

## Product datasheet

# COVID-19 (SARS-COV-2) human knockout cell lines panel ab288557

KO VALIDATED

8 Images

### Overview

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<b>Product name</b>	COVID-19 (SARS-COV-2) human knockout cell lines panel
<b>Product overview</b>	A collection of 5 knockout cell lines to targets in the cell entry and cytokine storm pathways, in one kit for your convenience, with matching parental cell lines. For Research Use Only

#### **Included in this panel:**

ACE-2 knockout CACO-2 cell line ([ab273731](#)) (Unfortunately we are currently unable to provide the CACO-2 WT cell line. We would recommend using the ATCC CACO-2 WT)

TMPRSS2 knockout Calu-3 cell line ([ab273734](#)) + recommended control ([ab275465](#))

CSF3 knockout K562 cell line ([ab273740](#)) + recommended control ([ab275469](#))

IL-6 knockout A549 cell line ([ab273751](#)) + recommended control ([ab275463](#))

TNF knockout THP-1 cell line ([ab273761](#)) + recommended control ([ab275477](#))

#### **Target**

ACE-2: SARS-COV-2 binds to ACE-2 receptor via spike protein to allow cell entry (Pubmed: 32015507)

TMPRSS2: TMPRSS2 cleaves spike at the S2' site and is shown to be essential for activation of SARS-COV-2 in Calu-3 cells through antisense-mediated knockdown of TMPRSS2 expression (doi: <https://doi.org/10.1101/2020.04.15.042085>)

CSF3: upregulated in patients with severe COVID-19 symptoms. Found to be the most upregulated gene by SARS-COV-2 (Pubmed: 33551833)

IL-6 and TNF: The cytokine storm in COVID-19 shows increased levels of IL-6 and TNF. (Pubmed: 32754163)

**Notes** This product is subject to limited use licenses from The Broad Institute and ERS Genomics Limited, and is developed with patented technology. For full details of the limited use licenses and relevant patents please refer to our [limited use license](#) and [patent pages](#).

**Tested applications** **Suitable for:** WB

## Properties

Components	1 kit
<a href="#">ab273731 - ACE-2 knockout CACO-2 cell line (ab273731)</a>	1 x 1e+006cells/vial
<a href="#">ab273740 - CSF3 knockout K562 cell line (ab273740)</a>	1 x 1e+006cells/vial
<a href="#">ab275463 - Human wild-type A549 cell line (ab275463)</a>	1 x 1e+006cells/vial
<a href="#">ab275465 - Human wild-type Calu-3 cell line (ab275465)</a>	1 x 1e+006cells/vial
<a href="#">ab275469 - Human wild-type K-562 cell line (ab275469)</a>	1 x 1e+006cells/vial
<a href="#">ab275477 - Human wild-type THP-1 cell line (ab275477)</a>	1 x 1e+006cells/vial
<a href="#">ab273751 - IL-6 knockout A549 cell line (ab273751)</a>	1 x 1e+006cells/vial
<a href="#">ab273734 - TMPRSS2 knockout Calu-3 cell line (ab273734)</a>	1 x 1e+006cells/vial
<a href="#">ab273761 - TNF knockout THP-1 cell line (ab273761)</a>	1 x 1e+006cells/vial

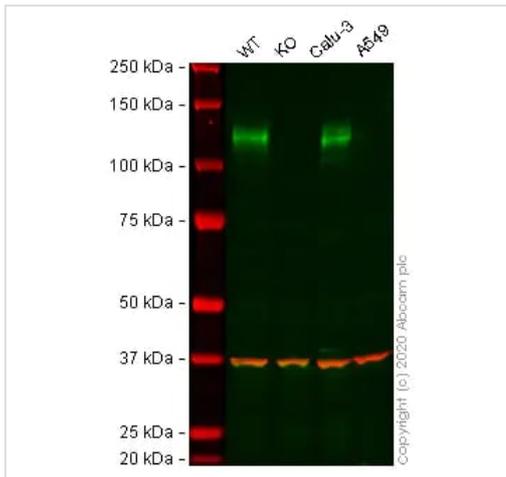
**Cellular localization** TNF alpha: Secreted and Cell membrane. IL-6: Secreted. G-CSF: Secreted. ACE2: Secreted and Cell membrane. TMPRSS2: Cell membrane and Secreted. Activated by cleavage and secreted.

## Applications

**The Abpromise guarantee** Our [Abpromise guarantee](#) covers the use of ab288557 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use at an assay dependent concentration.

