Myotonic Dystrophy FOUNDATION

Zebrafish – Myotonic Dystrophy Animal Models & Tools

Animal models play a key role in basic, translational and clinical research. The following tables highlight and summarize available animal models and tools for myotonic dystrophy research. Literature links connect to the original publication.

This table summarizes available **zebrafish (Danio rerio)** animal models used in myotonic dystrophy (DM) research. Zebrafish are easy to genetically manipulate, highly prolific, and inexpensive to maintain in large numbers. Due to their embryonic transparency and external development, the use of zebrafish permits live visualization of developmental processes and cellular interactions without physiological disruption of tissues and organs. This table also contains interesting review articles about this model system. This table was last updated and reviewed in June 2024.

To find additional animal models or learn more about each respective system, please examine and follow the associated literature links and references within each table.

To find additional information and resources focused on myotonic dystrophy, visit the Myotonic Dystrophy Foundation website at: www.myotonic.org.

Zebrafish Models - Myotonic Dystrophy Animal Models & Tools

Zebarfish Model	Article Type
Hinman MN, Richardson JI, Sockol RA, Aronson ED, Stednitz SJ, Murray KN, Berglund JA, Guillemin K. Zebrafish mbnl mutants model physical and molecular phenotypes of myotonic dystrophy. Dis Model Mech. 2021 Jun 1;14(6): dmm045773. doi: 10.1242/dmm.045773. Epub 2021 Jun 14. PMID: 34125183	Review
Todd PK, Ackall FY, Hur J, Sharma K, Paulson HL, Dowling JJ. Transcriptional changes and developmental abnormalities in a zebrafish model of myotonic dystrophy type 1. Dis Model Mech. 2014 Jan;7(1):143-55. doi: 10.1242/dmm.012427. Epub 2013 Oct 2. PMID: 24092878; PMCID: PMC3882056.	
Plantié E, Migocka-Patrzałek M, Daczewska M, Jagla K. Model organisms in the fight against muscular dystrophy: lessons from drosophila and Zebrafish. Molecules. 2015 Apr 9;20(4):6237-53. doi: 10.3390/molecules20046237. PMID: 25859781; PMCID: PMC6272363.	Review
Lloyd TE, Taylor JP. Flightless flies: Drosophila models of neuromuscular disease. Ann N Y Acad Sci. 2010 Jan;1184:e1-20. doi: 10.1111/j.1749-6632.2010.05432.x. PMID: 20329357; PMCID: PMC3062507.	Review
deLorimier E, Coonrod LA, Copperman J, Taber A, Reister EE, Sharma K, Todd PK, Guenza MG, Berglund JA. Modifications to toxic CUG RNAs induce structural stability, rescue mis-splicing in a myotonic dystrophy cell model and reduce toxicity in a myotonic dystrophy zebrafish model. Nucleic Acids Res. 2014 Nov 10;42(20):12768-78. doi: 10.1093/nar/gku941. Epub 2014 Oct 10. PMID: 25303993; PMCID: PMC4227782.	