

## Product datasheet

# Human ATR knockout A549 cell line ab276104

### Overview

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<b>Product name</b>	Human ATR knockout A549 cell line
<b>Parental Cell Line</b>	A549
<b>Organism</b>	Human
<b>Passage number</b>	<20
<b>Biosafety level</b>	1
<b>General notes</b>	<p><b>Recommended control:</b> Human wild-type A549 cell line (<a href="#">ab275463</a>). Please note a wild-type cell line is not automatically included with a knockout cell line order, if required please add recommended wild-type cell line at no additional cost using the code WILDTYPE-TMTK1.</p> <p><b>Cryopreservation cell medium:</b> Cell Freezing Medium-DMSO Serum free media, contains 8.7% DMSO in MEM supplemented with methyl cellulose.</p> <p><b>Culture medium:</b> F-12K + 10% FBS</p> <p><b>Initial handling guidelines:</b> Upon arrival, the vial should be stored in liquid nitrogen vapor phase and not at -80°C. Storage at -80°C may result in loss of viability.</p> <ol style="list-style-type: none"> <li>1. Thaw the vial in 37°C water bath approximately 1-2 minutes.</li> <li>2. Transfer the cell suspension (0.8 ml) to a 15 ml/50 ml conical sterile polypropylene centrifuge tube containing 8.4 ml pre-warmed <b>culture medium</b>, wash vial with an additional 0.8 ml <b>culture medium</b> (total volume 10 ml) to collect remaining cells, and centrifuge at 201 x g (rcf) for 5 minutes at room temperature. 10 ml represents minimum recommended dilution. 20 ml represents maximum recommended dilution.</li> <li>3. Resuspend the cell pellet in 5 ml pre-warmed <b>culture medium</b> and count using a haemocytometer (<a href="#">Click here to view haemocytometer protocol</a>) or alternative cell counting method. Based on cell count, seed cells in an appropriate cell culture flask at a density of <math>2 \times 10^4</math> cells/cm<sup>2</sup>. This should allow for confluency within 48 hours. Seeding density is given as a guide only and should be scaled to align with individual lab schedules.</li> <li>4. Incubate the culture at 37°C incubator with 5% CO<sub>2</sub>. Cultures should be monitored daily.</li> </ol> <p><b>Subculture guidelines:</b></p> <p>All seeding densities should be based on cell counts gained by established methods. A guide seeding density of <math>2 \times 10^4</math> cells/cm<sup>2</sup> is recommended for confluency (80-90% confluence) within 48 hours.</p> <p>A partial media change 24 hours prior to subculture may be helpful to encourage growth, if required.</p> <p>Cells should be passaged when they have achieved 80-90% confluence.</p> <p><a href="#">Click here to view the Mammalian cell tissue culture protocol</a></p>

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## Properties

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<b>Number of cells</b>	1 x 10 <sup>6</sup> cells/vial, 1 mL
<b>Viability</b>	~90%
<b>Adherent /Suspension</b>	Adherent
<b>Tissue</b>	Lung
<b>Cell type</b>	epithelial
<b>Disease</b>	Carcinoma
<b>Gender</b>	Male
<b>Mycoplasma free</b>	Yes
<b>Storage instructions</b>	Shipped on Dry Ice. Store in liquid nitrogen.

## Target

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<b>Function</b>	Serine/threonine protein kinase which activates checkpoint signaling upon genotoxic stresses such as ionizing radiation (IR), ultraviolet light (UV), or DNA replication stalling, thereby acting as a DNA damage sensor. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates BRCA1, CHEK1, MCM2, RAD17, RPA2, SMC1 and p53/TP53, which collectively inhibit DNA replication and mitosis and promote DNA repair, recombination and apoptosis. Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX at sites of DNA damage, thereby regulating DNA damage response mechanism. Required for FANCD2 ubiquitination. Critical for maintenance of fragile site stability and efficient regulation of centrosome duplication.
<b>Tissue specificity</b>	Ubiquitous, with highest expression in testis. Isoform 2 is found in pancreas, placenta and liver but not in heart, testis and ovary.
<b>Involvement in disease</b>	Defects in ATR are a cause of Seckel syndrome type 1 (SCKL1) [MIM:210600]. SCKL1 is a rare autosomal recessive disorder characterized by growth retardation, microcephaly with mental retardation, and a characteristic 'bird-headed' facial appearance.
<b>Sequence similarities</b>	Belongs to the PI3/P14-kinase family. ATM subfamily. Contains 1 FAT domain. Contains 1 FATC domain. Contains 2 HEAT repeats. Contains 1 PI3K/P14K domain.
<b>Post-translational modifications</b>	Phosphorylated; autophosphorylates in vitro.
<b>Cellular localization</b>	Nucleus. Nucleus > PML body. Depending on the cell type, it can also be found in PML nuclear bodies. Recruited to chromatin during S-phase. Redistributes to discrete nuclear foci upon DNA damage, hypoxia or replication fork stalling.

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