Human ABCG2 Knockdown Cell Line (WB-Validated)

Catalog #: C61391

Aliases

ABCG2; ATP Binding Cassette Subfamily G Member 2 (Junior Blood Group); BCRP; ABCP; MXR; EST157481; CD338; ATP-Binding Cassette, Sub-Family G (WHITE), Member 2 (Junior Blood Group); Broad SubstRate Specificity ATP-Binding Cassette Transporter ABCG2; Placenta-Specific ATP-Binding Cassette Transporter; Mitoxantrone Resistance-Associated Protein; Breast Cancer Resistance Protein; URate Exporter; CDw338; BCRP1; Broad SubstRate Specificity ATP-Binding Cassette Transporter ABCG2 Isoform 1 (Junior Blood Group); Multi Drug Resistance Efflux Transport ATP-Binding Cassette Sub-Family G (WHITE) Member 2; ATP-Binding Cassette, Sub-Family G (WHITE), Member 2; ATP-Binding Cassette Sub-Family G Member02; ATPbinding Cassette Transporter ABCG2; ATP-Binding Cassette Transporter G2; Placenta Specific MDR Protein 2; ABC Transporter; CD338 Antigen; EC 7.6.2.2; CDw38; UAQTL1; ABC15; GOUT1; MXR-1; BMDP; MXR1; MRX

Background

Gene Name: ABCG2
NCBI Gene Entry: 9429

Storage

Store at liquid nitrogen for 1 year.

Kit Components

1. Human ABCG2 Knockdown Cell Line (Wb-Validated)
2. Wild-type cell line

Parental Cell Line

Human cell line supplied by the client

Validation Methods

RT-qPCR, Western blotting (WB)

Shipping

Shipped on Dry Ice.

Instructions For Use

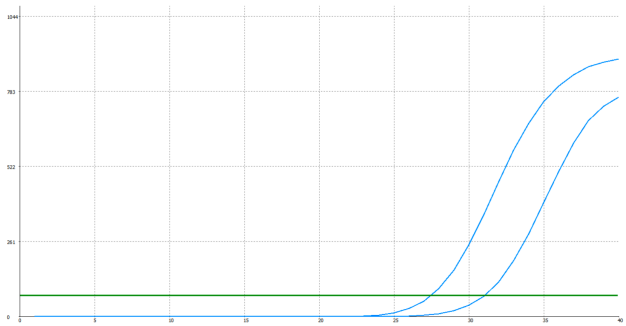
This knockdown cell line should be paired with wild-type cell line for use.

Manufacturing Process

The following protocol was used to generate mRNA knockdown cells:
1.Release 0.5 million 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 cells as a negative control.
11.Allow puromycin selection for 48 h. Almost all wild-type cells should die, while the dish infected with lentiviruses should have some remaining cells.
907.Replace the medium with regular growth medium without puromycin and allow the cells to grow to confluence before harvesting or staining.

Note: This product is for research use only.

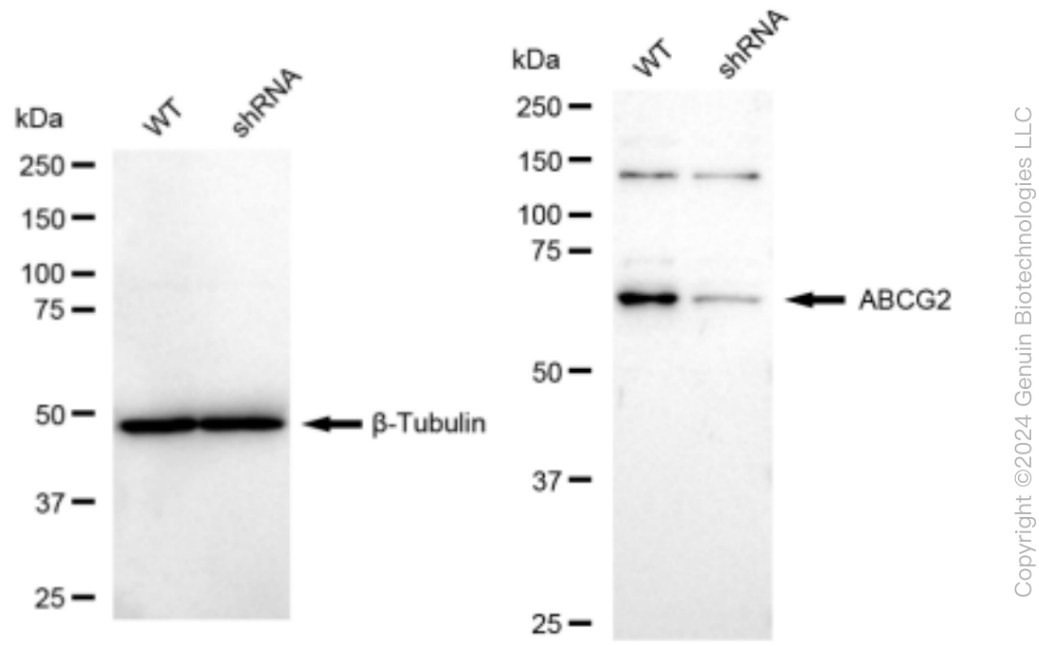
Validation Data



Genotype	Ct Value
Wild-Type	27.22
Knock-Down	30.46
ΔCt (Ct_{KD}-Ct_{WT})	3.24
% mRNA Reduction	⬇ 89%

RT-qPCR analysis. HeLa cells were infected with ABCG2-specific shRNA lentiviral particles, total 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: (1-1/2ΔCt) x 100%.



Western blotting analysis. ABCG2 protein expression in wild-type (WT) and shRNA knockdown (KD) HeLa cells was detected using Western blotting. β-Tubulin served as a loading control. The blots were incubated with primary antibodies against ABCG2 and β-Tubulin, respectively, followed by incubating with HRP-conjugated goat anti-rabbit secondary antibody. Images were developed using FeQ™ ECL Substrate Kit.