

Crystal Structure of *Caenorhabditis elegans* Spermidine Synthase: in Preparation

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Caenorhabditis elegans (*C.elegans*) is a free living worm and a well established model organism to study general biological processes like development.

Consistent with reports on other organisms, growth of *C. Elegans* depends on polyamines. Polyamines such as putrescine, spermidine and spermine are aliphatic polycations, essential for regulation of cell proliferation and differentiation. Spermidine synthase is one of the key enzymes in the polyamine biosynthetic pathway.

This enzyme catalyzes the transfer of the aminopropyl group from decarboxylated S-adenosylmethionine to putrescine in the biosynthesis of spermidine.

Spermidine synthase from *C. Elegans* has been over-expressed in *Escherichia coli*, purified by affinity chromatography and co-crystallized with putrescine, which is the substrate. The crystals diffract to 2.5 Å and belong to the monoclinic P21 space group with unit cell dimensions, a=59.99, b=99.23, c=67.85 and $\beta=107.2^\circ$. The asymmetric unit contains two molecules. Model building and refinement are ongoing.

Keywords: *caenorhabditis elegans*, polyamines, spermidine synthase