

CHO-FCGR2B Cells | 305982

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-FCGR2B cells are recombinant Chinese hamster ovary (CHO) cells engineered to stably express human Fc gamma receptor IIB (FcγRIIB; FCGR2B/CD32B), a low-affinity inhibitory receptor for the Fc region of immunoglobulin G (IgG). FcγRIIB is broadly expressed on B cells, dendritic cells, monocytes, macrophages, and other immune cell populations, where it functions as a critical negative regulator of immune activation. Upon co-engagement with activating receptors, FcγRIIB recruits phosphatases through its immunoreceptor tyrosine-based inhibitory motif (ITIM), thereby suppressing downstream signaling pathways involved in antibody-mediated immune responses. Dysregulation of FcγRIIB signaling has been implicated in autoimmune disease, chronic inflammation, and altered responses to antibody therapeutics.

CHO-FCGR2B cells are widely used in therapeutic antibody development and immunology research to evaluate Fc-mediated interactions, receptor selectivity, and inhibitory signaling mechanisms. These cells support quantitative assessment of IgG subclass binding, Fc engineering strategies, immune complex interactions, and antibody-dependent modulation of Fcγ receptor pathways. They are particularly valuable for screening monoclonal antibodies, bispecific antibodies, Fc-fusion proteins, and glycoengineered biologics designed to alter FcγRIIB engagement. CHO-FCGR2B models are also frequently applied in flow cytometry assays, receptor occupancy studies, reporter assays, and high-throughput screening platforms intended to characterize Fc receptor specificity and functional activity.

Organism

Chinese hamster

Tissue

Ovary

Disease

Chinese hamster ovary, non-neoplastic; genetically engineered for FcγRIIB (CD32B/FCGR2B) surface expression

Applications

Antibody Fc engineering; inhibitory Fc receptor studies; ADCP research; immunotherapy development; flow cytometry

Characteristics

Age

Adult

Gender

Female

Morphology

Epithelial-like

Cell type

Epithelial cell of ovary

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Growth properties	Adherent/suspension
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Regulatory Data

Citation	CHO-FCGR2B (Cytion catalog number 305982)
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Biosafety level	1
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NCBI_TaxID	10029
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CellosaurusAccession	CVCL_A8W4
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GMO Status	GMO-S1: This CHO cell line contains an FCGR2B expression cassette supporting receptor-function analyses. This classification applies only within Germany and may differ elsewhere.
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Biomolecular Data

Receptors expressed	FCGR2B/CD32B
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Handling

Culture Medium	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) For suspension cultures: CHO Growth Medium A (from InSCREENeX; InSCREENeX catalog number INS-ME-1039)
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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.