**Product sheet**

# RenCa-IL2 Cells | 400322

## General information

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| **Description** | RenCa-IL2 is a genetically modified variant of the RenCa cell line, a murine renal adenocarcinoma cell line. This particular modification involves the stable transfection of the gene encoding for interleukin-2 (IL-2), a cytokine critical in the regulation of white blood cells that are crucial for the immune system. The IL-2 gene has been introduced into the RenCa cells to study the effects of IL-2 expression on tumor growth, immune cell recruitment, and the efficacy of immunotherapeutic strategies in a controlled experimental setting.<br><br>Originally derived from renal carcinoma found in Balb/c mice, RenCa cells are used to explore cancer immunology and therapy approaches, particularly in understanding how tumors evade the immune system and how these defenses can be counteracted. The introduction of IL-2 into RenCa cells facilitates research into the role of this cytokine in modulating the tumor microenvironment, potentially enhancing the recruitment and activation of T cells and natural killer (NK) cells at the tumor site. This is particularly significant in the context of developing more effective cancer immunotherapies.<br><br>Studies using the RenCa-IL2 cell line can contribute valuable insights into the mechanisms through which IL-2 may promote anti-tumor immune responses, thus serving as a model for the assessment of new cancer treatments that use cytokines to stimulate the immune response. Moreover, the RenCa-IL2 cell line is useful for evaluating the dynamics of immune cell interaction within the tumor milieu, providing a valuable tool for preclinical testing of biologic relevance and therapeutic potential. |
| **Organism** | Mouse |
| **Tissue** | Kidney |
| **Disease** | Carcinoma |
| **Synonyms** | RENCA-IL-2 |

## Characteristics

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| **Breed/Subspecies** | BALB/c |
| **Age** | 6 weeks |
| **Gender** | Male |
| **Morphology** | Epithelial-like |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | RenCa-IL2 (Cytion catalog number 400322) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 10090 |
| **CellosaurusAccession** | CVCL_5944 |
| **GMO Status** | GMO-S1: This murine renal carcinoma cell line contains an IL-2 expression construct introduced by transfection, leading to stable interleukin-2 production for studying IL-2-driven immune responses in tumor models. This classification applies only within Germany and may differ elsewhere. |

## Biomolecular Data

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| **Tumorigenic** | Yes, in syngeneic mice |
| **Products** | IL-2 |

## Handling

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| **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 |
| **Dissociation Reagent** | Accutase |
| **Subculturing** | Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium. |
| **Fluid renewal** | 2 to 3 times per week |
| **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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.<br>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.<br>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. |
| **Flask Coating** | None |
| **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.<br><br>To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections. |