# JHH-2

305768

## GENERAL INFORMATION

### Description

JHH-2 is a human hepatocellular carcinoma (HCC) cell line established from an ascites metastasis of a 56-year-old Japanese male patient. The line grows as an adherent monolayer with spindle-shaped cell morphology. JHH-2 harbors a TP53 p.His83Tyr heterozygous mutation affecting the transactivation domain of p53, which impairs wild-type p53 transcriptional activity and is associated with reduced apoptotic responses to DNA damage. This mutation, combined with the metastatic ascites origin of the line, makes JHH-2 a relevant model for studying advanced, metastatic HCC biology.
JHH-2 is applicable in hepatocellular carcinoma research, including studies of HCC cell invasion and migration, TP53 mutation-associated phenotypes, resistance to sorafenib and other targeted agents, and evaluation of novel therapeutic strategies against advanced HCC. The ascites origin suggests an aggressive, metastatic phenotype, making JHH-2 suitable for studies of HCC dissemination and the biology of liver cancer with acquired p53 dysfunction. It is also used as a xenograft model in immunocompromised hosts.
JHH-2 is maintained as an adherent culture in Williams' E medium supplemented with 10% FBS (originally 10%, subsequently 2% FCS after 5 years; alternative: MEM + 10% FBS). Cells are subcultured using 0.02% EDTA + 0.25% trypsin. Recommended seeding density is $1 \times 10^5$ cells/cm². Doubling time is approximately 33–150 hours depending on conditions.

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| **Tissue** | Metastatic |
| **Disease** | Adult hepatocellular carcinoma |
| **Metastatic site** | Ascites (metastatic) |

### Applications

Hepatocellular carcinoma research; HCC invasion and migration; TP53-mutant HCC biology; sorafenib resistance; advanced HCC modeling; xenograft studies; liver cancer drug evaluation

### Synonyms

- Jhh-2
- JHH2

## CLASSIFICATION

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| **Organism** | Human |
| **Sex** | Male |
| **Growth properties** | Adherent |
| **GMO status** | Non-GMO |

### GMO status details

No genetic modification; wildtype cell line

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| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Morphology** | Spindle-shaped |
| **Cell type** | Hepatocyte-like |
| **Doubling time** | 150 hours ; 60.12 hours ; 35-70 hours , ~2 days , ~33 hours , ~59 hours |

## IDENTIFIERS

### Citation

JHH-2 (Cytion catalog number 305768)

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| **NCBI TaxID** | 9606 |
| **Cellosaurus** | CVCL_2786 |

## EXPRESSION AND SUSCEPTIBILITY

### Mutational profile

Mutation: p.His83Tyr, Heterozygous

## HANDLING AND CULTURE

### Culture medium

Williams'E medium with 10% fetal calf serum originally and later 2% FCS is used for 5 years. (alternative MEM 90% + FBS 10%)

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

### Supplements

Supplement the medium with 10% FBS (or 2% FCS for long-term passage)

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| **Dissociation reagent** | 0.02% EDTA + 0.25% Trypsin |
| **Split ratio** | 1 to 3 |
| **Fluid renewal** | Every 2 to 3 days |

### 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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

## QUALITY CONTROL AND CRYOPRESERVATION

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| **Freeze medium** | As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability. |

### 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** | 56Y |
| **Ethnicity** | Japanese |

## 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 |

## PRODUCT DETAILS

### Composition table