Research Use Only

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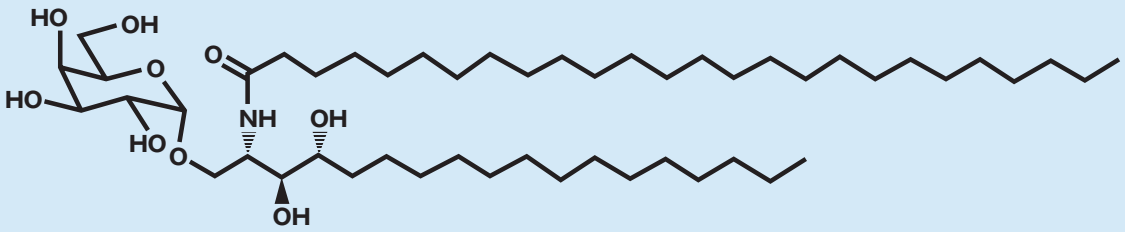
α-Galactosylceramide
(α-Gal-Cer ; KRN7000)



Specific ligand for human and mouse natural killer T (NKT) cells.
α-Gal-Cer (KRN7000) exhibits various immunological effects through NKT cell functions including potent antitumor effect.

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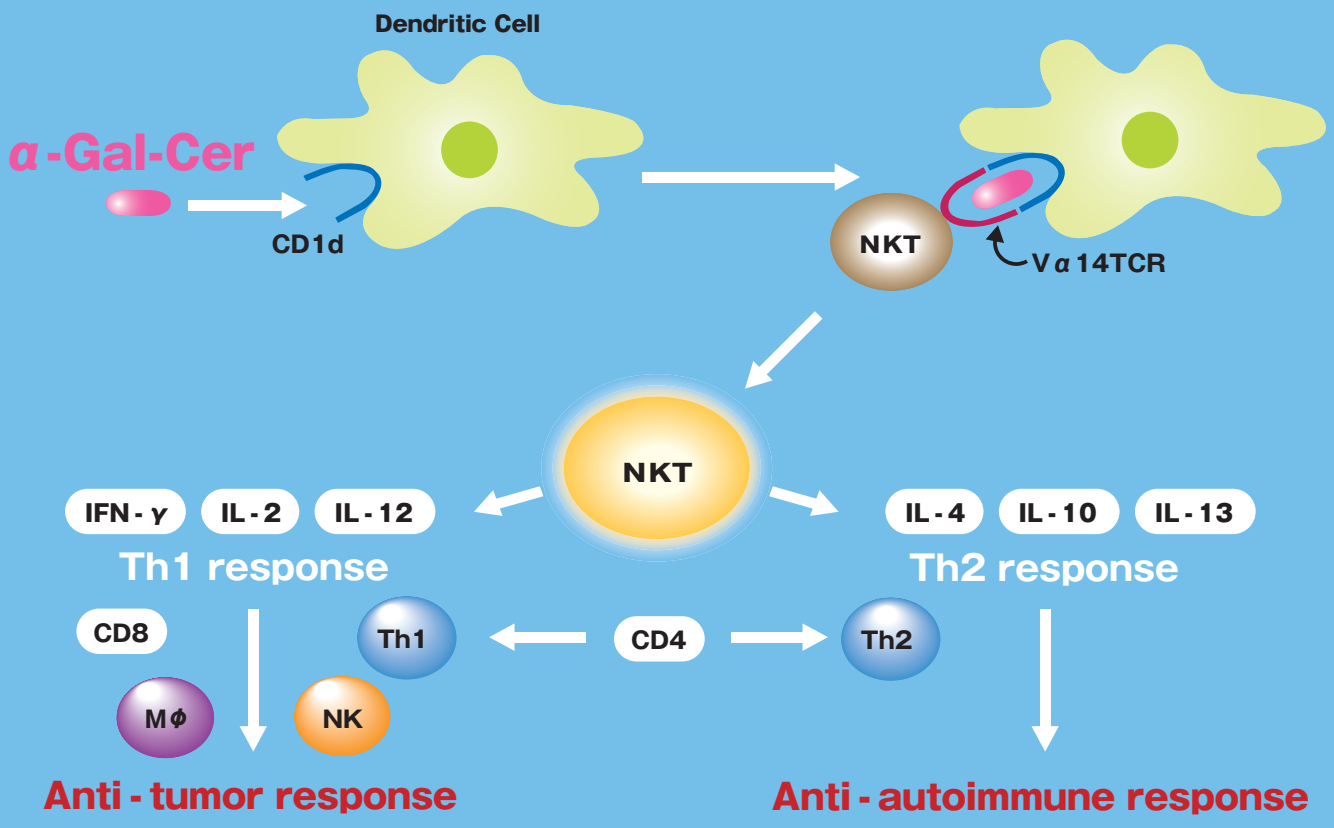

