

A

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human MAASEAAAAAGSAAALAAGARAVPAATTGAAAAASGPWVPPGPRLRGSRPRPAGATQQPAV
fly -----MHSEK
      :.

human PAPPAGELIQPSVSELSRAVRTNILCTVRGCGKILPNSPALNMHLVKSHRLQDGI VNP TI
fly HTPDIRELMPVREHRCERCP-----SLVFGNLSHYQLHLRRR--QEVIPPSVI
      :*  ** : . . * . . : : * . : : * : * * : * . *

human RKDLKTGPKFYCCPIEGCPRGPERPFSQFSLVKQHFMMKHAEEKKHKCSKCSNSYGTWDL
fly GPIVAFHCPVEKCIYHVATG-ARSFTSLRLLRQHYQKSHLDENYKCLACGGKFLQHHL
      : . * . . . : * * . : : * : * * : * : * * * . . : : . *

human KRHAEDCGKTFRCCTGCPYASRTALQSHIYRTGHEIPAHRDPPSKRRKMENCAQNOKLS
fly EKH--QCSKHKCPVCELTYNKAGLRTHMRRKNHLVHVESDKVIP-----S
      : : * : * . * . * * : : . * : : * : * : * . *

human NKTIESLNNQPIPRPDTQELEAISEIKLEPSFEDSCGSNTDKQTLTPPRYPQKLLLPKP
fly LATWKRLNPQPIP-----
      * : ** *****

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B

human	<i>Drosophila</i>
1-SVHTQTTF	1-DMETQTE
2-SRETQTS	2-DIETQTP
3-DNQTQTI	3-HMYTQTC
4-NIQTQTE	4-HIQTQTH
5-DIETQTD	5-TQHTQTC
6-MFDTQTQ	6-STCTQTR
7-DTQTQTD	
8-DIETQTE	
9-STETQTM	
10-SNETQTA	
11-SVETQTS	

Figure S1 Comparison of human ASCIZ and dASCIZ. (A) Alignment of the N-terminal regions of human ASCIZ and dASCIZ. *, identical residues; :, highly conserved residues; ., conserved residues. (B) Compilation of TQT motifs in human ASCIZ (left) and dASCIZ (right) arranged from top to bottom in their N- to C-terminal order (compare Fig. 1A).

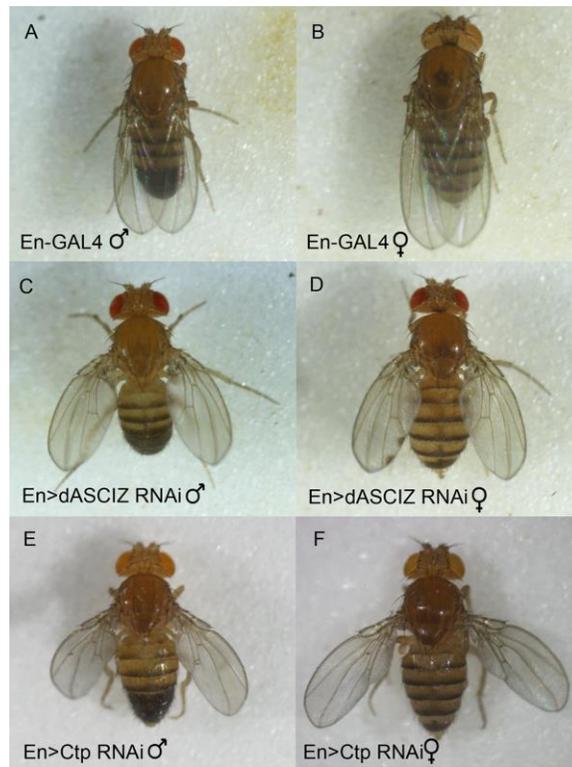


Figure S2 Developmental phenotypes caused by dASCIZ and Ctp knockdown in the posterior wing compartment.

(A, B) Control En-GAL4 expression in (A) male and (B) female. (C, D) En>dASCIZ RNAi in (C) male and (D) female. (E, F) En>Ctp RNAi in (E) male and (F) female.

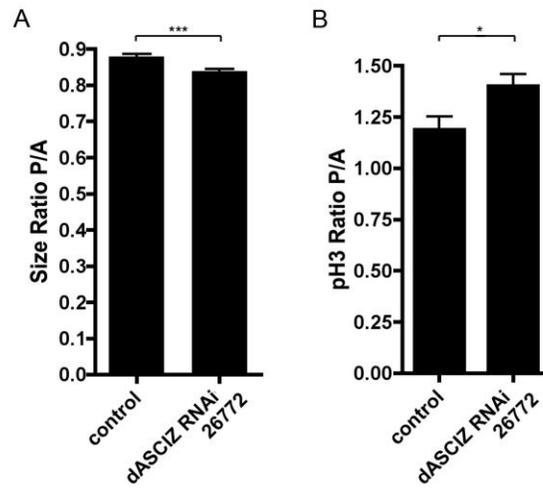


Figure S3 Expression of alternate non-overlapping dASCIZ RNAi 26772 results in similar phenotypes to the main dASCIZ RNA line. (A) Ratio of the posterior wing compartment to the anterior compartment as defined in Fig. 2(F) is reduced in wings expressing UAS-dASCIZ RNAi 26772 in the PC, compared to control ($p=0.0004$). Error bars represent SEM for $n>9$. (B) The average PC/AC ratio of mitotic cells is increased in third instar imaginal wing discs expressing UAS-dASCIZ RNAi 26772 in the posterior compartment ($p=0.0246$). Error bars represent SEM for $n>10$.

