iLite® Type I IFN Assay Ready Cells

REF: BM3049

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

DESCRIPTION

iLite® Type I IFN Assay Ready Cells are human promonocytic cells (U937) engineered to express Firefly Luciferase under the control of an IFN α/β responsive promoter. When IFNα or IFNβ binds to the IFN α/β receptor on the cell surface, the IFN α/β regulated Firefly Luciferase reporter gene construct will be activated, resulting in a luminescent signal.

CONTENT

2.5 mL of *iLite*® Type I IFN Assay Ready Cells diluted in RPMI 1640 with 40% heat inactivated fetal bovine serum (FBS), 10% glycerol and 2.5% dimethyl sulfoxide (DMSO).

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 and should be diluted immediately after thawing.

BACKGROUND

IFNα are widely used to treat chronic viral hepatitis in combination of anti-viral agents and in therapy of a wide variety of malignant diseases, including both some hematological malignancies and certain solid tumors. Many different preparations of IFNα are available commercially; the most commonly used formulations include IFNα2a and IFNα2b. (1,2)
Several studies show correlation between development of anti IFNα neutralizing antibodies (NAbs) and loss of IFNα treatment efficacy. (3)
Interferon beta (IFNβ) is well established as a first line therapy in relapsing/remitting multiple sclerosis. (4,5) The occurrence of neutralizing antibodies (NAbs) and binding antibodies (BAbs) to IFNβ has been widely reported. Subjects with NAbs have shown reduced response to treatment with IFNβ, having higher relapse rates, increased MRI activity and higher risk of disease progression. (6)
Frequencies and titers of BAbs and NAbs vary depending on the preparation used, dose and frequency of administration and the assay used to quantify them. The iLite® platform offers a cell-based assay that enables the studies of Type I IFN (IFNα- and IFNβ-subtypes) interaction with their receptor and antibodies interfering with this interaction. (7)

APPLICATION

The *iLite*® Type I IFN Assay Ready Cells can be used for quantification of IFN α or β and for measurement of both anti-IFNα antibodies and anti-IFNβ antibodies.

Application Notes for the following assays are available:

- Quantification of functional type I Interferon (LABEL-DOC-0486)
- Quantification of type I Interferon inhibitor activity (LABEL-DOC-0487)

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RELATED PRODUCTS

REF	Product name
BM3249	*iLite*® IFN beta 1a (950 IU/ml)*
BM3251	*iLite*® IFN beta 1a NAb positive control
BM3134	*iLite*® Diluent B
BM3250	*iLite*® Diluent D

*Ensure matrix conformity between reference and samples when using *iLite*® IFN beta 1a (950 IU/mL) as reference

REFERENCES

1. **Borden EC et al.** *Interferons at age 50: past, current and future impact on biomedicine.* Nat Rev Drug Discov. 2007 Dec;6(12):975-90.
2. **Ferrantini M et al.** *Interferon-alpha and cancer: mechanisms of action and new perspectives of clinical use.* Biochimie. 2007 Jun-Jul;89(6-7):884-93.
3. **Halfon P et al.** *Neutralizing antibodies to interferon-α and circulating interferon in patients with chronic hepatitis C non-responding to pegylated interferon plus ribavirin re-treated by pegylated interferon-α-2a and ribavirin (ANRS HC16 GAMMATRI substudy).* J Med Virol. 2010 Dec;82(12):2027-31.
4. **Paolicelli D et al**. *Review of interferon beta-1b in the treatment of early and relapsing multiple sclerosis.* Biologics. 2009;3:369-76.
5. **Marziniak M, Meuth S.** *Current perspectives on interferon Beta-1b for the treatment of multiple sclerosis.* Adv Ther. 2014 Sep;31(9):915-31.
6. **Farrell RA et al.** *Development of resistance to biologic therapies with reference to IFN-β.* Rheumatology (Oxford). 2012 Apr;51(4):590-9.
7. **Hermanrud C, et al. on behalf of the ABIRISK consortium:** *Development and validation of cell-based luciferase reporter gene assays for measuring neutralizing anti-drug antibodies against interferon beta.* J Immunol Methods 2016; 430: 1-9.

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.

iLite® Type I IFN 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 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 EU 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 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 *iLite*® Assay Ready Cells is an infringement of these patents.