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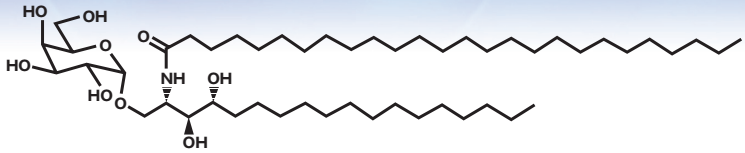

Molecular formula	$C_{50}H_{99}NO_9$
Molecular weight	858.34
Melting point	189-190˚C
Appearance	White to off-white powder.
Storage	Short term storage +4˚C Long term storage -20˚C *(Shipped on Blue ice)*

α-Gal-Cer is a fascinating compound and has potential for wide clinical applications.
This potent glycolipid has demonstrated significant activities such as anti-tumor, anti-viral and enhanced immune regulation.

Note: α-Gal-Cer (KRN7000) is for research use only, not for use in human, therapeutic or diagnostic applications without the expressed written authorization of Kyowa Hakko Kirin Company. Kyowa Hakko Kirin Company has issued a worldwide license for KRN7000 research to Funakoshi Company.

Background

α-Galactosylceramide(α-Gal-Cer ; KRN7000) was developed by Kyowa Hakko Kirin Company, as a biological response modifier. The α-Gal-Cer was isolated from an extract of the marine sponge, *Agelas mauritianus*, as an active substance which has galactose combined with ceramide in an α-configuration.

α-Gal-Cer (KRN7000), a chemically synthesized α-Galactosylceramide, is a specific ligand for human and mouse natural killer T (NKT) cells. α-Gal-Cer exhibits potent antitumor activity in various kinds of *in vivo* murine experimental models including subcutaneously implanted model and metastatic models in the liver and lung. In the liver metastatic models, treatment with α-Gal-Cer suppressed the growth of tumors and prolonged the survival term of tumor-bearing mice. α-Gal-Cer has been reported to show various immunological influence in infectious disease, autoimmune disease, and graft versus host disease in mice.

Please visit Alpha-GalCer.net !
http://www.alpha-galcer.net/

How to Use

α-Gal-Cer should be dissolved in a glass vial*.

＊Recommended glass vials：EPA Screw Top Vials（#1.1-STVG）, Prefitted Screw Caps（#8-SCS）, or Seals（#8-ST14）made by Chromacol, Ltd.

***In vivo* assay**：To dissolve α-Gal-Cer, use 5.6% sucrose, 0.75% L-histidine and 0.5% Tween-20 with heating at 80˚C for several minutes.

***In vitro* assay**：To dissolve α-Gal-Cer , use DMSO at the concentration of 1mg/ml with heating at 80˚C for several minutes. The solution of 1mg/ml in DMSO can be diluted in PBS.

Research Use Only

α-Gal-Cer Applications

α-Gal-Cer has wide research and human therapeutic applications. Below are a few examples of current research being applied with α-Gal-Cer. Please find detailed information on Alpha-GalCer.net !

Multiple sclerosis application:
Yamamura, T., *Rinsho Shinkeigaku*, **45**(11), 909-911(2005).

Arthritis application:
Bharhani, M. S., *et al*., *Int. Immunol*., **21**(7), 859-870(2009).

Hepatic ischemia application:
Cao, Z., *et al*., *Am. J. Physiol. Gastrointest. Liver Physiol*., **297**(2), 249-258(2009).

Head and neck carcinoma application:
Kunii, N., *et al*., *Cancer Sci*., **100**(6), 1092-1098(2009).

