TECHNICAL DATA SHEET

THUNDER™ Phospho-SLP-76 (S376) + Total SLP-76 TR-FRET Cell Signaling Assay Kit

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CATALOG NUMBERS KIT-SLP-76PT-500
400 points for phospho-SLP-76 and 100 points for total SLP-76

Store at -80°C
For research use only.
Not for use in diagnostic procedures.

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PRODUCT DESCRIPTION

This assay kit measures intracellular levels of **phospho-SLP-76 (S376)** and **total SLP-76** protein in cell lysates using a simple, rapid and sensitive immunoassay based on the homogeneous (no-wash) THUNDER™ TR-FRET technology. The kit is compatible with both adherent and suspension cells.

SPECIFICITY

This assay kit contains two specific and selective antibody pairs, one that recognizes **SLP-76** phosphorylated at **Ser376** and another that recognizes **total** (both phosphorylated and unphosphorylated) **SLP-76.**

SPECIES REACTIVITY

Human (Swiss-Prot Acc.: Q13094; Entrez-Gene Id: 3937).

Other species should be tested on a case-by-case basis.

TR-FRET ASSAY PRINCIPLE

The **Phospho-SLP-76 (S376) + Total SLP-76** assay kit is a homogeneous time-resolved Förster resonance energy transfer (TR-FRET) sandwich immunoassay (Figure 1). The THUNDER™ Cell Signaling assay workflow consists of 3 steps (Figure 2). Following cell treatment, cells are first lysed with the specific Lysis Buffer provided in the kit. Then **Phospho-SLP-76 (S376)** and **Total SLP-76** in the cell lysates are detected in separate wells with two pairs of fluorophore-labeled antibodies in a simple "add-incubate-measure" format (single-step reagent addition; no wash steps). For detection of the phosphorylated protein, one antibody is labeled with a donor fluorophore (Europium chelate; Eu-Ab1) and the second with a far-red acceptor fluorophore (FR-Ab2). The same approach is used for the second antibody pair detecting the total protein (Eu-Ab3 and FR-Ab4). The binding of the two matched labeled antibodies to distinct epitopes on the target protein (either **phospho-SLP-76 (S376)** or **total SLP-76**) takes place in solution and brings the two dyes into close proximity. Excitation of the donor Europium chelate molecules with a flash lamp (320 or 340 nm) or a laser (337 nm) triggers a FRET from the donor to the acceptor molecules, which in turn emit a TR-FRET signal at 665 nm. Residual energy from the Eu chelate generates light at 615 nm. The signal at 665 nm is proportional to the concentration of **Phospho-SLP-76 (S376)** and **Total SLP-76** in the cell lysate. Data can be expressed as either the signal at 665 nm or the 665 nm/615 nm ratio.

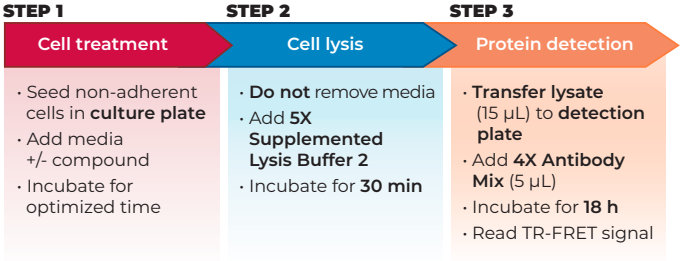

Figure 2 Assay workflow using the 2-plate (transfer) proto-

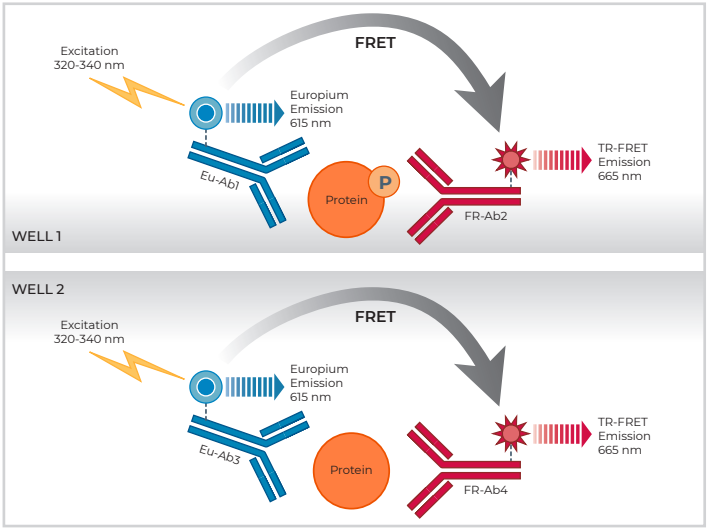

Fig. 1 Schematic representation of the TR-FRET cell signaling assay principle.

KIT COMPONENTS

KIT COMPONENTS	500 points*
Eu-labeled phospho-SLP-76 (S376) antibody (Eu-Ab1)	20 µL
Acceptor-labeled phospho-SLP-76 (S376) antibody (FR-Ab2)	80 µL
Eu-labeled total-SLP-76 antibody (Eu-Ab3)	5 µL
Acceptor-labeled total-SLP-76 antibody (FR-Ab4)	20 µL
Lysis Buffer 2 (5X)	5 mL
Detection Buffer (10X)	250 µL
Positive control cell lysate	500 µL

* The number of assay points is based on an assay volume of 20 µL in half-area 96-well or low-volume 384-well assay plates using the kit components at the recommended concentrations (refer to the User Manual).

