iLite® IFN type 1 FAST Assay Ready Cells

REF: BM4049

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

DESCRIPTION

iLite® IFN type 1 FAST Assay Ready Cells are human embryonic kidney HEK293[1] cells which have been genetically engineered and optimized to be responsive to type 1 interferon, resulting in a proportional expression of Firefly Luciferase. The cells also contain the Renilla Luciferase internal standardization gene under the control of a constitutive promoter that renders assay results independent of cell number and provides a means for correcting for cytotoxic effects that may be encountered with some biological samples.

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 or at lower temperature and are stable as supplied until the expiry date shown. Cells should be diluted and plated immediately after thawing.

BACKGROUND

Interferons (IFNs) are cytokines with antiviral, antitumor and immunoregulatory functions, released by both immune and non-immune cells as a first line of host innate defense, particularly viral infections. IFNs are classified into three groups and generally initiate signaling via the JAK-STAT (Janus kinase/signal transducer and activator of transcription) pathway. Type I IFNs includes at least 16 different subtypes, most well defined are IFN alpha (IFNα) and IFN beta (IFNβ) which binds to the heterodimeric IFN alpha/beta receptor (IFNAR) thereby inducing intracellular signaling (1,2). Type I IFNs are used in several clinical settings, due to their antiviral and immunomodulatory properties (3). These properties have generated interest in their clinical use to enhance antigen presentation, control viral infections and promote antitumor responses (3–5). Recently, a robust type I interferon response has been observed in patients with severe COVID-19, which could contribute to the exacerbated hyper-inflammation observed in the progression to severe COVID-19 (6).

[1] The HEK-293 cell line has been used under a license obtained from AdVec Inc.

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APPLICATION

The *iLite*® IFN type 1 FAST Assay Ready Cells can be used for studies of type 1 interferon (IFNα and IFNβ) in test samples, including human serum.
Please see:

- Quantification of functional IFNβ (LABEL-DOC-0621)
- Quantification of IFNβ inhibitor activity (LABEL-DOC-0622)
- Quantification of functional IFNα (LABEL-DOC-0623)
- Quantification of IFNα inhibitor activity (LABEL-DOC-0624)

RELATED PRODUCTS

REF	Product name
BM3049	*iLite*® Type I IFN Assay Ready Cells
BM3251	*iLite*® IFN beta 1a NAb positive control

REFERENCES

1. Ivashkiv LB, Donlin LT. Regulation of type I interferon responses. Nat Rev Immunol. 2013;14(1):36–49
2. Padilla CML de, Niewold TB. The type I interferons: Basic concepts and clinical relevance in immune-mediated inflammatory diseases. Gene. 2016;576(1):14–21
3. Park A, Iwasaki A. Type I and Type III Interferons – Induction, Signaling, Evasion, and Application to Combat COVID-19. Cell Host Microbe. 2020;27(6):870–8
4. Propper DJ, Balkwill FR. Harnessing cytokines and chemokines for cancer therapy. Nat Rev Clin Oncol. 2022;19(4):237–53
5. Borden EC. Interferons α and β in cancer: therapeutic opportunities from new insights. Nat Rev Drug Discov. 2019;18(3):219–34
6. Lee JS, Shin EC. The type I interferon response in COVID-19: implications for treatment. Nat Rev Immunol. 2020;20(10):585–6

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® IFN type 1 FAST 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 *iLite*® Assay Ready Cells is an infringement of these patents.

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