

## C. Elegans – 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 **Caenorhabditis elegans** (“**C. elegans**”) animal models used in myotonic dystrophy (DM) research. *C. elegans* is a eukaryotic, multi-organ, transparent nematode that lives in the interstitial water of soil and survives by feeding on microbes. *C. elegans* is a useful model organism as it shares genetic conservation with humans, has a short development cycle, and reproduces quickly. The nematode is also transparent, so scientists can track proteins and other molecules in the living organism. The 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](http://www.myotonic.org).

### C. Elegans Model

Verbeeren J, Teixeira J, Garcia SMDA. The Muscleblind-like protein MBL-1 regulates microRNA expression in *Caenorhabditis elegans* through an evolutionarily conserved autoregulatory mechanism. *PLoS Genet.* 2023 Dec 22;19(12):e1011109. doi: 10.1371/journal.pgen.1011109. PMID: 38134228; PMCID: PMC10773944.

Qawasmi L, Braun M, Guberman I, Cohen E, Naddaf L, Mellul A, Matilainen O, Roitenberg N, Share D, Stupp D, Chahine H, Cohen E, Garcia SMDA, Tabach Y. Expanded CUG Repeats Trigger Disease Phenotype and Expression Changes through the RNAi Machinery in *C. elegans*. *J Mol Biol.* 2019 Apr 19;431(9):1711-1728. doi: 10.1016/j.jmb.2019.03.003. Epub 2019 Mar 14. PMID: 30878478.

Spilker, K.A., Wang, G.J., Tugizova, M.S. et al. *Caenorhabditis elegans* Muscleblind homolog *mbl-1* functions in neurons to regulate synapse formation. *Neural Dev* 7, 7 (2012). <https://doi.org/10.1186/1749-8104-7-7>