

Catalog #: L61474

Aliases

HSPA5; Heat Shock Protein Family A (Hsp70) Member 5; GRP78; Heat Shock 70kDa Protein 5 (Glucose-Regulated Protein, 78kDa); Immunoglobulin Heavy Chain-Binding Protein; Heat Shock Protein 70 Family Protein 5; Heat Shock Protein Family A Member 5; Endoplasmic Reticulum Chaperone BiP; Glucose-Regulated Protein, 78kDa; 78 KDa Glucose-Regulated Protein; Binding-Immunoglobulin Protein; HSP70 Family Protein 5; BiP; BIP; Heat Shock 70kD Protein 5 (Glucose-Regulated Protein, 78kD); Endoplasmic Reticulum Luminal Ca(2+)-Binding Protein Grp78; Epididymis Secretory Sperm Binding Protein Li 89n; EC 3.6.4.10; HEL-S-89n; GRP-78

Background

Gene Name: HSPA5

NCBI Gene Entry: [3309](#)

Storage

Stored at -20°C for 2 years.

Kit Components

1. 100 µg WT cell lysate
2. 100 µg KD cell lysate

Tested Cell Line

293T

Validation Methods

RT-qPCR; Western Blotting (WB)

Shipping

Shipped with gel ice packs. Immediately store the product in a standard freezer at -20°C upon receipt.

Instructions For Use

This knockdown cell lysate should be paired with wild-type 293T cell lysate for use. For Western blotting, we recommend running wild-type and knockdown lysates on the same gel, and loading each well with equal volume and equal amount of total proteins.

Manufacturing Process

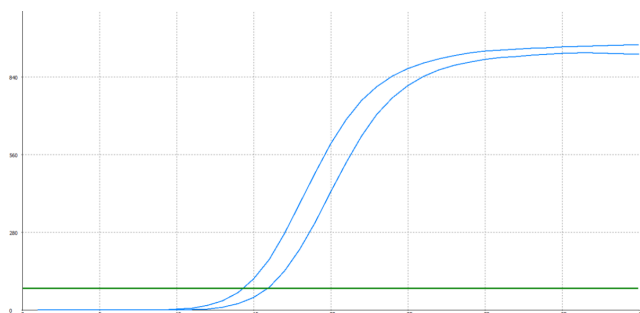
The following protocol was used to generate mRNA knockdown cell lysate:

1. Release 0.5 million 293T cells into a 35 mm tissue culture dish in 2 mL of the growth medium (DMEM containing 10% FBS and 1% pen/strep). Cell density should reach 50-60% confluence the following day.
2. 24 h after cell release, pre-warm the shRNA lentiviral medium to 37°C.
3. Discard 1 mL of the original growth medium of the 35 mm dish.
4. Using a serological pipette, gently mix the lentiviral solution 3 times.
5. Carefully add 1 mL of the lentiviral solution to the well. Tip: To prevent splashing, add the solution to the dish along the wall.
6. Add a polybrene stock solution to the culture medium at a final concentration of 5 µg/mL. Gently swirl the dish to mix.
7. 48 h after cell release, without discarding the original medium, add another 1 mL of lentiviral medium directly into the dish.
8. Add an additional polybrene stock solution into the dish to obtain a final concentration of 5 µg/mL. Tip: Now, the medium in the dish should be a total of 3 mL.
9. 72 h after cell release, cells may reach confluence. Trypsinize the cells off the 35 mm dish and culture those cells in a 60 mm dish.
10. Add puromycin to the dish at a final concentration of 4 µg/mL. Tip: To assess the efficacy of puromycin selection, culture a dish of wild-type 293T cells as a negative control.
11. Allow puromycin selection for 48 h. Almost all wild-type 293T cells should die, while the dish infected with lentiviruses should have some remaining cells.
12. Replace the medium with regular growth medium without puromycin and allow the cells to grow to confluence before harvesting or staining.
13. Cells were lysed with IntactProtein™ cell/tissue lysis kit (Cat#415) and stored in -20°C.

Note: This product is for research use only.