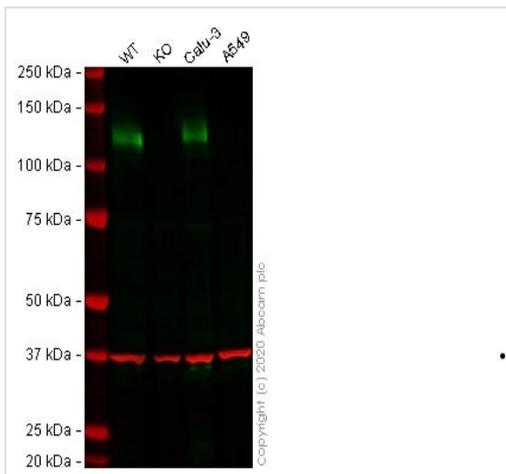
## Images



Human ACE2 knockout Caco-2 cell line

**Lanes 1 - 4:** Merged signal (red and green). Green - **ab108252** observed at 125 kDa. Red - loading control **ab8245** (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

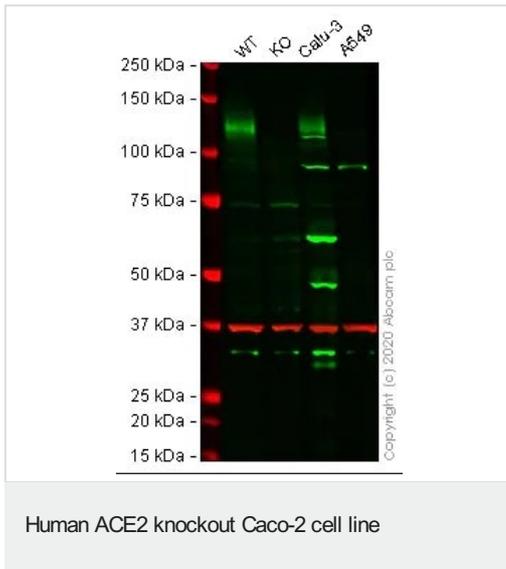
**ab108252** was shown to react with ACE2 in Caco-2 wild-type cells in western blot with loss of signal observed in ACE2 knockout cell line **ab273731** (knockout cell lysate **ab275516**). Wild-type and ACE2 knockout Caco-2 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab108252** and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Human ACE2 knockout Caco-2 cell line

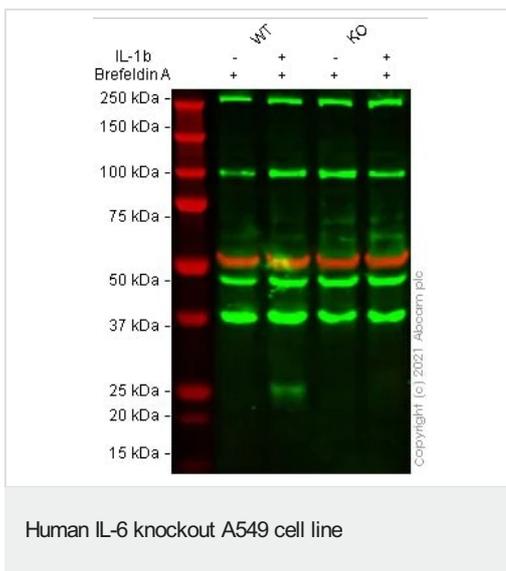
**Lanes 1 - 4:** Merged signal (red and green). Green - **ab108209** observed at 125 kDa. Red - loading control **ab8245** (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

**ab108209** was shown to react with ACE2 in Caco-2 wild-type cells in western blot with loss of signal observed in ACE2 knockout cell line **ab273731** (knockout cell lysate **ab275516**). Wild-type and ACE2 knockout Caco-2 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab108209** and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

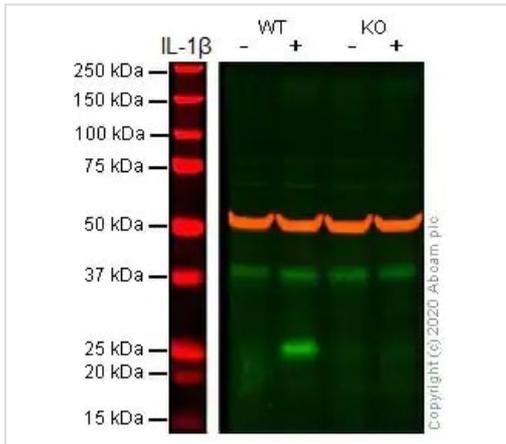


**Lanes 1 - 4:** Merged signal (red and green). Green - **ab65863** observed at 125 kDa. Red - loading control **ab8245** (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

**ab65863** was shown to react with ACE2 in Caco-2 wild-type cells in western blot with loss of signal observed in ACE2 knockout cell line **ab273731** (knockout cell lysate **ab275516**). Wild-type and ACE2 knockout Caco-2 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab65863** and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at 1 µg/ml and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



False colour image of Western blot: Anti-IL-6 antibody [EPR22565-204] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (**ab7291**) loading control staining at 1/20000 dilution, shown in red. In Western blot, **ab233551** was shown to bind specifically to IL-6. A band was observed at 25 kDa in wild-type A549 cell lysates with no signal observed at this size in IL6 knockout cell line **ab273751** (knockout cell lysate **ab275501**). To generate this image, wild-type and IL6 knockout A549 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) at 1/20000 dilution.

