# Data Sheet



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| **BCRJ Code:** | 0223 |
| **Cell Line:** | SH-SY5Y |
| **Species:** | Homo sapiens |
| **Vulgar Name:** | Human |
| **Tissue:** | Neural |
| **Morphology:** | Epithelial |
| **Disease:** | Neuroblastoma |
| **Growth Properties:** | Mixed, Adherent And Suspension |
| **Sex:** | Female |
| **Age/Ethinicity:** | 4 Year / |
| **Derivation:** | was established in 1970 from a metastatic bone tumor. |
| **Applications:** | This cell line is suitable as a transfection host. |
| **DNA Profile:** | Amelogenin: X CSF1PO: 11 D13S317: 11 D16S539: 8,13 D5S818: 12 D7S820: 7,10 THO1: 7,10 TPOX: 8,11 vWA: 14,18 |
| **Biosafety:** | 1 |
| **Addtional Info:** | SH-SY5Y cells have a reported saturation density greater than 1 X 10e6 cells/cm2. They are reported to exhibit moderate levels of dopamine beta hydroxylase activity. [ PubMed: 29704] |
| **Culture Medium:** | 1:1 mixture of Dulbecco's modified Eagle's medium and F12 Medium containing 1% non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate and fetal bovine serum to a final concentration of 10%. |

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| **Subculturing:** | These cells grow as a mixture of floating and adherent cells. The cells grow as clusters of neuroblastic cells with multiple, short, fine cell processes (neurites). Cells will aggregate, form clumps and float. Remove the medium with the floating cells, and recover the cells by centrifugation. Rinse the adherent cells with PBS without calcium and magnesium, add an additional 1 to 2 mL of trypsin solution, and let the culture sit at room temperature (or at 37°C) until the cells detach. Add fresh medium, aspirate, combine with the floating cells recovered above and dispense into new flasks. NOTE: For more information on enzymatic dissociation and subculturing of cell lines consult Chapter 12 in Culture of Animal Cells, a manual of Basic Technique by R. Ian Freshney, 6th edition, published by Alan R. Liss, N.Y., 2010. |
| **Subculturing Medium Renewal:** | Every 4 to 7 days |
| **Subculturing Subcultivation Ratio:** | 1:20 to 1:50 is recommended |
| **Culture Conditions:** | Atmosphere: air, 95%; carbon dioxide (CO2), 5% Temperature: 37°C |
| **Cryopreservation:** | 95% FBS + 5% DMSO (Dimethyl sulfoxide) |

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| **Thawing Frozen Cells:** | SAFETY PRECAUTION: It is strongly recommended to always wear protective gloves, clothing, and a full-face mask when handling frozen vials. Some vials may leak when submerged in liquid nitrogen, allowing nitrogen to slowly enter the vial. Upon thawing, the conversion of liquid nitrogen back to its gas phase may cause the vial to explode or eject its cap with significant force, creating flying debris.<br>1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 minutes).<br>2. Remove the vial from the water bath as soon as its contents are thawed and decontaminate it by dipping in or spraying with 70% ethanol. From this point, all operations must be performed under strict aseptic conditions.<br>3. For cells sensitive to DMSO, it is recommended to remove the cryoprotective agent immediately. Transfer the vial contents to a centrifuge tube containing 9.0 mL of complete culture medium and centrifuge at approximately 125 × g for 5 to 7 minutes.<br>4. Discard the supernatant and resuspend the cell pellet in the recommended complete medium (see specific batch information for the appropriate dilution ratio).<br>5. Incubate the culture under appropriate atmospheric and temperature conditions (see "Culture Conditions" for this cell line).<br><br>NOTE: It is important to avoid excessive alkalinity of the medium during cell recovery. To minimize this risk, it is recommended to place the culture vessel containing the growth medium in the incubator for at least 15 minutes before adding the vial contents. This allows the medium to stabilize at its normal pH (7.0 to 7.6). |
| **References:** | 22554: Ross RA, et al. Coordinate morphological and biochemical interconversion of human neuroblastoma cells. J. Natl. Cancer Inst. 71: 741-749, 1983. PubMed: 6137586 23032: Biedler JL, et al. Multiple neurotransmitter synthesis by human neuroblastoma cel |
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| **Cellosaurus:** | CVCL_0019 |