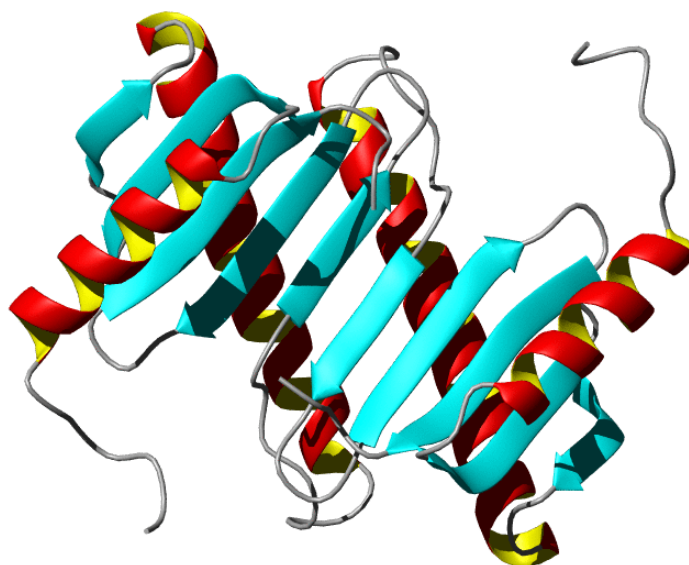


# Center for Eukaryotic Structural Genomics

## Protein Structure Data Summary

<b>Target ID</b>	GO.34382	
<b>Source Organism</b>	<i>Mus musculus</i>	
<b>Gene Designator</b>	BC029172	
<b>PDB Entry</b>	1Y4O	Deposition: 01-Dec-2004
<b>BMRB Entry</b>	6396	Deposition: 18-Jan-2005
<b>Function</b>	cytoplasmic dynein light chain	
<b>Produced From</b>	Cell-free (wheat germ extract)	
<b>Structure by NMR</b>	Restraints/Residue: 18.5	Subunits/Molecule: 2
	No. of Residues: 96	Molecular Weight: 21.0 kDa
	Backbone RMSD(17-92): 0.69 Å	All Heavy Atoms RMSD(17-92): 1.09 Å
<b>Data Collected At</b>	Nuclear Magnetic Resonance Facility at Madison (NMRFAM)	
<b>Authors</b>	Song, J., Tyler, R.C., Lee, M.S., Tyler, E.M., Markley, J.L.	



### Structural Features

Roadblock/LC7 is a member of a class of dynein light chains involved in regulating the function of the dynein complex. We have determined the three-dimensional structure of isoform 1 of the mouse Roadblock/LC7 cytoplasmic dynein light chain (robl1\_mouse) by NMR spectroscopy. In contrast to a previously reported NMR structure of the human homolog with 96% sequence identity (PDB 1TGQ), which showed the protein as a monomer, our results indicate clearly that robl1 exists as a symmetric homodimer. The two beta3-strands pair with each other and form a continuous ten-stranded beta-sheet. The 25-residue alpha2-helix from one subunit packs antiparallel to that of the other subunit on the face of the beta-sheet. Zipper-like hydrophobic contacts between the two helices serve to stabilize the dimer.

*References:* (1) Song, J., Tyler, R.C., Lee, M.S., Tyler, E.M., Markley, J.L. (2005) Solution structure of isoform 1 of Roadblock/LC7, a light chain in the dynein complex. *J Mol Biol* 354(5):1043-51.

<b>Percent Identity with Nearest PDB Structure at Time Solved</b>	14% coverage 1vmg
<b>Pfam Cluster</b>	N/A
<b>Sequence Family Size</b>	145

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