

Glycomimetic Ligands for C-type Lectin Recognition

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C-type lectin receptors (CLRs) represent pivotal sensory mechanisms orchestrating the primary immune response via dendritic cells.¹ The exploration of non-native ligands as molecular tools for the manipulation of CLRs has emerged as a highly interesting research area. In the case of DC-SIGN, one of the most extensively investigated CLRs, glycomimetics have been formulated as principal compounds with a demonstrated capacity to proficiently engage DC-SIGN (Figure 1 and 2). The principal problem encountered refers to the structural complexity and challenging synthetic processes associated with these glycomimetics.

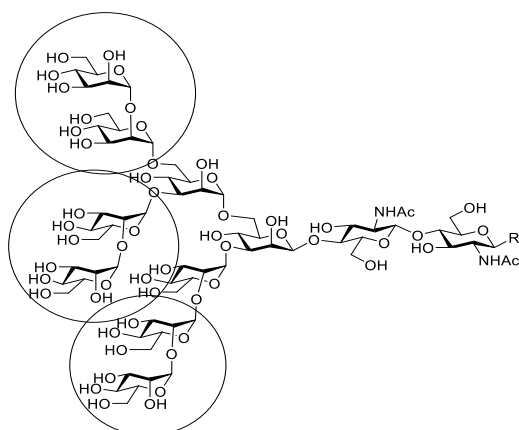


Figure 1. High Mannose type glycans natural ligands for DC-SIGN

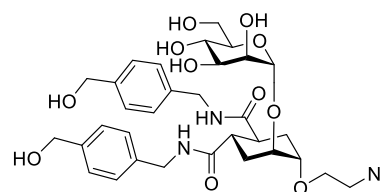


Figure 2. The main glycomimetic ligand for DC-SIGN.

In this context, we introduce a novel class of glycomimetic ligands designed for DC-SIGN that exhibit a simpler structural composition and can be readily synthesized. These ligands hold significant promise for potential applications in the field of immune regulation therapeutic (Figure 3).

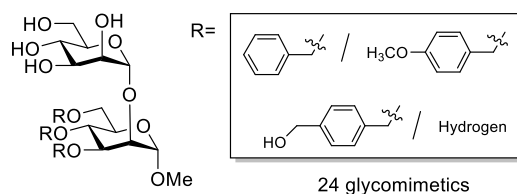


Figure 3. New class of glycomimetic ligands

References

¹Tamburini A, Colombo C., *Medicinal Research Reviews*, **2020**, *40*, 495–531