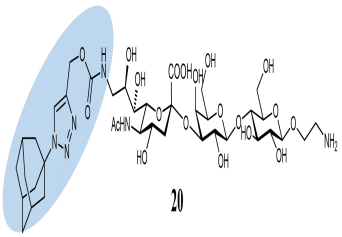

20

Siglec-10

Description

Siglec-10 is an inhibitory receptor expressed on B cells, dendritic cells and leukocytes. Its structure comprises five extracellular domains, two tyrosine-based motifs in its cytoplasmic tail and one Grb2 binding motif close to the membrane.(Duan & Paulson, 2020; Li et al., 2001)

Recent studies showed how tumor-associated macrophages present high levels of Siglec-10, which interacts with CD24, a sialoglycoprotein expressed on tumor cells. This interaction promotes immune evasion. Genetic ablation of either CD24 or Siglec-10, or the blockage of the interaction using monoclonal antibodies, increase the phagocytosis of all CD24-expressing human tumor cells. (Barkal et al., 2019)

Siglec-10 recognizes Î±2-3- or Î±2,6-linked sialoglycans in the micromolar range. Although the crystal structure of Siglec-10 is not available, a recent work that combines NMR, docking and molecular modeling gives some insights into the molecular recognition and binding process mechanism that drive Siglec-10-ligands interactions. (Forgione et al., 2020)

The only known ligand for Siglec-10 is compound 20 (Figure 17), which contains a triazole-linked adamantane group in position 9 of the sialic acid. The same ligand displayed on liposomes bound Siglec-10+ human peripheral blood cells. (Rillahan et al., 2012)

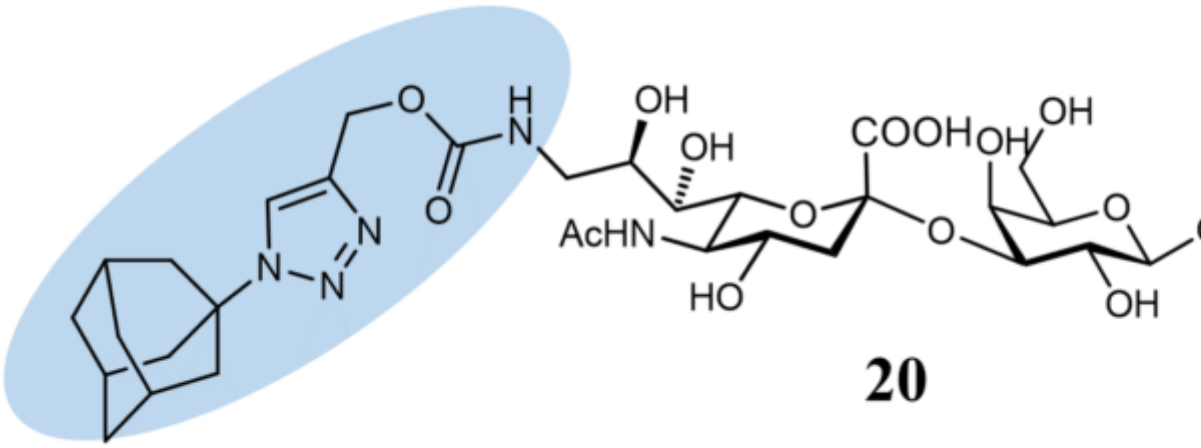

Figure 17. Siglec-10 ligand identified by glycan microarray.

Category

1. News