# PhotoAntiBiofilm: Design, synthesis and biological evaluation of photoswitchable glycoligands targeting *Pseudomonas aeruginosa* lectins

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Biofilm formation is one of main causes of bacterial antimicrobial resistance infections. It is known that the soluble lectins LecA and LecB, produced by *Pseudomonas aeruginosa*, play a key role in adhesion, biofilm formation, lung infection and virulence factors. Bacterial lectins are therefore attractive targets for the development of new antibiotic-sparing anti-infective drugs. The objective of the project PhotoAntiBiofilm is to develop original light-sensitive lectins ligands to modulate reversibly lectins activity through visible light irradiation. Despite the great potential of photoswitchable tools, few photochromic lectin ligands have been developed. We have designed and synthesized several azobenzene-based *O*- and *S*-galactosides as the first generation of photoswitchable ligands of LecA of *P. aeruginosa* which displayed excellent photophysical properties and strong affinity for targeted LecA with $K_d$ values in the micromolar range. In this project, hemithioindigoids-based glycoligands will be designed by docking studies, synthesized and their biological activities evaluated.

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