Oleclumab

National Cancer Institute

Source

National Cancer Institute. Oleclumab. NCI Thesaurus. Code C123914.

A monoclonal antibody against the ectoenzyme CD73 (cluster of differentiation 73), also known as 5'-nucleotidase (5'-NT; ecto-5'-nucleotidase) with potential antineoplastic activity. Upon administration, oleclumab targets and binds to CD73, leading to clustering of and internalization of CD73. This prevents CD73-mediated conversion of adenosine monophosphate (AMP) to adenosine and decreases the amount of free adenosine. This prevents adenosine-mediated lymphocyte suppression and increases the activity of CD8-positive effector cells. This also activates macrophages, and reduces both myeloid-derived suppressor cells (MDSCs) and regulatory T-lymphocytes. By abrogating the inhibitory effect on the immune system and enhancing the cytotoxic T-cell-mediated immune response against cancer cells, tumor cell growth decreases. In addition, clustering and internalization of CD73 decreases the migration of cancer cells and prevents metastasis. CD73, a plasma membrane protein upregulated on a number of cancer cell types, catalyzes the conversion of extracellular nucleotides, such as AMP, to membrane-permeable nucleosides, such as adenosine; it plays a key role in adenosine-mediated immunosuppression within the tumor microenvironment.