Product sheet

NCI-N87-Luc Cells | 305695

General information

Description	NCI-N87-Luc is a bioluminescent derivative of the human NCI-N87 gastric adenocarcinoma cell line, engineered to stably express a firefly luciferase reporter gene. The parental NCI-N87 cell line was established from a liver metastasis of a gastric tubular adenocarcinoma in a male patient of African descent and is characterized by HER2 (ERBB2) gene amplification and protein overexpression, making it one of the primary preclinical models for HER2-positive gastric cancer. NCI-N87 cells exhibit epithelial morphology and are widely used to evaluate the efficacy of HER2-targeted therapies including trastuzumab, pertuzumab, and trastuzumab-emtansine (T-DM1). The stable luciferase integration in NCI-N87-Luc enables sensitive, noninvasive bioluminescence imaging (BLI) of tumor burden in subcutaneous and orthotopic xenograft models in immunocompromised hosts. The luminescent signal correlates with viable tumor cell number, supporting longitudinal monitoring of tumor engraftment, growth kinetics, and response to HER2-targeted or chemotherapeutic agents. NCI-N87-Luc is particularly valuable for preclinical evaluation of antibody-drug conjugates (ADCs), bispecific antibodies, and novel HER2-directed strategies in gastric cancer, as well as for high-throughput drug screening applications. NCI-N87-Luc retains the HER2-amplified molecular phenotype and adherent growth characteristics of the parental NCI-N87 line. The luciferase reporter enhances experimental throughput and sensitivity for in vivo imaging studies. Researchers should confirm luciferase activity, HER2 expression status, and growth kinetics under their specific experimental conditions prior to use in quantitative imaging or pharmacological studies.
Organism	Human
Tissue	Stomach
Disease	Gastric tubular adenocarcinoma
Metastatic site	Liver
Synonyms	NCI-N87, NCI N87, N-87, NCI-H87, H87, H-87, NCIN87

Characteristics

Age	Age unspecified
Gender	Male
Ethnicity	African
Morphology	Epithelial
Growth properties	Adherent

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Regulatory Data

Citation	NCI-N87-Luc (Cytion catalog number 305695)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1603
GMO Status	GMO-S1: This cell line contains a stably integrated firefly luciferase reporter cassette (Luc2, codon-optimized) introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Antigen expression	Luc2 (firefly, codon-optimized)
Tumorigenic	Yes

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, 10 mM HEPES, 2,5g/L Glucose, 1 mM Sodiumpyruvate
Dissociation Reagent	Accutase 10 min at 37°C
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.
Split ratio	1 to 3

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Seeding density	2 to 4 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.
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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
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