**Product sheet**

# DU-145 Cells | 300168

## General information

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| **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.<br><br>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.<br><br>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.<br><br>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. |
| **Organism** | Human |
| **Tissue** | Prostate |
| **Disease** | Carcinoma |
| **Metastatic site** | Brain |
| **Synonyms** | DU145, Du-145, DU 145, DU_145, DU.145, Duke University 145 |

## Characteristics

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| **Age** | 69 years |
| **Gender** | Male |
| **Morphology** | Epithelial-like |
| **Growth properties** | Adherent |

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## Regulatory Data

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| **Citation** | DU-145 (Cytion catalog number 300168) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_0105 |

## Biomolecular Data

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| **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 |
| **Tumorigenic** | Forms adenocarcinoma (grade II) consistent with prostatic primary |
| **Karyotype** | (P75) hypotriploid to tetraploid with abnormalities including breaks, dicentrics, minutes and large telocentric marker |

## Handling

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| **Culture Medium** | EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a) |
| **Supplements** | Supplement the medium with 10% FBS and 1% NEAA |
| **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. |
| **Seeding density** | 2 x $10^4$ cells/$cm^2$ will yield in a confluent layer in about 4 days |

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| **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. |
| **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. |
| **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. |
| **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. |

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| **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. |