Applications of Caenorhabditis Elegans Worm in Medical Research

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Abstract:

The free living nematode *Caenorhabditis elegans* represent one of the best investigated model organisms in modern biological research. Among the numerous advantages, the worm is inexpensive to cultivate, its genome is completely sequenced and a broad range of molecular and genetic tools are available. The worm has a short lifespan where it progresses from eggs via four larval stages to fertile adults in three days allowing rapid experimentation. Although *C. elegans* is a relative simple multicellular organism, it contains a variety of tissues like a nervous system, muscles and intestine, which make it a suitable system for various fundamental studies. The worm is transparent at every stage of their life cycle that makes it easy to analyse expression patterns of proteins within the worms by using markers such as green fluorescent protein. RNA interference which allows the investigation of gene function by specific suppression of proteins is feasible with these organisms. There are several applications to the usage of *C. elegans* in medical research. Accordingly, the worm is an established model to study diseases such as parkinson's, obesity, muscular dystrophy or biological processes such as aging. *C. elegans* is also useful for drug screening such as antihelminthics. The paper will discuss the identification of the first metazoan polyamine transporter which is of potential pharmacological importance.

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