Product Datasheet

N-glycolyl GM3 Antibody (14F7)
NBP3-52333

Unit Size: 0.1 mg

Store at 4C short term. Store at -20C long term. Avoid freeze-thaw cycles.

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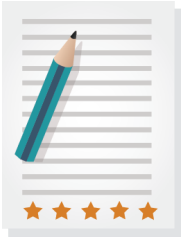

NBP3-52333

N-glycolyl GM3 Antibody (14F7)

Product Information	
Unit Size	0.1 mg
Concentration	1 mg/ml
Storage	Store at 4C short term. Store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Monoclonal
Clone	14F7
Preservative	0.02% Proclin 300
Isotype	IgG1
Purity	Protein A purified
Buffer	PBS

Product Description	
Host	Mouse
Species	Human
Specificity/Sensitivity	Specific for GM3(NeuGc). It does not cross-react with other N-glycolyl or N-acetyl gangliosides nor sulfated glycolipids.
Immunogen	GM3(NeuGc) ganglioside hydrophobically conjugated with human very-low-density lipoproteins (VLDL)

Product Application Details	
Applications	ELISA, Functional, Haemagglutination, In vivo assay
Recommended Dilutions	ELISA, Functional, Haemagglutination, In vivo assay

Application Notes	In an ELISA and TLC assay, it was shown to specifically bind NeuGcGM3. In an IHC assay, it was shown to react with all ductal infiltrating breast carcinoma and melanoma tissues tested but not with samples from lung carcinoma of different histological types or nervous system tumors. Some benign lesions of the breast (such as breast fibrocystic and breast fibroadenoma) showed a positive staining to extracellular secretion. Furthermore, it stained the extracellular secretion of breast glands and mucus cells from the small intestine and large intestine (Carr et al., 2000; PMID: 10952412). The original format of this antibody successfully agglutinated horse erythrocytes, but not those from dog, monkey, or human origin, 4C and 37C in an HA assay. Additionally, the in vitro and in vivo anti-tumor effects of the original format of this antibody were evaluated. High concentrations were needed to induce complement-dependent cytotoxicity (CDC) and antibody-dependent cell-mediated cytotoxicity (ADCC) against the tested murine myeloma cells. Interestingly, the antibody directly killed the target cells without participation of complement. The cytotoxicity was dependent on the temperature, antibody concentration, and the number of the target cells. In vivo, passive treatment produced a strong anti-tumor activity, similar to the anti-tumoral response obtained with standard chemotherapy treatment (Carr et al., 2002; PMID: 12573110). A humanized version of this antibody (human IgG1) was generated and tested for its effect on tumor growth using a melanoma B16 cell line implanted in C57/BL6 mice. It was shown to significantly reduce tumor size and decrease the number of blood vessels in tumors, indicating effective inhibition of angiogenesis (EP1623997B1). The Fab version of this antibody was generated, its crystal structure was examined, and its complex with the NeuGc-GM3 trisaccharide (NeuGcalpha3Galbeta4Glcbeta) was modeled and evaluated in computer-docking studies (Krengel et al., 2004; PMID: 14627696). The original format of this antibody was evaluated in phase I/II clinical trials to assess its toxicity and tumor detection ability in breast cancer patients using immunoscintigraphy. Fourteen women with stage II breast cancer were divided into three groups, receiving escalating doses of the antibody labeled with 99mTc. The trial found that the 1 mg dose was most effective, with 100% of tumors detected in that group. In total, 67% of patients had positive imaging results, with the antibody specifically accumulating in breast tumors, particularly in ductal carcinomas. No significant toxicity was observed (Oliva et al., 2006; PMID: 16322892). The binding affinity of this antibody was measured as KD = 25 nM. Furthermore, this antibody served as the ancestral clone for Ab04724 [7C1] (Rojas et al., 2012; PMID: 23138862) (Casadesus et al., 2013; PMID: 23547010) (US9527920B2).

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