Lupus application:
Zeng, D., *et al*., *J. Clin. Invest*., **112**(8), 1211-22(2003).

Adjuvant application:
Lindqvist, M., *et al*., *J. Immunol*., **182**(10), 6435-6443(2009).

Influenza A virus application:
Ho, L. P., *et al*., *Eur. J. Immunol*., **38**(7), 1913-1922(2008).

Hepatic dendritic cells application:
Sasakawa, A., *et al*., *J. Hepatol*., **50**(6), 1155-1162(2009).

Lung cancer application:
Ishikawa, A., *et al*., *Clin. Cancer Res*., **11**(5), 1910-1917(2005).

Rheumatoid arthritis application:
Miellot, A., *et al*., *Eur. J. Immunol*., **35**(12), 3704-3713(2005).

Ovarian tumor application:
Choi, Y. S., *et al*., *Vaccine*, **26**(46), 5855-5863(2008).

Antitumor cytotoxicity application:
Kawano, T., *et al*., *Cancer Res*., **59**(20), 5102-5105(1999).

Sarcoidosis application:
Kobayashi, S., *et al*., *Int. Immunol*., **16**(2), 215-222(2004).

Colorectal cancer application:
Nakagawa, R., *et al*., *Cancer Res*., **58**(6), 1202-1207(1998).

Antimicrobial application:
Nieuwenhuis, E. E., *et al*., *J. Clin. Invest*., **119**(5), 1241-1250(2009).

Breast cancer application:
Hayakawa, Y., *et al*., *Proc. Natl. Acad. Sci. U.S.A*., **100**(16), 9464-9469(2003).

Experimental autoimmune uveitis application:
Grajewski, R. S., *et al*., *J. Immunol*., **181**(7), 4791-4797(2008).

Colitis application:
Saubermann, L. J., *et al*., *Gastroenterology*, **119**(1), 119-128(2000).

Human T-lymphotropic virus type 1 (HTLV-1) application:
Azakami, K., *et al*., *Blood*, **114**(15), 3208-3215(2009).

Malaria and Melanoma applications:
Schmieg, J., *et al*., *J. Exp. Med*., **198**(11), 1631-1641(2003).

Asthma application:
Hachem, P., *et al*., *Eur. J. Immunol*., **35**(10), 2793-2802(2005).

NKT cells identified in other animals:
Looringh van Beeck. F. A., *et al*., *Mol. Immunol*., **46**(7), 1424-1431(2009).

Resistance against tumor cells research:
Shimizu, K., *et al*., *J. Immunol*., **178**(5), 2853-2861(2007).

Immunology research:
McWilliams, J. A., *et al*., *Vaccine*, **28**(6), 1468-1476(2010).

Immune regulation derivative research:
Tashiro, T., *et al*., *Int. Immunol*., **22**(4), 319-328(2010).

Colon cancer application:
Hattori, T., *et al*., *Int. J. Hyperthermia*, **23**(7), 591-598(2007).

Leukemia application:
Shimizu, K., *et al.*, *J. Immunol.*, **177**(5), 3484-3492(2006).

Tuberculosis application:
Venkataswamy, M. M., *et al.*, *J. Immunol.*, **183**(3), 1644-1656(2009).

Tuberculosis application:
Chackerian, A., *et al.*, *Infect. Immun.*, **70**(11), 6302-6309(2002).

Atherosclerosis research:
van Puijvelde, G. H., *et al.*, *Thromb. Haemost.*, **102**(2), 223-230(2009).

Nanoparticles without inducing anergy research:
Thapa, P., *et al.*, *Vaccine*, **27**(25-26), 3484-3488(2009).

Gaucher disease research:
Balreira, A., *et al.*, *Immunobiology*, **215**(6), 505-513(2010).

Fatty acid amide hydrolase research:
Freigang, S., *et al.*, *J. Clin. Invest.*, **120**(6), 1873-1884(2010).

Radiation protection research:
Inoue, H., *et al.*, *Exp. Hematol.*, **25**(9), 935-944(1997).

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More new publications are updated on the web of Alpha-GalCer. net !
http://www.alpha-galcer.net/

Ordering Information

α-Galactosylceramide (α-Gal-Cer)
Cat.No. : KRN7000

For purchasing KRN7000, please contact Funakoshi.

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