

## DESIGN, SYNTHESIS AND BIOLOGICAL EVALUATION OF SEMI-SYNTHETIC GLYCOCONJUGATES TOWARDS THE PREVENTION OF *SHIGELLA FLEXNERI* 2A INFECTION

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*Shigella flexneri* are Gram-negative enterobacteria responsible for shigellosis or bacillary dysentery. The O-specific polysaccharide moiety (O-SP) of their lipopolysaccharide is the target for protective immunity. Thus, detoxified *S. flexneri* lipopolysaccharide-protein conjugates have been designed as potential vaccines against shigellosis [1]. More recently, chemically defined glycoconjugates, incorporating appropriately chosen synthetic fragments of the natural O-SP, have appeared as a possible alternative to induce an efficient protective humoral response against bacterial infection. The latter approach will be illustrated on the bacterium *S. flexneri* 2a.

2)- $\alpha$ L-Rhap-(1 $\rightarrow$ 2)- $\alpha$ L-Rhap-(1 $\rightarrow$ 3)-[ $\alpha$ D-Glcp-(1 $\rightarrow$ 4)]- $\alpha$ L-Rhap-(1 $\rightarrow$ 3)- $\beta$ D-GlcNAcp-(1 $\rightarrow$  Repeating unit of *S. flexneri* 2a [2]

Based on available antigenicity data, semi-synthetic glycoconjugates were prepared from selected tri- to pentadecasaccharides [3,4] according to a modular approach. Their synthesis, antigenicity, and immunogenicity in a murine model, will be presented. When appropriate, the protective efficacy of the induced sera will be outlined.

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### References:

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