# DU-145

300168

## GENERAL INFORMATION

### Description

DU145 is a human prostate cancer cell with an epithelial morphology commonly used in prostate cancer research. The cell line was established from the brain of a 69-year-old male with prostate cancer. They express androgen receptors and are considered tumorigenic with moderate metastatic potential, forming adenocarcinoma (grade II) consistent with prostatic primary when injected into nude mice.
In terms of karyotype, DU145 cells are hypotriploid and have several marker chromosomes, including t(11q12q), del(11)(q23), 16q+, del(9)(p11), del(1)(p32), among others. They express several isoenzymes, including AK-1, ES-D, G6PD, GLO-I, Me-2, PGM1, and PGM3. However, the cells do not express the prostate antigen.
DU145 cells are weakly positive for acid phosphatase and capable of forming colonies in soft agar. The presence of microvilli, tonofilaments, desmosomes, any mitochondria, well-developed Golgi, and heterogenous lysosomes was reported by ultrastructural analyses. DU145 cells have a doubling time of approximately 30-40 hours and are suitable transfection hosts.
DU145 cells are a valuable tool in the therapeutic research of prostate cancer. Along with PC3 and LNCaP cell lines, DU145 is a standard prostate cancer cell line used in medicinal research. Along with PC-3 cells, DU-145 cells express androgen receptor proteins. However, when treated with an androgen ligand, the cells did not show stimulation of the activity of an AR-responsive reporter gene. Therefore, these cells are considered to be androgen non-responsive.

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| **Tissue** | Prostate |
| **Disease** | Carcinoma |
| **Metastatic site** | Brain |

### Synonyms

- DU145
- Du-145
- DU 145
- DU_145
- DU.145
- Duke University 145

## CLASSIFICATION

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| **Organism** | Human |
| **Sex** | Male |
| **Growth properties** | Adherent |
| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Morphology** | Epithelial-like |
| **Tumourigenic** | Forms adenocarcinoma (grade II) consistent with prostatic primary |

### Karyotype

(P75) hypotriploid to tetraploid with abnormalities including breaks, dicentrics, minutes and large telocentric marker

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## IDENTIFIERS

### Citation

DU-145 (Cytion catalog number 300168)

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|---|---|
| **NCBI TaxID** | 9606 |
| **Cellosaurus** | CVCL_0105 |

## EXPRESSION AND SUSCEPTIBILITY

### Antigen expression

Blood Type O, Rh+

### Isoenzymes

Me-2, 1-2, PGM3, 2, PGM1, 1, ES-D, 1, AK-1, 1, G6PD, B, GLO-1, 2, Phenotype Frequency Product: 0.0041

## HANDLING AND CULTURE

### Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

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| **Incubation atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

### Supplements

Supplement the medium with 10% FBS and 1% NEAA

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| **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.

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| **Seeding density** | 2 x $10^4$ cells/$cm^2$ will yield in a confluent layer in about 4 days |
| **Fluid renewal** | 2 to 3 times per week |
| **Post-thaw recovery** | After thawing, allow the cells to recover from the freezing process for at least 24 hours. |

### 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

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.

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| **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. |

### 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.

### 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.

## DONOR

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| **Donor age** | 69 years |

## LEGAL AND SAFETY

### Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

### Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

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| **Material Transfer Agreement required** | Yes |

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