

#35114 Store at -20°C

IFN (Type I/III) Signaling Pathway Antibody Sampler Kit

1 Kit (9 x 20 microliters)


Cell Signaling
TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Tyk2 (D4I5T) Rabbit mAb	14193	20 µl	134 kDa	Rabbit IgG
Phospho-Tyk2 (Tyr1054/1055) (D7T8A) Rabbit mAb	68790	20 µl	134 kDa	Rabbit IgG
Jak1 (6G4) Rabbit mAb	3344	20 µl	130 kDa	Rabbit IgG
Phospho-Jak1(Tyr1034/1035) (D7N4Z) Rabbit mAb	74129	20 µl	130 kDa	Rabbit IgG
Stat1 (D1K9Y) Rabbit mAb	14994	20 µl	84, 91 kDa	Rabbit IgG
Phospho-Stat1 (Tyr701) (D4A7) Rabbit mAb	7649	20 µl	84, 91 kDa	Rabbit IgG
Stat2 (D9J7L) Rabbit mAb	72604	20 µl	97, 113 kDa	Rabbit IgG
Phospho-Stat2 (Tyr690) (D3P2P) Rabbit mAb	88410	20 µl	97, 113 kDa	Rabbit IgG
IRF-9 (D2T8M) Rabbit mAb	76684	20 µl	48 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The IFN (Type I/III) Signaling Pathway Antibody Sampler Kit provides an economical means of detecting the activation of the IFN (Type I/III) signaling pathway using phospho-specific and control antibodies. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibodies.*

Background

Originally discovered in the late 1950s for their antiviral activity, interferons (IFNs) have since been assigned diverse roles in many physiological and pathological processes. There are three families of IFNs: types I, II, and III. In humans, type I contains IFN- α (13 different subtypes), IFN- β (also known as IFN- β 1), IFN- ϵ , IFN- κ , and IFN- ω . They bind to a receptor complex containing IFNAR1 and IFNAR2, which is broadly expressed on most cells. IFN- γ is the sole member of type II IFN. It signals through a receptor complex consisting of IFN γ R1 and IFN γ R2, which is also expressed on most cell types. Type III IFN, also known as interferon lambdas (IFN- λ s), have four members in humans: IFN- λ 1 (IL29), IFN- λ 2 (IL28A), IFN- λ 3 (IL28B), and IFN- λ 4. IFN- λ s signal through a heterodimeric receptor comprised of IFN λ R1 and IL-10R2. While IL-10R2 is broadly expressed and shared by the IL-10 family cytokines, IFN λ R1 expression is restricted to epithelial cells, neuronal cells, and subsets of myeloid cells (1-3). Engagement of all IFNs with their receptors initiates downstream signaling events, mainly, activation of the Jak-Stat signaling cascade. For type I and III IFNs, Jak1 and Tyk2 are phosphorylated and activated, leading to subsequent phosphorylation of Stat1 and Stat2. Phosphorylated Stat1 and Stat2 are released from the receptor complex and, together with IRF-9, they form so-called ISGF3 (interferon-stimulated gene factor 3) transcriptional complex. ISGF3 translocates to the nucleus, binds to the interferon-stimulated response element (ISRE) to initiate the transcription of a wide array of interferon-stimulated genes (ISGs) (4,5). On the other hand, IFN- γ induces phosphorylation and activation of Jak1 and Jak2, which subsequently phosphorylate Stat1. Phosphorylated Stat1 dimerizes, translocates to the nucleus, and binds to γ -interferon-activated site (GAS) to initiate the transcription of ISGs (6,7).

Background References

- Schneider, W.M. et al. (2014) *Annu Rev Immunol* 32, 513-45.
- Hemann, E.A. et al. (2017) *Front Immunol* 8, 1707.
- Walter, M.R. (2020) *Front Immunol* 11, 606489.
- Hervas-Stubbs, S. et al. (2011) *Clin Cancer Res* 17, 2619-27.
- Mesev, E.V. et al. (2019) *Nat Microbiol* 4, 914-924.
- Green, D.S. et al. (2017) *J Biol Chem* 292, 13925-13933.
- Ivashkiv, L.B. (2018) *Nat Rev Immunol* 18, 545-558.

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

Jak antibodies produced under license (granting certain rights including those under U.S. Patent No. 5,658,791) from Chemicon International, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](https://www.cellsignal.com/trademarks) for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.