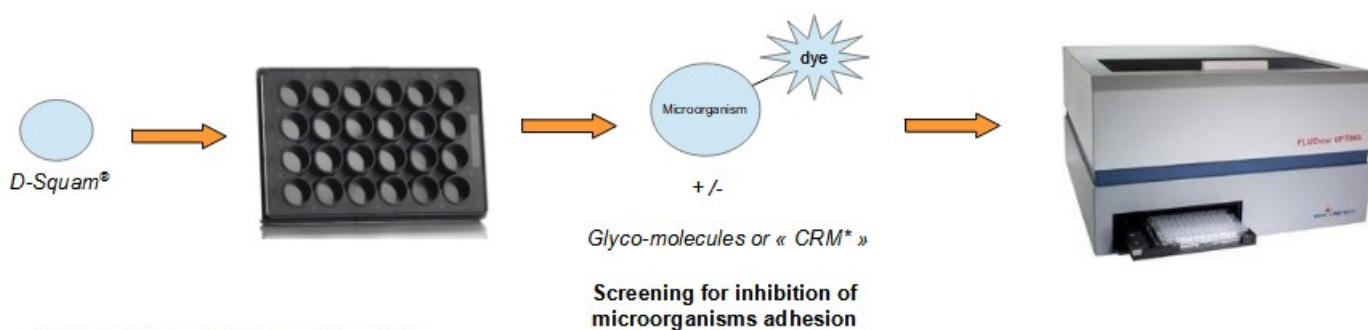


Microbiota's first interaction with skin occurs at the stratum corneum with corneocytes (apoptotic cells from differentiated keratinocytes). Even though corneocytes are biologically inactive, biochemical structures still exist and remain active for molecular recognition. As other cutaneous cells (keratinocytes, fibroblastes or melanocytes), corneocytes have intact glycans structures<sup>1, 2</sup> and specific glycan-binding proteins on there surface. Several previous studies have showed that glyco-molecules could have affinity towards these "glycosidic receptors" and induce biological activities<sup>3</sup>.

At the level of bacteria, fungi and virus, cell surface glycans and glycan-binding proteins are critical factors for pathogenesis, host microbiote interaction, immune modulation, and symbiosis. Hence, those surface-expressed microbial glycan binding proteins can recognize carbohydrate motifs at the surface of corneocytes and vice versa.

Based on this knowledge, we developed a fast and simple method to evaluate the adhesion of microorganisms on corneocytes in presence of glyco-molecules.

**Method:** Simple, High throughput



\*:CRM=Carbohydrate Recognition Motifs

**Applications :**

- Host-microbiota interactions and population modulation.
- Adhesion screening properties of active compounds.
- Rhamnosylated molecules penetration model.

**Bibliography:**

- 1 - Abdayem et al. (2016). *Experimental Dermatol.* 25, 865-871.
- 2 - Dantzberger et al. (2018). *Skin Res Technol.*, 24, 450-458.
- 3 - Faury et al. (2011). *Arch. Gerontol. And Geriat.*, 53, 106-112.

**Contact-us for discussions**

**GLYcoDiag's last publication**

David Goyard, Benoît Roubinet, Federica Vena. Ludovic Landemarre *Homo- and Heterovalent Neoglycoproteins as Ligands for Bacterial Lectins*, ChemPlusChem, 2021, (DOI : 10.1002/cplu.202100481).

New neoglycoproteins grafted with tetravalent glycodendrons presenting  $\alpha$ Gal,  $\beta$ Gal and/or  $\alpha$ Fuc have been developed. Interactions of these neoglycoproteins with *Pseudomonas aeruginosa* lectins: LecA and LecB were evaluated and inhibition values at nanomolar range were obtained.

**Mark on your calendar**

GLYcoDiag will be present in the next In Cosmetics global 2022 in Paris porte de Versailles from Tuesday 5<sup>th</sup> to Thursday 7<sup>th</sup> April 2022.

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