HCT116-Luc

305787

GENERAL INFORMATION

Description

HCT 116-Luc □人结直肠癌细胞系 HCT 116 的萤火虫荧光素酶表达衍生物。 该细胞系□通过转导表达蛾萤（Photinus pyralis）萤火虫荧光素酶的构建体以及嘌呤霉素抗性盒（pac）而产生的，因此报告基因的表达□恒定的，而非依赖于特定信号通路。 因此，生物发光信号与存活细胞数成正比，这使得该模型适用于体内肿瘤负荷的无创追踪，以及体外基于培养板的细胞存活率和增殖率的快速定量分析。

该衍生细胞系保留了亲本 HCT 116 细胞系的特征，包括伴有 DNA 错配修复缺陷的微卫星不稳定性、野生型 TP53 以及接近二倍体的核型。其突变背景包括 KRAS p.Gly13Asp、PIK3CA p.His1047Arg、可稳定β-连环蛋白并驱动持续性Wnt信号传导的杂合性CTNNB1 p.Ser45del突变，以及TGFBR2和ACVR2A基因中典型的纯合性移码突变（常见于MSI型结直肠癌）。此外，CDKN2A、EP300、BRCA2和PPM1D基因中也存在其他变异。报告基因的稳定整合使得在同一动物体内对原位和皮下异种移植瘤进行纵向成像成为可能，从而减少了研究队列规模，并免除了在每个时间点进行终点评估的必要。 在常规扩增过程中，采用嘌呤霉素筛选来维持转基因。

该细胞系广泛应用于肿瘤学临床前研究、细胞毒性和靶向药物的疗效研究、转移和肿瘤归巢模型，以及高通量细胞毒性筛选 ——在这些应用中，发光读数比比色法检测具有更宽的动态范围。 由于萤火虫蛋白的表达不受诱导调控，该信号反映的□细胞数量和代谢状态，而非特定通路的活性，因此，改变 ATP 水平或细胞代谢的化合物可能会影响发光，而与细胞杀伤无关。建议采用正交存活率检测进行确认，并在解释对 DNA损伤剂和免疫调节治疗的反应时，应考虑 HCT 116细胞系在错配修复缺陷方面的背景。

Tissue	结肠
Disease	结肠癌

Synonyms

- NF-KappaB reporter (Luc)-HCT-116
- NF-KappaB reporter (Luc)-HCT116

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

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.

Biosafety level	1

CHARACTERISTICS

Morphology	上皮样
Tumourigenic	Yes, in nude mice (inoculum of 5-10 x 106 cells)
Ploidy status	Aneuploid
MSI status	Instable (MSI-high)

Karyotype

The karyotype of HCT116 cells is nearly diploid, with 70% of the cells harboring 45 chromosomes, often showing an overrepresentation of chromosomes 8, 10, 16, and 17 on the long arms, along with the absence of the Y-chromosome.

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

IDENTIFIERS

Citation

HCT116-Luc□Cytion □□□□ 305787□

NCBI TaxID	9606
Cellosaurus	CVCL_A9P2

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

Luc2□□□□□□□□□□□□□

Mutational profile

□□□p.Lys437Argfs*5□□□□□□□□□p.Ile2675Aspfs*6□□□□□□□□□p.Arg24Serfs*20□□□□□ □□□p.Ser45del□□□□□□□□
p.Met1470Cysfs*22□□□□□□□□□p.Asn1700Thrfs*9□□□□□ □□□p.Gly13Asp□□□□□□□□□p.His1047Arg□□□□□□□□□p.Leu450Ter□□□□□□
□□p.Lys128Serfs*35□□□□

HANDLING AND CULTURE

Culture medium

McCoys 5a□w□3.0 □/□□□□□w□□□□□□□□w□2.0 □□□□□□□□w□2.2 □/□ NaHCO3□Cytion □□□□ 820200a□□

Incubation atmosphere	37°C, 5%CO2, □□□□□

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

Sterility

□□□□ PCR □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□□

Freeze medium	□□□□□□□□□□□□□□□ FBS□+10% DMSO □ CM-1□Cytion □□□□□□ 800100□□□□□□□□□ □□□□□□□□□□□□□□□□□CM-1□Cytion □□□□□□ 800100□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□

Storage conditions

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Shipping conditions

□□ -78 °C □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

DONOR

Donor age	48 年
Ethnicity	高加索人

LEGAL AND SAFETY

Safety precautions

计划将低温样品储存在液氮中以便将来解冻时，必须遵守严格的安全措施。在将冷冻样本移入或移出液氮罐时，必须穿戴适当的防护手套和防护服，并使用面罩或安全护目镜。这样做 □为了降低在移出时因冷冻样品爆炸而造成伤害的风险，因为爆炸可能导致锋利的碎片飞溅。

Disclaimer

我们提供的细胞仅用于体外实验室研究目的，不用于临床或诊断用途，也不得用于人类或兽医目的。用户必须遵守在研究环境中处理和使用这些细胞的所有适用准则和法规。

Warranty

在Cytion，我们保证产品的质量和活力。
我们保证，从我们的工厂发货后 60 天内，我们的细胞在开始培养时都 □存活的。
我们保证所有材料均符合分析证书和 /或产品说明书中描述的规格。
有关详细信息，请参阅我们的 <a href="" /Who-we-are/Warranty/"" hreflang=""x-default"">保修声明。

Material Transfer Agreement required	Yes