SANTA CRUZ BIOTECHNOLOGY, INC.

# TYW1 siRNA (m): sc-106652

## BACKGROUND

Wybutosine, a derivative of wyosine, is a tricyclic hypermodified guanosine found in eukaryotic and archaeal tRNAs. TYW1 (tRNA-yW synthesizing protein 1), also known as TYW1A, RSAFD1 or YPL207W, is a 732 amino acid protein containing one flavodoxin-like domain that participates in the wybutosine-tRNA(Phe) biosynthesis pathway. Involved in tRNA modification, TYW1 is the human homolog of a yeast gene essential for yW synthesis. TYW1 is involved in a multistep enzymatic reaction that stabilizes codon-anticodon base-pairing during the ribosomal decoding process, thereby ensuring correct translation. TYW1 binds to one 4Fe-4S cluster and exists as two alternatively spliced isoforms. The gene encoding TYW1 is located on human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

## REFERENCES


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## CHROMOSOMAL LOCATION

Genetic locus: Tyw1 (mouse) mapping to 5 G1.3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## PRODUCT

TYW1 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TYW1 shRNA Plasmid (m): sc-106652-SH and TYW1 shRNA (m) Lentiviral Particles: sc-106652-V as alternate gene silencing products.

For independent verification of TYW1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106652A, sc-106652B and sc-106652C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

TYW1 siRNA (m) is recommended for the inhibition of TYW1 expression in mouse cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TYW1 gene expression knockdown using RT-PCR Primer: TYW1 (m)-PR: sc-106652-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.