iLite® ADCC Target CD20 (-) Assay Ready Cells
(REF: BM4015)

Description

iLite® ADCC Target CD20 (-) Assay Ready Cells are based on a human B lymphocyte cell line, Raji (ATCC# CCL-86), and have been genetically engineered and optimized to be depleted of CD20 expression. The cells are to be use as negative controls together with *iLite*® ADCC Effector (V) Assay Ready Cells and *iLite*® ADCC Target CD20 (+) Assay Ready Cells for measuring the ADCC activity of anti-CD20 antibodies.

Content

>250 µL of *iLite*® Assay Ready Cells suspended in RPMI 1640 with 20% 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 has existed since the discovery of the ADCC mechanism. Rituximab, one of the first of such drugs approved, is a chimeric monoclonal antibody targeting CD20, a surface antigen primarily found on B-cells. The drug was approved by the FDA in 1997 for treatment of chemotherapy resistant Non-Hodgkin B-cell lymphomas, and has since also been approved in Europe for different inflammatory indications (2-4).

In addition, other anti-CD20 monoclonal antibodies have been developed, such as ocrelizumab, a humanized (90-95%) antibody, and ofatumumab, a fully human monoclonal. In addition, efforts are being made to enhance the ADCC activity of the antibodies by engineering the glycan patterns of the constant region, such as in obinutuzumab (5).

Application

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

Application notes for the following assays are available:

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

Related products

REF	Product name
BM4001	*iLite*® ADCC Effector (V) Assay Ready Cells
BM4010	*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. Maloney DG, Grillo-López AJ, White CA, Bodkin D, Schilder RJ, Neidhart JA, Janakiraman N, Foon KA, Liles TM, Dallaire BK, Wey K, Royston I, Davis T, Levy R. *IDEC-C2B8 (Rituximab) anti-CD20 monoclonal antibody therapy in patients with relapsed low-grade non-Hodgkin's lymphoma.* Blood, 90:2188-95 (1997).

3. https://www.cancer.gov/about-cancer/treatment/drugs/fda-rituximab (2016-10-24).

4. EPAR summary for the public, EMA, EMA/424820/2016, (2016).

5. Cang S, Mukhi N, Wang K, Liu D., *Novel CD20 monoclonal antibodies for lymphoma therapy.* J Hematol Oncol, 5:64 (2012).

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 Target CD20 (-) 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.

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