Ku 80-/-

305258

GENERAL INFORMATION

Description

Ku80-/- MEF（小鼠胚胎成纤维细胞）细胞是经过基因工程改造的成纤维细胞，它们来自缺乏 Ku80 基因（XRCC5）的小鼠。Ku80蛋白与Ku70共同组成Ku异源二聚体，对于DNA双链断裂（DSB）修复的非同源末端连接（NHEJ）途径至关重要。这些细胞中缺少Ku80会削弱它们有效修复DSB的能力，从而使它们成为研究NHEJ途径在基因组稳定性、DNA修复机制和癌症生物学中的作用的宝贵模型。

Ku80-/- MEF细胞由于DSB修复能力受损，对电离辐射和其他DNA损伤剂的敏感性增加。这些细胞还容易积累染色体畸变，表现出基因组不稳定性。缺少 Ku80 不仅会影响 DNA 修复，还会影响 V(D)J 重组等其他细胞过程，而 V(D)J 重组对免疫系统中抗体和 T 细胞受体的多样化发展至关重要。

利用 Ku80-/- MEF 细胞进行的研究为了解 NHEJ 的分子机制以及 DNA 修复缺陷的广泛影响提供了重要启示。这些研究对于了解癌症和其他与基因组不稳定性有关的疾病的发展至关重要。此外，这些研究还有助于探索潜在的治疗靶点，以增强癌细胞的 DNA 修复能力，从而提高依赖诱导肿瘤细胞 DNA 损伤的癌症治疗效果。

Tissue	胚胎
Disease	正常小鼠胚胎成纤维细胞（Ku80/XRCC5敲除；SV40永生化；NHEJ缺陷）
Metastatic site	不适用（永生化MEF细胞；非临床肿瘤样本）

Applications

NHEJ DNA修复研究；Ku80/XRCC5功能；DNA双链断裂（DSB）修复；基因组不稳定性建模；辐射敏感性； V(D)J重组；癌症生物学；遗传毒性检测； DNA损伤应答

Synonyms

- Ku80-/- MEF

CLASSIFICATION

Organism	Mouse
Sex	Unspecified
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This MEF line carries homozygous Ku80 (XRCC5) knockout and SV40 large T antigen immortalization. The SV40 transgene is stably integrated. This classification applies only within Germany and may differ elsewhere.

Biosafety level	2

CHARACTERISTICS

Morphology	纤维母细胞样
Cell type	成纤维细胞

IDENTIFIERS

Citation

Ku 80-/-（Cytion 目录编号 305258）

NCBI TaxID	10090

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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

Cellosaurus	CVCL_UJ16

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

□□□Ku80-/-

Viruses

□□□□ Simian virus 40 (SV40)

HANDLING AND CULTURE

Culture medium

DMEM□w□4.5 □/□□□□□w□4 □□□ L-□□□□□w□3.7 □/□ NaHCO3□w□1.0 □□□□□□□□Cytion □□ 820300a□□

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

Supplements

□□□□□□□ 10% FBS

Dissociation reagent	Accutase

Subculturing

□□□□□□□□□□□□□□□□□□□□□ PBS □□□T25 □□□ 3-5 □□ PBS□T75 □□□ 5-10 □□□□□□ Accutase □□□□□□□T25 □□□ 1-2 □□□T75 □□□ 2.5 □□□□□□□□□□□□ 8-10 □□□□□□□□□□□□□ 10 □□□□□□□□□□□□□□□□□□□ 300xg □□ 3 □□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□

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

Storage conditions

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Shipping conditions

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

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DONOR

Donor age	胎儿 12-13 天
Ethnicity	不适用□小鼠细胞系）

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。这样做是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。

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是存活的。
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