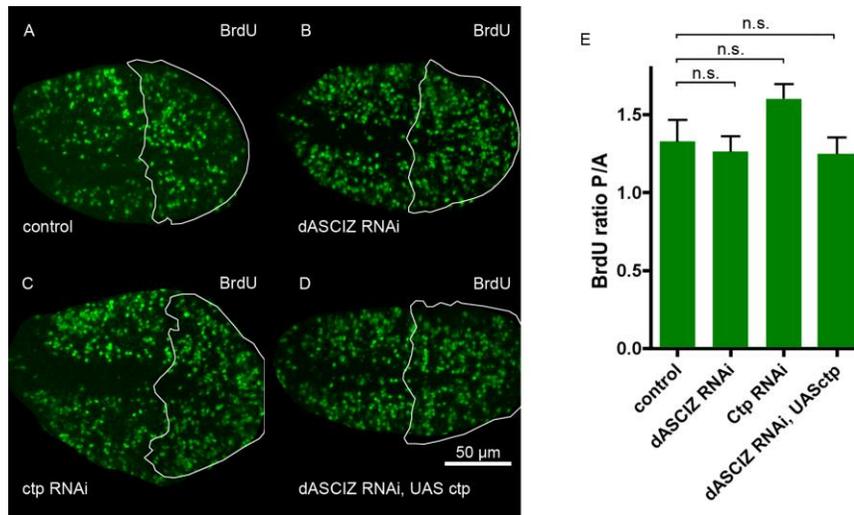


Figure S4 Detection of cycling cells with BrdU labeling. (A-D) S phase in wing imaginal discs detected with 30 minute BrdU pulse, En-GAL4 expression in PC is outlined in white. (A) En>GAL4/+ control. (B) En>dASCIZ RNAi. (C) En>Ctp RNAi. (D) En>dASCIZ RNAi with UAS-Ctp overexpression. (E) PC/AC ratio of BrdU-positive cells. Ratio is unchanged for dASCIZ RNAi ($p=0.6854$), Ctp RNAi ($p=0.1187$) or dASCIZ RNAi, UAS Ctp ($p=0.6180$).

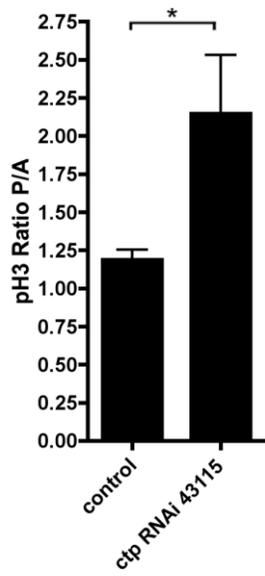


Figure S5 Expression of alternate Ctp RNAi v43115 results in elevated mitotic index. The average PC/AC ratio of mitotic cells is increased in third instar imaginal wing discs expressing UAS-Ctp RNAi v43115 in the posterior compartment ($p=0.0223$). Error bars represent SEM for $n>10$.

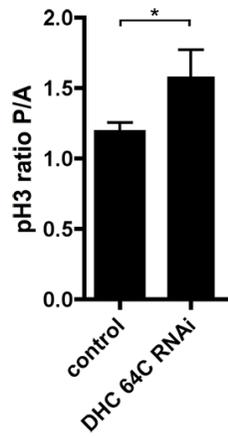


Figure S6 Expression of dynein heavy chain RNAi results in increased mitotic index. The average PC/AC ratio of mitotic cells is increased in third instar imaginal wing discs expressing DHC 61B RNAi in the posterior compartment ($p=0.0229$) Error bars represent SEM for $n>4$

