

293T

293T (or HEK 293T) is a human cell line, derived from the HEK 293 cell line, that expresses a mutant version of the SV40 large T antigen. It is very commonly used in biology for protein expression and production of recombinant retroviruses.

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Origin

293T was created in Michele Calos's lab at Stanford by stable transfection of the HEK 293 cell line with a plasmid encoding a temperature-sensitive mutant of the SV40 large T antigen; it was originally referred to as 293/tsA1609neo.^[1] The first reference to the cell line as "293T" may be its use to create the BOSC23 packaging cell line for producing retroviral particles.^[2]

Characteristics

The transfection used to create 293T (involving plasmid pRSV-1609) conferred neomycin/G418 resistance and expression of the tsA1609 allele of SV40 large T antigen; this allele is fully active at 33 °C (its permissive temperature), has substantial function at 37 °C, and is inactive at 40 °C.^[3] 293T is very efficiently transfectable with DNA (like its parent HEK 293). Due to the expression of SV40 large T antigen, transfected plasmid DNAs that carry the SV40 origin of replication can replicate in 293T and will transiently maintain a high copy number; this can greatly increase the amount of recombinant protein or retrovirus that can be produced from the cells.

Genome

The full genome sequences of three different isolates of 293T have been determined. They are quite similar to each other but show detectable divergence from the parental HEK 293 cell line.^[4]

References

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External links

- ATCC entry for 293T (<https://www.atcc.org/Products/All/CRL-3216.aspx>)
 - Cellosaurus entry for 293T (https://web.expasy.org/cellosaurus/CVCL_0063)
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