Certificate of Analysis

Ensuring Integrity in Every Cell Line

Product	MHH-ES1	**Passage Number**	78
Human	Human	**Cell count per mL**	2.0 million
CytionTM Number	300136	**Volume per ampule**	1.5
Lot Number	300136-517	**Freeze Date**	15.06.2017
Product Format	cryovial	**Freeze medium**	Freeze medium containing FBS
Storage Conditions	Below -150°C	**Expiration Date**	Not applicable
Identity match	100%		

At Cytion, we ensure the quality and reliability of our cell lines through in-house and third-party testing, including:

1. STR Profiling: To authenticate cell line identity.
2. Virus Testing: For species-specific viruses where possible.
3. Mycoplasma Testing: To prevent contamination.
4. Interspecies Contamination Testing: To ensure purity.
5. Bacteria and Fungi Testing: To ensure cells are free from microbial contaminants.

TEST OVERVIEW

Test	Methodology	Acceptance Criteria	Outcome
Post-Freeze Viability	Viability assessment using Vi-CELL BLU by Beckman Coulter (analyzing 100 images per sample, 200 µl cell suspension per test)	> 70% post-thaw cell viability	> 80% post-thaw viability
Recovery	Culture in the appropriate growth medium, microscopic evaluation	> 80% confluence within the expected recovery period	A T25 culture flask seeded at a density of 5 x 10^4 viable cells per cm^2 typically reaches approximately 85% confluence within 2-3 days.
Growth Properties	Observation of cell culture behaviour to determine if cells are adherent, suspension, or semi-adherent	Cells exhibit expected growth properties consistent with the cell line's characteristics	Adherent
Sterility Testing	Direct inoculation on 8 media, 10-day incubation; microbial ID by MALDI-TOF MS – anaerobic culture	No aerobic microbial growth (anaerobic if test was performed)	Sterility confirmed
Mycoplasma Testing	PCR-based detection assay with specific primers targeting Mycoplasma DNA	No detectable Mycoplasma contamination confirmed by PCR	Pass

AUTHENTICATION — INTERSPECIES CONTAMINATION TESTING

Species	Status
Mouse	-
Rat	-
Human	+
Chinese hamster	-
African green monkey	-

AUTHENTICATION — STR PROFILING

Marker	Alleles
AMEL	X
CSF1PO	11
D13S317	8
D16S539	11
D18S51	14, 16
D21S11	28, 32.2
D3S1358	15, 16
D5S818	13
D7S820	9, 11
D8S1179	11, 13
FGA	22
Penta_D	11, 12
Penta_E	11, 15
TH01	8, 9
TPOX	8
vWA	16, 17
Identity match	100%

SPECIES-SPECIFIC PATHOGEN TESTING

Pathogen	Result
Hepatitis A	-
Hepatitis B	-
Hepatitis C	-
HIV1	-
HIV2	-
HTLV 1	-
HTLV 2	-
Mycoplasma sp.	-
Bacterial growth	-
Fungal growth	-

Third-Party Certified Quality Assurance

Since 2023, IDEXX has conducted STR profiling, species-specific pathogen testing, and species contamination analysis to ensure the authenticity, purity, and safety of our cell lines.

The information provided is believed to be accurate, but both the information and product are offered without warranty for any applications beyond those specified. This certificate confirms that the material has been tested and is pure to the best of our knowledge.

This product is intended solely for laboratory research use and is not for use in humans, animals, or diagnostics. Proper Biosafety Level practices are required.

Cytion products may not be resold, modified for resale, or used commercially without prior written consent from Cytion.

Manufactured in Germany under our ISO 9001:2015 certified Quality Management System, ensuring high standards of quality and reliability.

Qualified personnel have validated the test results of this Certificate of Analysis and attest with their signature that the tests were conducted as reflected in the results presented here.

Dr. Rosemarie Steubing 16.10.2026

Authorised signature & date

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