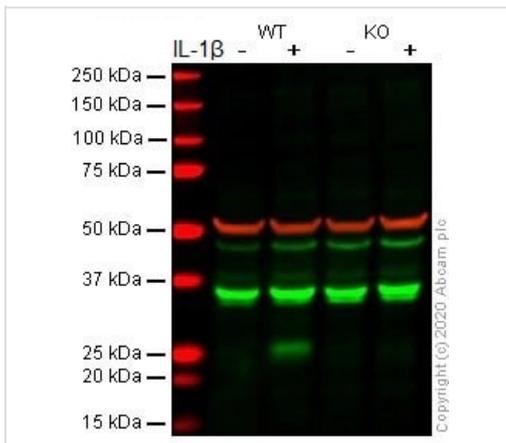


Human IL-6 knockout A549 cell line

**Lanes 1 - 4:** Merged signal (red and green). Green - **ab233706** observed at 25 kDa. Red - loading control **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) observed at 55kDa.

**ab233706** was shown to react with IL-6 in wild-type A549 cells in western blot with loss of signal observed in IL-6 knockout cell line **ab273751** (knockout cell lysate **ab275501**). Wild-type and IL-6 knockout A549 cell lysates were subjected to SDS-PAGE.

Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab233706** and **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

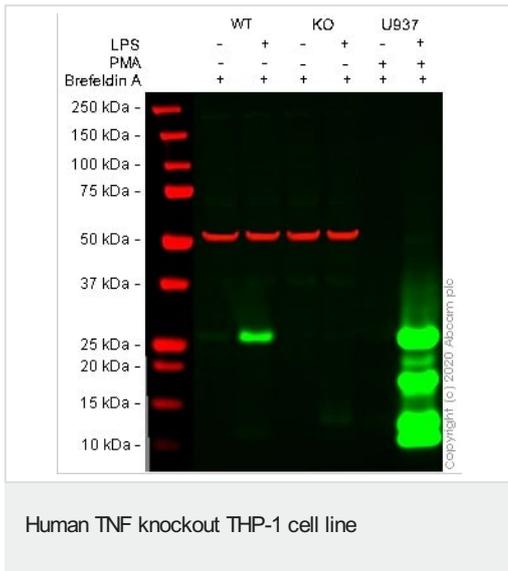


Human IL-6 knockout A549 cell line

**Lanes 1 - 4:** Merged signal (red and green). Green - **ab214429** observed at 25 kDa. Red - loading control **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) observed at 55kDa.

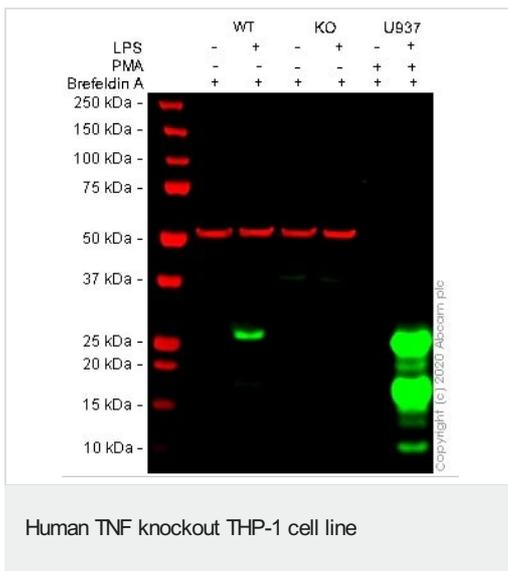
**ab214429** was shown to react with IL-6 in wild-type A549 cells in western blot with loss of signal observed in IL-6 knockout cell line **ab273751** (knockout cell lysate **ab275501**). Wild-type A549 and IL-6 knockout cell lysates were subjected to SDS-PAGE.

Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab214429** and **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



**Lanes 1 - 6:** Merged signal (red and green). Green - **ab183218** observed at 26 kDa. Red - loading control **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) observed at 55 kDa.

**ab183218** was shown to react with TNF alpha in THP-1 wild-type cells in Western blot with loss of signal observed in TNF knockout sample. Wild-type and TNF knockout THP-1 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab183218** and **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.



**Lanes 1 - 6:** Merged signal (red and green). Green - **ab255275** observed at 26 kDa. Red - loading control **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) observed at 55 kDa.

**ab255275** was shown to react with TNF alpha in THP-1 wild-type cells in Western blot with loss of signal observed in TNF knockout sample. Wild-type and TNF knockout THP-1 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with **ab255275** and **ab7291** (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

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