iLite™ ADCC Effector (V) Assay Ready Cells

(REF: BM4001)

Description

iLite™ ADCC Effector (V) Assay Ready Cells are based on a human T lymphocyte cell line, Jurkat (ATCC #TIB-152), and have been genetically engineered and optimized to express high levels of the low affinity Fc receptor FcγIIIa (CD16), and the Firefly Luciferase (FL) reporter gene under the control of a proprietary chimeric promoter. The FcγIIIa receptor responds to ligation of the Fc moiety of an antibody bound to the specific antigen on target cells by activation of the FL reporter gene.

Normalization of cell counts, serum matrix effects or lysis of the effector cells by the target cells is obtained by a second reporter gene, a NanoLuc Luciferase reporter gene construct, under control of a constitutive promotor.

Content

>250 µL of *iLite*™ Assay Ready Cells suspended in RPMI 1640 with 20% heat inactivated fetal bovine serum (FBS), mixed 1:1 with cryoprotective medium from Lonza (Cat. No 12-132A).

Receipt and storage

Upon receipt confirm that adequate dry-ice is present and the cells are frozen. Immediately transfer to -80°C storage. Cells should be stored at -80°C **(do not store at any other temperature)** and are stable as supplied until the expiry date shown. Cells should be used within 30 min of thawing.

Background

Antibody-dependent cell-mediated cytotoxicity (ADCC) is a mechanism whereby pathogenic cells are lysed by lymphocytes, most often Natural Killer (NK) cells. The mechanism involves binding of antibodies to surface antigens on the pathogen. Crosslinking of these antibodies to NK cells through the binding of the Fc-portion to Fc receptors on the NK cells leads to activation of the NK cell and formation of an immune synapse with the pathogenic cell. The NK cell releases cytotoxic granules containing granzymes and perforin into the synapse, leading to apoptosis of the targeted cell (1).

The idea of employing ADCC to destroy dysfunctional cells by treating patients with antibodies which induce this mechanism has existed since the discovery of the ADCC mechanism. The first monoclonal antibody for treating cancer to be FDA approved was Rituximab which in part utilizes the ADCC mechanism to destroy cancer cells expressing CD20. Induction of ADCC through monoclonal antibodies is also utilized in treating autoimmune diseases (2, 3).

Application

The *iLite*™ ADCC Effector (V) Assay Ready Cells can be used together with matched *iLite*™ ADCC Target CD20 (+) and *iLite*™ ADCC Target CD20 (-) Assay Ready Cells for the quantification ADCC activity. Please see:

- Quantification of anti-CD20 ADCC activity (E-229-GB)

Related products

REF	Product name
BM4010	iLite™ ADCC Target CD20 (+) Assay Ready Cells
BM4015	iLite™ ADCC Target CD20 (-) Assay Ready Cells
BM4070	iLite™ anti-CD20 ADCC Activity Set

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References

1. Weiner GJ. *Building better monoclonal antibody-based therapeutics.* Nat Rev Cancer 15: 361-70 (2015).

2. Grillo-López AJ, White CA, Varns C, Shen D, Wei A, McClure A, Dallaire BK, *Overview of the clinical development of rituximab: first monoclonal antibody approved for the treatment of lymphoma,* Semin Oncol 26:66-73 (1999).

3. Brennan FR, Morton LD, Spindeldreher S, Kiessling A, Allenspach R, Hey A, Muller PY, Frings W, Sims J. *Safety and immunotoxicity assessment of immunomodulatory monoclonal antibodies,* MAbs, 2:233-55 (2010).

Symbols on label

LOT	Lot number		Temperature limitation
REF	Catalogue number		Biohazard
	Use by		Manufacturer

Precautions

- For research use only. This product is intended for professional laboratory research use only. The data and results originating from using the product, should not be used either in diagnostic procedures or in human therapeutic applications.

- *iLite*™ ADCC Effector (V) Assay Ready Cells are a stable transfected cell line of human origin classified as a Class 1 Genetically Modified Microorganism. They should be handled in accordance with EU regulations (2009/41/EC) and disposed of in a licensed contained-use facility in accordance with these regulations. When used in accordance with the manufacturer's product specification, the requirements of EC Directive 2009/41/EC on the contained-use of genetically modified microorganisms are deemed to have been met.

- Residues of chemicals and preparations generally considered as biohazardous waste, and should be inactivated prior to disposal by autoclaving or using bleach. All such materials should be disposed of in accordance with established safety procedures.

Propriety information

In accepting delivery of *iLite*™ Assay Ready Cells the recipient agrees not to sub-culture these cells, attempt to sub-culture them or to give them to a third party, and only to use them directly in assays. Biomonitor *iLite*™ cell-based products are covered by patents which is the property of Euro Diagnostica AB and any attempt to reproduce the delivered *iLite*™ Assay Ready Cells is an infringement of these patents.

Distributed in the US/Canada by:

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