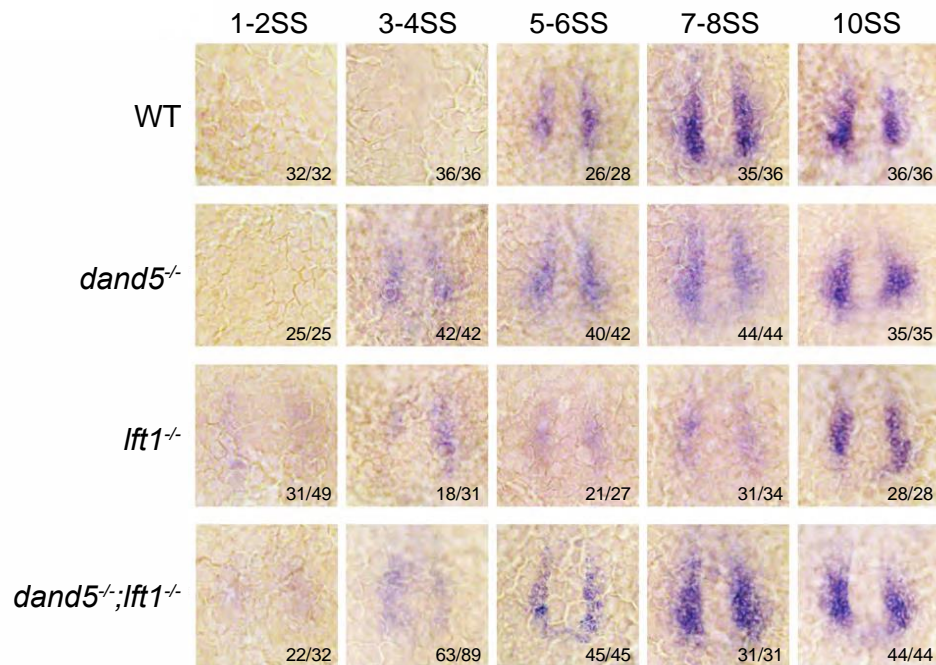


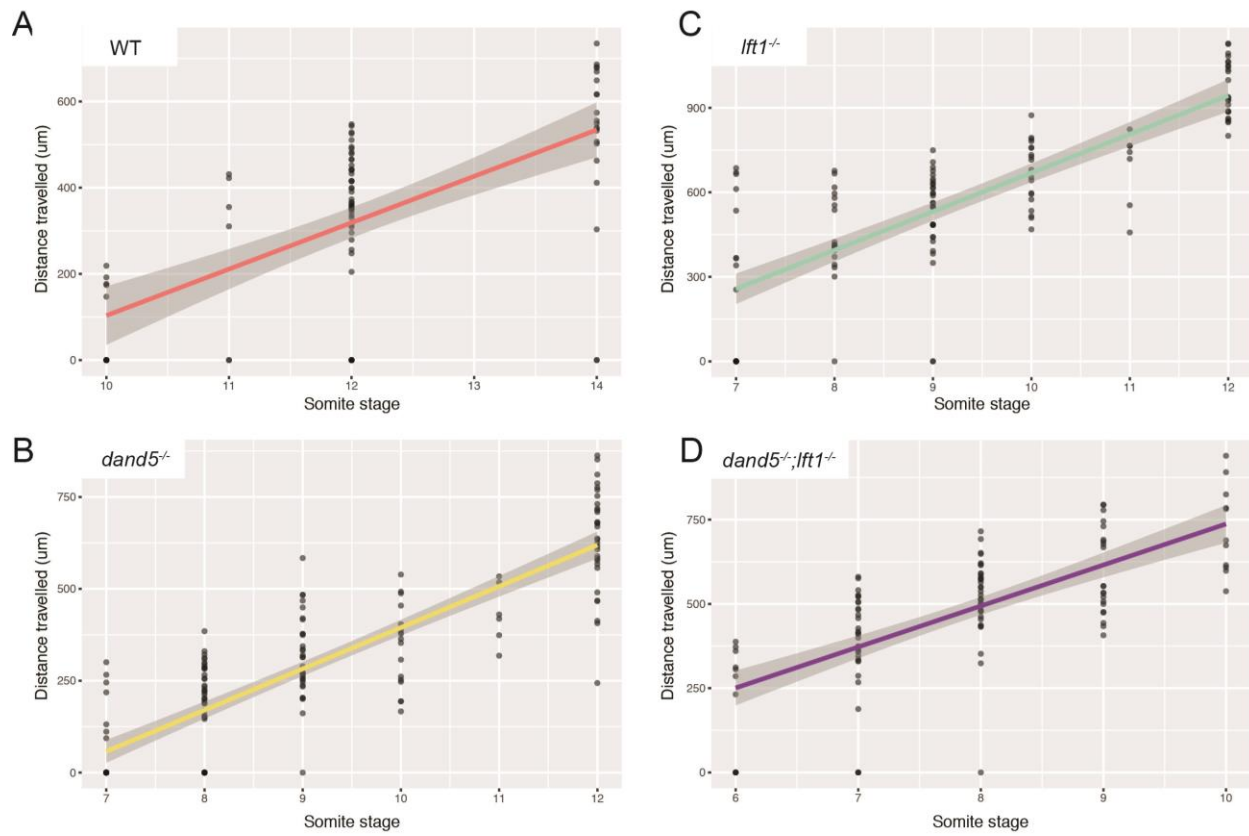
WT <i>dand5</i>	MTFQVGFFVLLSVTTIGAFPRNAFQR EFHRHVAKDFESSGNGPDEPVRGSRIVKLNPHF LRRAAVSHVPRNSPSRGAFPALAL GRPGPAILTHSKPAPQVSSSADRRKQGLEMWKKV VHKSERKKEAVALRINPKDMNKQSCA AVPFTQRITTEGCETVTVHNNLCYGQCSSMFVPS SGGSHGQQKAQCTRCGPSRARSVLLH LRCGSEVRERRVLIVEECKCETSSEEAKVQNTDM FNL*
sgRNA target	GGACCAGACGAACCTGTTTCG GGG
<i>dand5</i> <sup>a204</sup> (4 bp del)	MTFQVGFFVLLSVTTIGAFPRNAFQR EFHRHVAKDFESSGNGPDEPGDLSELSN*
WT <i>spaw</i>	MQPVIACASFALFVLRVDCVWIDKN GAFIKDHRTAFFGAYSSQFYPRYPLYMMQLYRDF SGNKMLTTPASVDN PALHQSDVFLSL IAQDCHQTEERWTVSFDMSSLSASDNIQLSELRI RLPAFSASRRVTVDIFHQHKQHCASD SVFCRNKKLFLGSVKSVDVSQSSSSWRVFNITEL LQQWLIQGMDTPDRVTAPDYDQSGS GSGDDFIESLTSSWPRKIQHPTAERVMIVVFYKE TVTHSASSLMNTVAQSKYVTLNRPAD GTQGRRHKRNRVERMRMTDDRNVTKPTPSEEQQ ASLCRRVDMWVDFDQIGWDEWIVHPK RYNAYRCEGECPSPLDETYNPTNHAYMQSLLKLY QPERVSCPCVPLRLSSLSMLYYEGD GVVMRHHEMIVEECGCH*
sgRNA targets	GTACCTTGGATAAAACTGGC TGG and AGTTATACAGAGACTTCAGC GGG
<i>spaw</i> <sup>a205</sup> (49 bp del)	MQPVIACASFALFVLRVDCVWIDKN GAFIKDHRTAFFGAYSSQAGIRC*

**Table S1.**

A) A 4 bp deletion in the first exon of *dand5* (*dand5*<sup>a204</sup>) caused a frameshift in the protein, truncating it from 243 amino acids to 54 amino acids. B) A 49 bp deletion in the first exon of *spaw* (*spaw*<sup>a205</sup>) truncated the protein from 404 amino acids to 49 amino acids.



**Fig. S1.** Expression of *spaw* around Kupffer's vesicle in WT, *dand5*, *lefty1* and *dand5*;*lefty1* mutants from 1-2 somite stage (SS) to 10SS.



**Fig. S2. Scatterplots of *spaw* progression in the LPM in WT, *dand5*, *lefty1* and *dand5;lefty1* mutants.** Linear regression lines were fitted to the data from time points where expression had already initiated in the LPM. The slope of the graph represents the rate of *spaw* propagation. Grey shadow represents the 95% confidence interval.