

CHO-PDCD1 Cells | 305973

General information

Description

Disclaimer: The prices displayed for cell lines are exclusively for academic/not-for-profit customers. For commercial entities the price is approximately €6,250. If you represent a commercial entity or are unsure which category applies, please [contact us](#).

CHO-PDCD1 cells are recombinant Chinese hamster ovary (CHO) cells engineered to stably express human programmed cell death protein 1 (PD-1; PDCD1/CD279), an inhibitory immune checkpoint receptor primarily found on activated T cells, B cells, and other immune cell subsets. PD-1 is a type I transmembrane protein belonging to the immunoglobulin superfamily and functions as a critical regulator of immune tolerance through interaction with its ligands PD-L1 (CD274) and PD-L2 (PDCD1LG2). Stable PDCD1-expressing CHO models are commonly developed to provide controlled and reproducible receptor expression for cell-based binding and functional assays.

CHO-PDCD1 cells are widely used in immuno-oncology and therapeutic antibody development workflows, particularly for characterization of checkpoint inhibitor antibodies, ligand-receptor interaction studies, affinity measurements, and flow cytometry-based screening assays. These cells are also suitable for evaluating bispecific antibodies, engineered ligands, CAR-T targeting strategies, and receptor occupancy assays involving the PD-1/PD-L1 signaling axis. Because CHO cells exhibit robust growth characteristics, high transfection efficiency, and low endogenous expression of many human immune receptors, they provide a well-defined background for studying recombinant PD-1 biology and therapeutic targeting.

Organism

Chinese hamster

Tissue

Ovary

Disease

Chinese hamster ovary, non-neoplastic; genetically engineered for PD-1 (PDCD1/CD279) surface expression

Applications

Antibody screening; PD-1-targeted immunotherapy development; checkpoint inhibitor research; T-cell biology; flow cytometry

Characteristics

Age

Adult

Gender

Female

Morphology

Epithelial-like

Cell type

Epithelial cells

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| Growth properties | Adherent/suspension |
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Regulatory Data

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| Citation | CHO-PDCD1 (Cytion catalog number 305973) |
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| Biosafety level | 1 |
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| NCBI_TaxID | 10029 |
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| CellosaurusAccession | CVCL_A8X0 |
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| GMO Status | GMO-S1: This CHO cell line contains a PDCD1 expression cassette supporting receptor-function analyses. This classification applies only within Germany and may differ elsewhere. |
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Biomolecular Data

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| Receptors expressed | PDCD1/CD279 |
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Handling

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| Culture Medium | <p>For adherent cultures: DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO₃ (Cytion article number 820400a)</p> <p>For suspension cultures: CHO Growth Medium A (from InSCREENeX; InSCREENeX catalog number INS-ME-1039)</p> |
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| Supplements | For adherent cultures: Supplement the medium with 5% FBS. Add Geneticin (G418-Sulfat) to achieve a final concentration of 0.5 mg/mL. |
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| Dissociation Reagent | For adherent cultures: Trypsin-EDTA |
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| Doubling time | approx. 14-16 hours |
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Subculturing For routine adherent cell culture: Aspirate the old culture medium from the adherent cells, and wash them with PBS to remove any remaining medium. After aspirating the PBS, add the appropriate volume of Trypsin/EDTA solution based on the culture vessel size (e.g., 1 ml for a T25 flask, 3 ml for a T75 flask) and incubate at room temperature or 37°C for 5-10 minutes, or until the cells detach. Monitor detachment under a microscope, and gently tap the vessel if necessary to release the cells. Once detached, add complete medium to inactivate the Trypsin/EDTA, gently resuspend the cells, and transfer an aliquot of the cell suspension into a new culture vessel containing fresh medium. Place the vessel in an incubator set to 37°C with 5% CO₂, and change the medium every 2-3 days.

Split ratio 1 to 5

Seeding density 2 to 5 x 10⁴ cells/cm²

Fluid renewal 2 to 3 times per week

Post-Thaw Recovery After thawing, split the cells at a ratio of 1:2 to 1:3 in T25 flasks and allow the cells to recover from the freezing process and to adhere (for adherent cultures) for at least 24 hours.

Freeze medium As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

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Thawing and Culturing Cells

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
6. Centrifuge the mixture at $300 \times g$ for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Incubation Atmosphere

37°C , 5% CO_2 , humidified atmosphere.

Shipping Conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately -78°C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

Storage Conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about -150 to -196°C . Storage at -80°C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

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Sterility

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.

To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.