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Validation Data



Genotype	Ct Value
Wild-Type	14.1
Knock-Down	15.55
$\Delta Ct (Ct_{KD} - Ct_{WT})$	1.45
% mRNA Reduction	↓ 63%

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RT-qPCR analysis. 293T cells were infected with HSPA5-specific shRNA lentiviral particles, total

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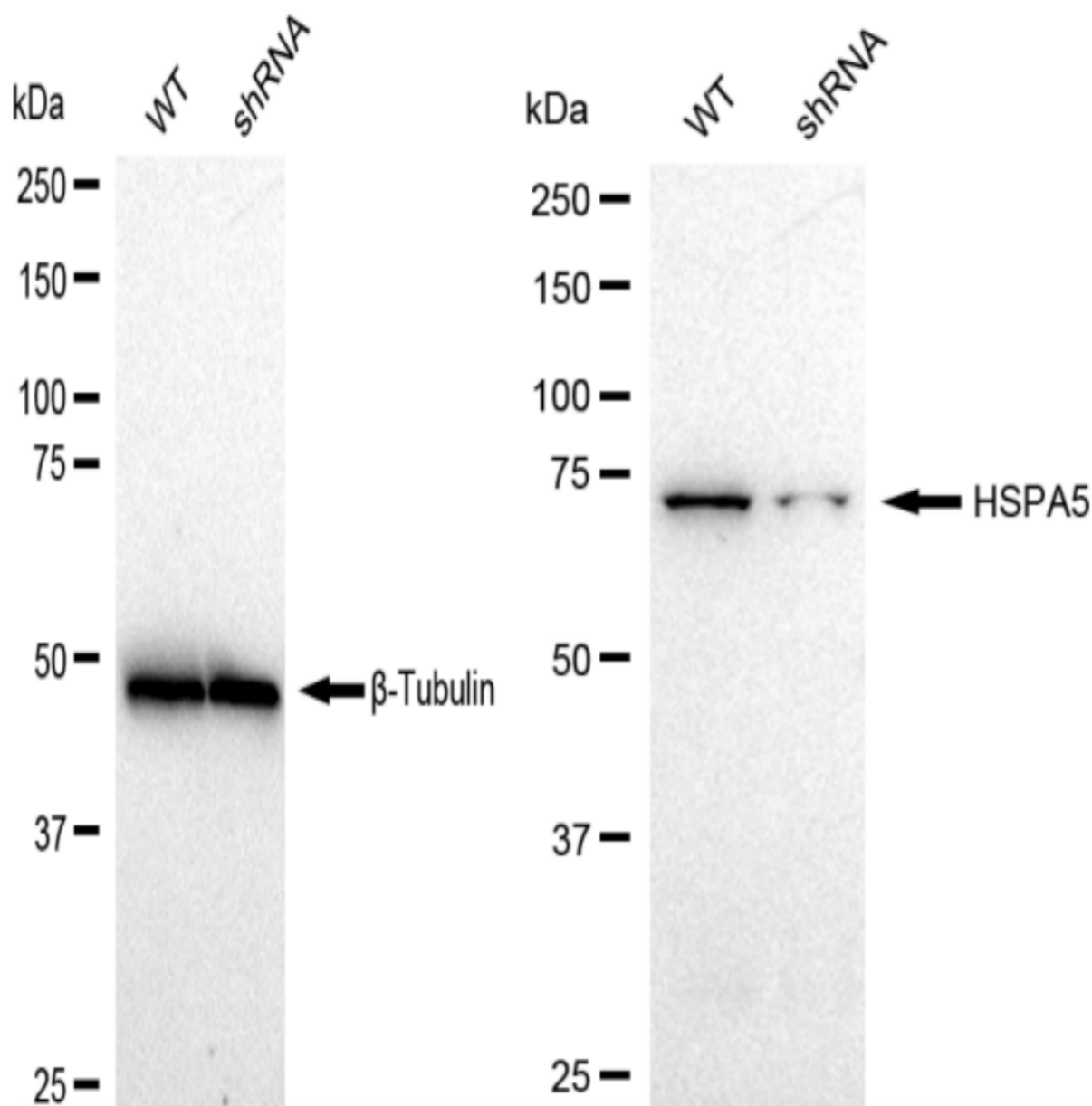
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WB-Validated HSPA5 Knockdown Cell Lysate Kit

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RNA was extracted from wild-type and knockdown cells, RT-qPCR was performed using gene-specific primers. ΔCt (CtKD-CtWT) was used to calculate mRNA reduction (%) between wild-type and knockdown cells using the following formula: $(1-1/2^{\Delta Ct}) \times 100\%$.



Western blotting analysis. HSPA5 protein expression in wild-type (WT) and shRNA knockdown (KD) 293T cells was detected using Western blotting. β -Tubulin served as a loading control. The blots were incubated with primary antibodies against HSPA5 and β -Tubulin, respectively, followed by incubating with HRP-conjugated goat anti-rabbit secondary antibody. Images were developed using FeQ™ ECL Substrate Kit.

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