iLite® CD20 (-) Target Assay Ready Cells

REF: BM5015

For research use only. Not for use in diagnostic procedures.

DESCRIPTION

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

CONTENT

>250 µL of *iLite*® Assay Ready Cells suspended in cryoprotective medium from Gibco (cat no 12648-010).

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 as long as 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 first approved by the FDA in 1997 for treatment of chemotherapy resistant Non-Hodgkin B-cell lymphomas and today it is approved for several B-cell malignancies, inflammatory and autoimmune indications (2-4). ADCC has been shown as one of the mechanisms of therapeutic action of rituximab (5).

With the expiry of the patent for rituximab, several anti-CD20 biosimilars have entered the market and the clinic. By definition, a biosimilar shall demonstrate a similar nature compared to the reference product in terms of efficacy, safety, therapeutic mode of action, immunogenicity, pharmacokinetics and pharmacodynamics. In addition, other anti-CD20 monoclonal antibodies, with an epitope that either partially overlaps or an epitope that is distinct from that of rituximab have entered clinical use, such as ocrelizumab, a humanized (90-95%) antibody, and

ofatumumab, a fully human monoclonal. Efforts are being made to enhance the ADCC activity of the antibodies by engineering the glycan patterns of the constant region, such the 3rd generation anti-CD20 monoclonal obinutuzumab (6).

iLite® ADCC Assay Ready Cells offers a technology platform to study the ADCC mechanism of a drug and to compare the ADCC mechanism of a biosimilar with the reference product.

APPLICATION

The *iLite*® CD20 (-) Target Assay Ready Cells can be used together with *iLite*® ADCC Effector (V) and *iLite*® CD20 (+) Target Assay Ready Cells for the quantification ADCC activity of anti-CD20 antibodies. Application notes for the following assays are available:

- Quantification of anti-CD20 ADCC activity (LABEL-DOC-0399)

RELATED PRODUCTS

REF	Product name
BM5001	*iLite*® ADCC Effector (V) Assay Ready Cells
BM5010	*iLite*® CD20 (+) Target Assay Ready Cells

REFERENCES

1. Weiner GJ. *Building better monoclonal antibody-based therapeutics.* Nat Rev Cancer 15(6): 361-70 (2015).
2. Maloney DG et al. *IDEC-C2B8 (Rituximab) anti-CD20 monoclonal antibody therapy in patients with relapsed low-grade non-Hodgkin's lymphoma. Blood*, 15; 90(6):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. Weiner GJ. *Rituximab: mechanism of action.* Semin Hematol. 2010 Apr;47(2):115-23.
6. Cang S et al. *Novel CD20 monoclonal antibodies for lymphoma therapy.* J Hematol Oncol, 11;5:64 (2012)

SYMBOLS ON LABEL

LOT	Lot number		Temperature limitation
REF	Catalogue number		Biological risk
	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.

The cells included in the *iLite*® CD20 (-) Target Assay Ready Cells are a stable transfected cell line of human origin classified as a Class 1 Genetically Modified Microorganism. This is based on the conclusion that neither insert nor vector adds anything to the biosafety level since the cells cannot produce active virus. They should be handled in accordance with EU directive (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.

PROPRIETARY 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. *iLite*® cell-based products are covered by patents which is the property of Svar Life Science AB and any attempt to reproduce the delivered *Lite*® Assay Ready Cells is an infringement of these patents.