

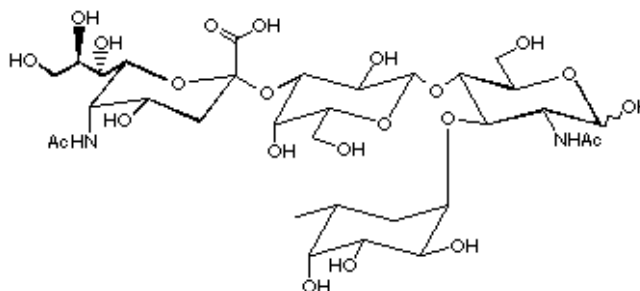
# Molecule of the Month

## Sialyl Lewis X

[Stephen J Isles](#) - HTML markup by [Alan Wilson](#)

Molecule of the Month - November 1996

Carbohydrates are now known to play a vital role in cell-cell recognition processes. One of the most important carbohydrates for humans is the blood group antigen Sialyl Lewis X (SLeX).



The tetrasaccharide SLeX is displayed on the terminus of glycolipids that are present on the surface of white blood cells. It has been shown<sup>1</sup> that SLeX has an important role in inflammation processes. The initial adhesion of white blood cells to a site of injury is mediated by E-selectins which are specific for SLeX. Cell-cell recognition between leukocytes and endothelial cells in blood is believed to occur in part through interactions between lectins and oligosaccharide ligands.

However if too many white blood cells are recruited to one injury site normal cells can also be destroyed leading to conditions such as septic shock and rheumatoid arthritis. Large quantities of SLeX have also been found on the surfaces of certain tumour and cancer cells.

The wide spectrum of biological processes that SLeX is involved in, coupled with the difficulties in obtaining large quantities of the material make it an ideal subject for synthesis. Also the complexity of the structure allows for a wide range of analogues to be prepared.

One of the major problems with the study of bio-active oligosaccharides is obtaining enough of the material for testing. Identifying the structure of the oligosaccharide in question is often a major undertaking<sup>2</sup>. As a result of its interesting biological properties SLeX and its analogues, have been the subject of a number of syntheses.

For an excellent review of the biochemistry of oligosaccharides see<sup>3</sup>.

## References

1 A. Aruffo, Trends Glycosci. Glycotechnol., **1992**, 4, 146.

2 R.A. Dwek, Chem. Rev., **1996**, 96, 683.

3 A. Varki, Glycobiology, **1993**, 3, 97.

Document last modified Tuesday, October 22, 1996 by [Alan Wilson](#).



[Back to Molecule of the Month page.](#)

[DOI:[10.6084/m9.figshare.5469601](https://doi.org/10.6084/m9.figshare.5469601)]

0030118