Datasheet for ABIN1981841

STAT4 ELISA Kit

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Overview

Quantity:	96 tests
Target:	STAT4
Binding Specificity:	pTyr693
Reactivity:	Human, Mouse, Rat
Method Type:	Cell ELISA
Application:	ELISA

Product Details

Purpose:	Cell-Based Human/Mouse Stat 4 (Tyr693) Phosphorylation ELISA Kit. Suitable for adherent whole cell lines.
Brand:	CellBIND®
Sample Type:	Cell Culture Cells
Analytical Method:	Semi-Quantitative
Detection Method:	Colorimetric
Specificity:	The antibodies provided in this kit recognizes human and mouse Stat 4 phosphorylated at site Tyrosine-693 and total Stat 4 for comparison.
Characteristics:	• Site and signal pathway-specific • In vitro detection of adherent cell culture • No sample lysis needed • Compatible with a standard ELISA plate reader • Faster results than with ELISA

Product Details

	• Adaptable for high-throughput screening and drug discovery
Components:	• uncoated 96-well Microplate • Wash Buffer A • Wash Buffer B • Fixing Solution • Quenching Buffer • Blocking Buffer • Anti-phospho antibody • Anti-pan antibody • HRP-Conjugated Secondary Antibody • TMB One-Step Substrate • Stop Solution
Material not included:	• Distilled or deionized water • 100 mL and 1 liter graduated cylinders • Tubes to prepare sample dilutions • Protease and Phosphatase inhibitors • Precision pipettes to deliver 2 µL to 1 mL volumes • Adjustable 1-25 mL pipettes for reagent preparation • Benchtop rocker or shaker • Microplate reader capable of measuring absorbance at 450 nm

Target Details

Target:	STAT4
Alternative Name:	STAT4 (STAT4 Products)
Background:	STAT4
Gene ID:	6775
UniProt:	Q14765
Pathways:	JAK-STAT Signaling

Application Details

Sample Volume:	100 µL
Plate:	Uncoated
Protocol:	1. Seed 10,000-30,000 cells into each well and incubate overnight. 2. Apply various treatment, inhibitors or activators according to manufacture's instructions.

3. Add 100 µL of Fixing Solution into each well and incubate for 20 min at RT with shaking.
4. Add 200 µL of prepared 1X Quenching Buffer and incubate 20 min at RT.
5. Add 200 µL of Blocking Solution and incubate for 1 h at 37 °C.
6. Add 50 µL of 1X anti-phospho-protein specific antibody or anti-pan-protein specific antibody to each well and incubate for 2 h at RT.
7. Add 50 µL of prepared 1X HRP-Anti-Rabbit or Mouse IgG and incubate for 1 h at RT.
8. Add 100 µL of TMB One-Step Substrate Reagent to each well.
9. Incubate 30 min at RT.
10. Add 50 µL of Stop Solution to each well.
11. Read at 450 nm immediately.

Reagent Preparation:

NOTE: Thaw all reagents to room temperature immediately before use. If wash buffers contain visible crystals, warm to room temperature and mix gently until dissolved.

NOTE: Briefly centrifuge (~1,000g) ITEMS G, H, and I before opening to ensure maximum recovery.

For more information look at the picture.

Assay Procedure:

NOTE: ALL incubations and wash steps must be performed under gentle rocking or rotation (~1-2 cycles/sec).

1. Design your experiment. For example, see Figure 2 below.

OPTIONAL: If seeding HUVECs, HMEC-1 or other loosely attached cells, coat the Uncoated 96-Well Microplate (ITEM A) by adding 100 µL poly-L-Lysine (Recommended Sigma Aldrich, Cat#: P4832) into each well and then follow manufacturer's instructions. A pre-coated CellBIND® microplate or other poly-lysine treated tissue culture plate may be used in place of Item A.

2. Seed 100 µL of 30,000 cells into each well of the Uncoated 96-Well Microplate (ITEM A) provided and incubate overnight at 37 °C with 5 % CO_2.

NOTE: The optimal cell number used will vary on the cell line and the relative amount of protein phosphorylation. More or less cells may be used but this must be determined empirically.

NOTE: The cells can be starved ~4-24 hours (depending on cell line) prior to treatment with inhibitors or activators.

3. Apply various treatments, inhibitors (such as siRNA or chemicals) or activators according to manufac turer's instructions and incubate for the desired time points.

NOTE: It is recommended to dissolve inhibitors or activators into serum-free cell culture medium before treating the cells (unless otherwise stated in the manufacturer's instructions.)

4. Discard the cell culture medium by flipping the microplate upside down and gently tapping the bottom of the microplate over a sink.

5. Wash by pipetting 200 µL of the prepared 1X Wash Buffer A (ITEM B) into each well. Discard the wash buffer (same as step 4) and wash 2 more times for a total of 3 washes using fresh

Application Details

wash buffer each time. After the final wash, gently blot the microplate onto a paper towel to remove any excess/remaining buffer.

NOTE: To avoid cell loss, do not pipette directly onto the cells. Instead, gently dispense the liquid down the wall of cell culture wells. Also avoid the use of vacuum suction or too forcefully tapping the microplate when discarding any solution.