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TECHNICAL DATA SHEET

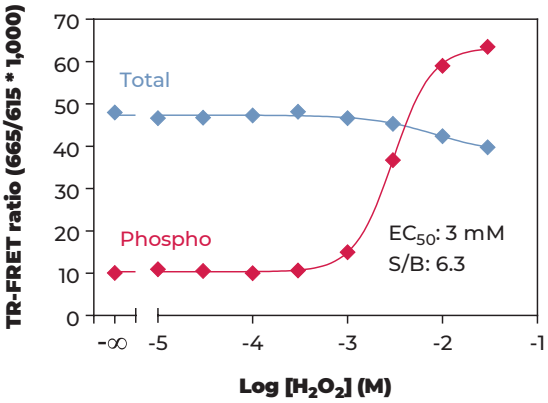
Phospho-SLP-76 (S376) + Total SLP-76

VALIDATION DATA

This assay kit has been validated for the relative quantification of phospho-SLP-76 (S376) and total SLP-76 in Jurkat cell lysates using the 2 plate assay protocol.

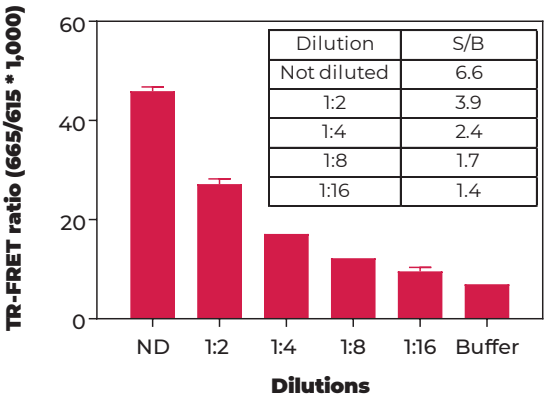
- Non-adherent cells were cultured in RPMI+10% FBS before being centrifuged and resuspended at the desired density in RPMI without serum.
- Following cell treatment, cells were lysed with the 5X **Lysis Buffer 2** (to a final concentration of 1X) supplemented with the phosphatase inhibitors sodium fluoride (5 mM) and sodium orthovanadate (10 mM).
- Following a **30-min** incubation at room temperature (RT) on an orbital shaker (400 rpm), lysates (15 µL) were then transferred to a 384-well assay plate followed by addition to separate wells of either the labeled antibodies Eu-Ab1 and FR-Ab2 (5 µL) for detection of phospho-SLP-76 (S376) or Eu-Ab3 and FR-Ab4 (5 µL) for detection of total SLP-76.
- The plate was incubated at RT for **18 hours** and the TR-FRET signal was recorded at 665 and 615 nm (EnVision®; lamp excitation).

STIMULATION OF PHOSPHO-SLP-76 (S376) IN JURKAT



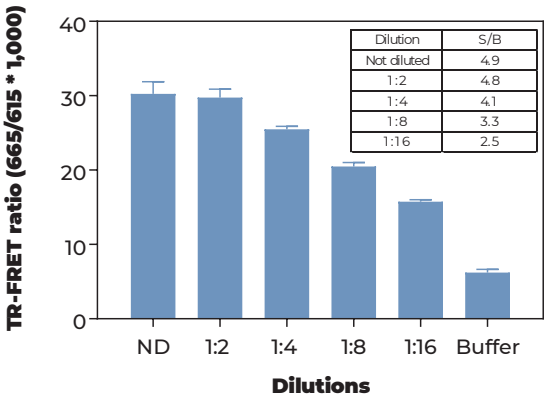
Jurkat cells (400,000 cells/well; in triplicate) were incubated with serial dilutions of H_2O_2 for 15 min at RT. Data show that treatment of Jurkat cells with H_2O_2 stimulates phosphorylation of SLP-76 at S376 but does not affect the levels of Total SLP-76.

JURKAT CONTROL LYSATE TITRATION (QC TEST) PHOSPHO-SLP-76 (S376)



Dilution	S/B
Not diluted	6.6
1:2	3.9
1:4	2.4
1:8	1.7
1:16	1.4

JURKAT CONTROL LYSATE TITRATION (QC TEST) TOTAL SLP-76



Dilution	S/B
Not diluted	4.9
1:2	4.8
1:4	4.1
1:8	3.3
1:16	2.5

Quality Control: the Phospho-SLP-76 (S376) + Total SLP-76 assay kit is routinely tested against H2O2 treated Jurkat lysates. Jurkat cells were cultured in a T175 flask, centrifuged and resuspended at 20 million cells/mL, and stimulated with 30 mM of H_2O_2 for 15 min at RT. Following cell lysis using 5X Lysis Buffer 2 (final concentration 1X), lysates were serially diluted with 1X Lysis Buffer 2 and tested in triplicate and in separate wells for phospho-SLP-76 (S376) and total SLP-76. Data show a linear relationship between lysate dilutions and TR-FRET ratio values. Note that due to the very high sensitivity of the Total SLP-76 kit, lysates from the T175 flask required at least a 1:2 pre-dilution in order to be within the dynamic assay range.

FOR MORE INFORMATION ON DEVELOPING AND OPTIMIZING TR-FRET CELL SIGNALING ASSAYS, CONSULT THE USER MANUAL.

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