Product sheet

HEK293-GPRC5D Cells | 305989

General information

Description	**Disclaimer: The prices displayed for cell lines are exclusively for academic/not-for-profit customers. For commercial entitites the price is approximately €6,250.** **If you represent a commercial entity or are unsure which category applies, please contact us.** HEK293-GPRC5D cells are human embryonic kidney 293 (HEK293) cells engineered to stably express human G protein-coupled receptor family C group 5 member D (GPRC5D), an orphan receptor belonging to the class C G protein-coupled receptor family. GPRC5D exhibits highly restricted expression in normal tissues, with predominant expression reported in hair follicles, keratinized tissues, and plasma cells. Importantly, the receptor is highly expressed in multiple myeloma and certain other plasma cell malignancies, where its limited normal tissue distribution and robust tumor-associated expression have made it a prominent target for immunotherapeutic development, particularly in patients relapsing after BCMA-directed therapies. HEK293-GPRC5D cells are widely used in hematologic oncology research and therapeutic development for characterization of GPRC5D-targeted monoclonal antibodies, bispecific T-cell engagers, antibody-drug conjugates, and CAR-T or CAR-NK cell therapies. The stable recombinant expression system enables quantitative evaluation of antigen binding affinity, receptor occupancy, surface expression density, epitope specificity, and target-dependent cytotoxicity. These cells are particularly valuable for assessing the activity and selectivity of engineered immune cell therapies and T-cell redirecting biologics targeting GPRC5D-positive malignancies. Additional applications include flow cytometry assay development, reporter assays, high-throughput screening, and validation of receptor-specific imaging agents or diagnostic reagents.
Organism	Human
Tissue	Fetal Kidney
Disease	Transformed/immortalized; non-tumorigenic (HEK293 background)
Applications	GPRC5D-targeted antibody and bispecific antibody development; multiple myeloma therapeutics; CAR-T cell therapy; ADCC/CDC assays; flow cytometry; immuno-oncology screening

Characteristics

Age	Fetus
Gender	Female
Morphology	Epithelial-like
Cell type	Epithelial cells

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Growth properties	Monolayer, adherent

Regulatory Data

Citation	HEK293-GPRC5D (Cytion catalog number 305989)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_6G25
GMO Status	GMO-S1: This HEK293 cell line contains a GPRC5D expression construct for multiple myeloma antigen studies and targeted therapy development. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Receptors expressed	GPRC5D

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS, 1 mM sodium pyruvate, 10 mM HEPES, 1% NEAA. Add Geneticin (G418-Sulfat) to achieve a final concentration of 1 mg/mL.
Dissociation Reagent	Trypsin-EDTA
Doubling time	approx. 24-36 hours
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 until the cells detach (5-10 minutes). 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% CO_2, and change the medium every 2-3 days.

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Split ratio	1 to 5
Seeding density	2 to 4 x 10^4 cells/cm^2
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.

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 x 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

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.