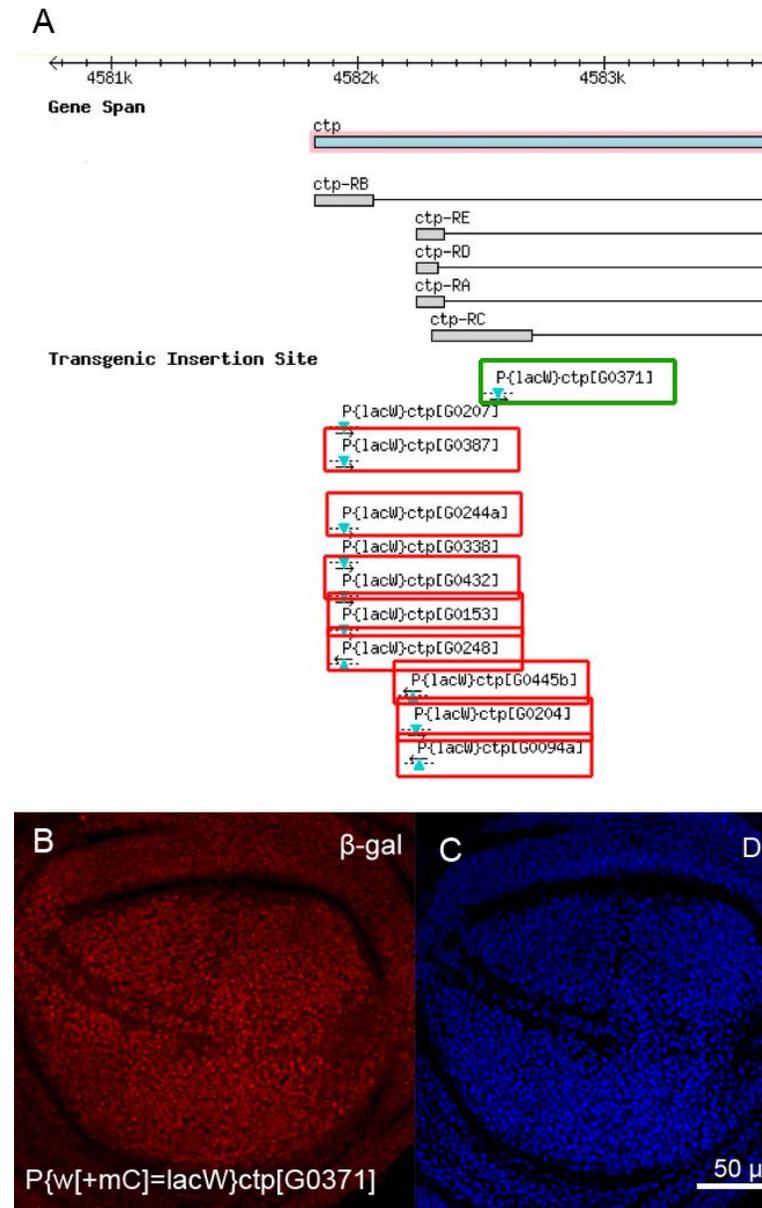


Figure S7 P-element lacZ insertions mapped to the Ctp promoter region. (A) Region spanning promoter of Ctp gene (blue), with transcript variants RA-RE shown in grey and sites of P-element mediated lacZ insertions represented by blue triangles. Green highlights the lacZ insertion found to have the strongest and most even expression in larval wing imaginal discs. Red highlights lacZ insertions found to have little/no detectable response (data not shown). (Flybase, GBrowse view) (B, C) Ctp-lacZ expression detected with β -gal antibody staining, showing ubiquitous Ctp promoter activity throughout the wing disc.

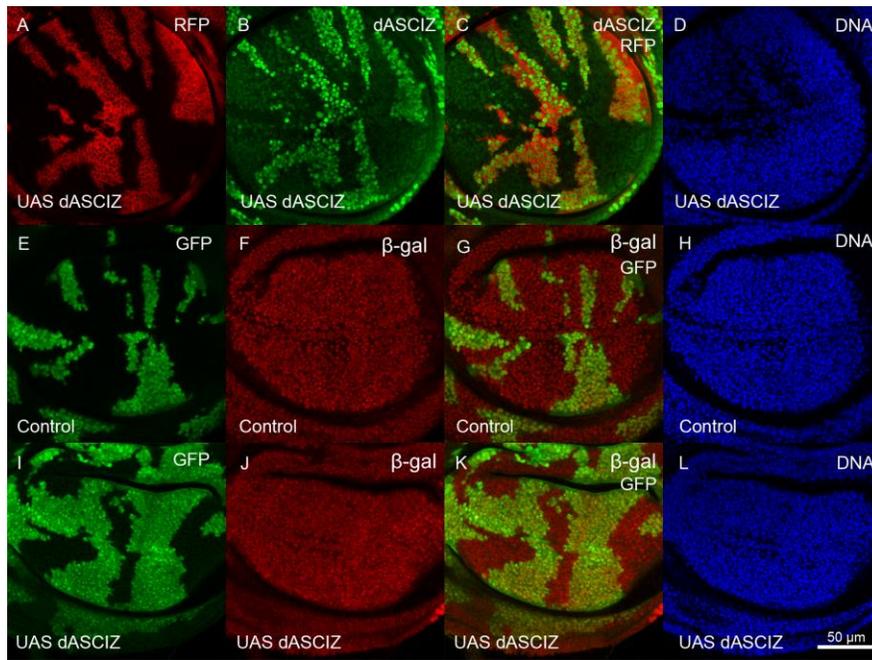


Figure S8 dASCIZ overexpression does not alter Ctp promoter activity. (A-D) dASCIZ antibody staining in Actin-GAL4 UAS-dASCIZ “flip-out” clones positively marked with UAS-RFP, 3 days after clone induction. (E-H) Control GFP-marked clones induced in the Ctp-lacZ background, stained with β-gal antibody to detect Ctp promoter activity. (I-L) GFP-marked clones expressing UAS-dASCIZ, stained with β-gal antibody.