# TMD8

305729

## GENERAL INFORMATION

### Description

The TMD8 cell line is a human diffuse large B-cell lymphoma (DLBCL) model representative of the activated B-cell-like (ABC) subtype. This subtype is characterized by constitutive activation of the NF-κB pathway, which is essential for cell survival. TMD8 exhibits wild-type CARD11, yet maintains strong NF-κB activity, indicating a dependency on chronic active B-cell receptor (BCR) signaling. This dependency is supported by experimental evidence showing that knockdown of BCR pathway components—including BTK, CD79A, CD79B, and IgM—leads to cell death in TMD8 cells. Additionally, TMD8 harbors a Y196H mutation in the ITAM domain of CD79B, a mutation commonly found in ABC-DLBCLs that enhances surface BCR expression and attenuates negative feedback from Lyn kinase, thus promoting sustained signaling activity.
TMD8 cells also demonstrate notable sensitivity to BCL-2 inhibition via venetoclax when expressing high levels of the BCL-2 protein. However, resistance to venetoclax in such cells can be mediated by activation of the PI3K/AKT pathway, particularly following prolonged drug exposure. This resistance mechanism involves a reduction in PTEN expression and increased AKT phosphorylation. TMD8 cells with acquired resistance to venetoclax exhibit heightened susceptibility to pharmacological PI3K/AKT pathway inhibition, making them a suitable model for studying therapeutic combinations aimed at overcoming resistance in aggressive B-cell lymphomas.

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| **Tissue** | Bone marrow |
| **Disease** | Diffuse large B-cell lymphoma activated B-cell type |

### Synonyms

- TMD-8
- Tokyo Medical and Dental university 8

## CLASSIFICATION

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

## CHARACTERISTICS

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| **Doubling time** | ~30 hours |

## IDENTIFIERS

### Citation

TMD8 (Cytion catalog number 305729)

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|---|---|
| **NCBI TaxID** | 9606 |
| **Cellosaurus** | CVCL_A442 |

## EXPRESSION AND SUSCEPTIBILITY

### Mutational profile

Mutation: CD79B, Simple, p.Tyr196His (c.586T>C), Heterozygous, M yearsD88, Simple, p.Leu252Pro (c.755T>C) (L265P), Heterozygous

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## HANDLING AND CULTURE

### Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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

### Supplements

Supplement the medium with 10% FBS

### 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** | 62 years |
| **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.

**Disclaimer**

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

**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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