

## MIMETICS OF THE CARBOHYDRATE LIGANDS FOR NK CELL RECEPTORS ARE EFFECTIVE IN EXPERIMENTAL TUMOR THERAPIES

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32

Dendrimeric carbohydrates are becoming interesting and efficient tools of today's molecular medicine, especially in the area of infectious diseases and tumor therapies [1]. In our laboratory we have identified carbohydrate ligands for important activation antigens of natural killer lymphocytes, NKR-P1 and CD69 [2,3]. Although *N*-acetylhexosamines are the most important monosaccharide ligands, these receptors display a remarkable specificity for the linear and branched oligosaccharide sequences, respectively. Although the search for the optimal oligosaccharides interacting with these receptors has been continuing in our laboratories [4], we have found that *N*-acetylhexosamines can *per se* become very efficient ligands provided they are appropriately clustered through binding to dendrimeric backbones [5]. *N*-acetyl-D-glucosamine-coated dendrimers are high-affinity ligands for NKR-P1A, but not NKR-P1B, the corresponding D-mannose-coated dendrimers are inactive. These dendrimers represent one of the most specific functional marker of active NK cells [6]. The ability of these compounds to activate NK cells through NKR-P1 and receptors associated in the activation membrane microdomain [7] can be used to activate natural killing *in vitro* [8] as well as *in vivo* [9,10]. The relation between the structure and antitumor activities of carbohydrate dendrimers will be discussed from the point of view of (a) active oligosaccharide sequences; (b) linker structures; and (c) the degree of clustering.

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