6. Add 100 µL of Fixing Solution (ITEM D) into each well and incubate for 20 minutes at room temperature.

NOTE: The fixing solution is used to permeabilize the cells.

7. Repeat wash step 5.

8. Add 200 µL of the prepared 1X Quenching Buffer (ITEM E) into each well and incubate 20 minutes at room temperature.

NOTE: The quenching buffer is used to minimize the background response.

9. Wash 4 times with 1X Wash Buffer A.

10. Add 200 µL of the prepared 1X Blocking Buffer (ITEM F) into each well and incubate for 1 hour at 37 °C.

11. Wash 3 times with the prepared 1X Wash Buffer B (ITEM C).

NOTE: If needed, the microplate may be stored at -80 °C for several days after this wash.

12. Add 50 µL of the prepared 1X primary antibody (ITEM G or H) into each corresponding well and incubate for 2 hours at room temperature.

13. Wash 4 times with 1X Wash Buffer B.

14. Add 50 µL of the prepared 1X HRP Conjugated secondary anttibody (ITEM I-1 or I-2) into each well and incubate for 1 hour at room temperature.

NOTE: Item I-1 is the secondary antibody for Item G (primary antibody). Item I-2 is the secondary antibody for Item H (primary antibody).

15. Wash 4 times with 1X Wash Buffer B.

16. Add 100 µL of the TMB Substrate (ITEM J) into each well and incubate for 30 minutes at room temperature in the dark.

17. Add 50 µL of the Stop Solution (ITEM K) into each well. Read at 450 nm immediately.

Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-20 °C
Storage Comment:	The entire kit may be stored at -20°C for up to 6 months from the date of shipment. Avoid

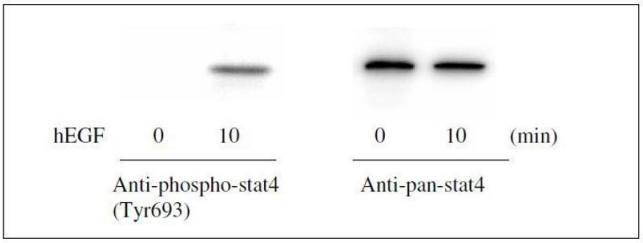
Handling

	repeated freeze-thaw cycles.
Expiry Date:	6 months

Publications

Product cited in:	Kaplan, Sun, Hoey, Grusby: "Impaired IL-12 responses and enhanced development of Th2 cells in Stat4-deficient mice." in: **Nature**, Vol. 382, Issue 6587, pp. 174-7, (1996) (PubMed). Yu, Lin, Fink, Akira, Bloom, Yamauchi: "Differential utilization of Janus kinase-signal transducer activator of transcription signaling pathways in the stimulation of human natural killer cells by IL-2, IL-12, and IFN-alpha." in: **Journal of immunology (Baltimore, Md. : 1950)**, Vol. 157, Issue 1, pp. 126-37, (1996) (PubMed). Zhong, Wen, Darnell: "Stat3 and Stat4: members of the family of signal transducers and activators of transcription." in: **Proceedings of the National Academy of Sciences of the United States of America**, Vol. 91, Issue 11, pp. 4806-10, (1994) (PubMed).

Images



Western Blotting

Image 1. Western blot analysis of extracts from 100 ng/mL hEGF treated A431 cells. Phospho-Stat4 (Tyr693) and Stat4 antibodies were used in both detection assays.

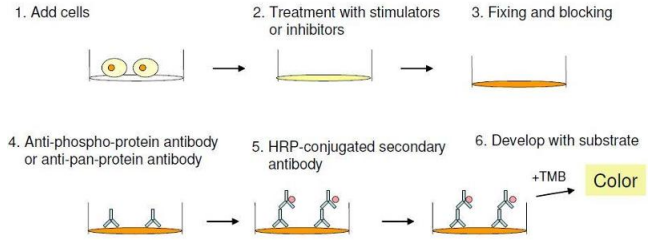


Image 2. Cell-Based protein phosphorylation procedure

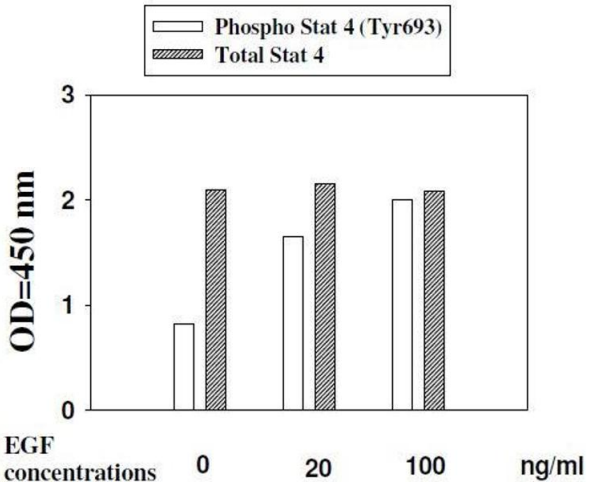


Image 3.

Please check the product details page for more images. Overall 5 images are available for ABIN1981841.