

Supplementary fig.-1. Rnf152 protein

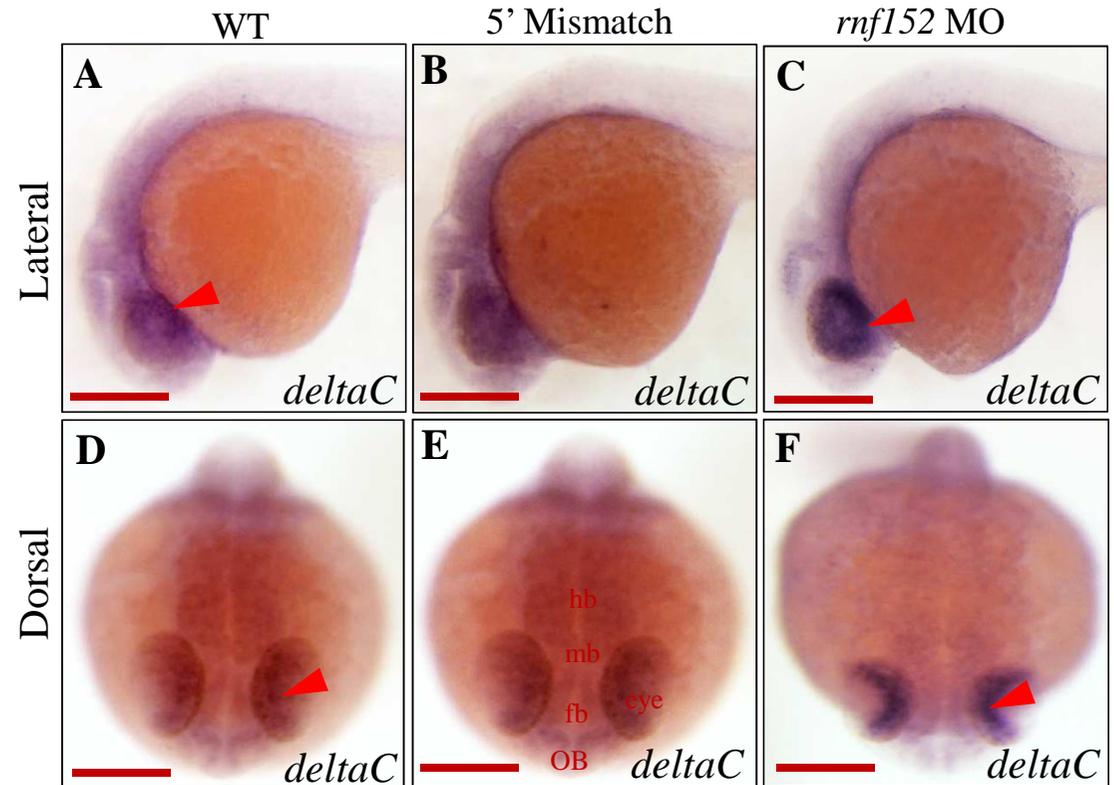
structure analysis through Uniprot. Zebrafish Rnf152 has 56% similarity with RNF152 from human, chimpanzee, mouse, *Xenopus*, and chicken. Analysis of amino acid sequence show that it has a RING-domain at the N-terminus and a transmembrane domain at the C-terminus. The red box indicates the RING-domain and green box denotes the transmembrane domain of Rnf152. Zebrafish Rnf152 is composed of 198 amino acids while homologues from the higher vertebrate are of 203 amino acids.

Human	1	METLSQD	SLL	LECQICFNY	YSPRRR	PKLLDCKHTCCSVCL	QOMRT	SQKDVRC	PWCRG	VTKL	60
chimpanzee	1	METLSQD	SLL	LECQICFNY	YSPRRR	PKLLDCKHTCCSVCL	QOMRT	SQKDVRC	PWCRG	VTKL	60
Mouse	1	METLSQD	SLL	LECQICFNY	YSPRRR	PKLLDCKHTCCSVCL	QOMRT	SQKDVRC	PWCRG	GITKL	60
Chicken	1	METLSQD	SLL	LECQICFNY	YSPRRR	PKLLDCKHTCCSVCL	QOMRT	SQKDLRC	PWCRG	GITKL	60
Xenopus	1	METLSQD	SLL	ECQICFNY	YSPRRR	PKLLDCKHTCCSVCL	QOMRT	SQKDLRC	PWCRG	VTKL	60
Zebrafish	1	MDSL	SQSSRL	ECQICFNY	FSQRR	LPKLLHCOHTCCSVCL	SQMRL	SQREIR	CPWCR	VTQI	60
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Human	61	PPGFSVS	QLPDDPE	VLAVIAI	PHTSEH	TPVFIKLP	SNGCYML	PLPISK	ERALL	PGDMGCR	120
chimpanzee	61	PPGFSVS	QLPDDPE	VLAVIAI	PHTSEH	TPVFIKLP	SNGCYML	PLPISK	ERALL	PGDMGCR	120
Mouse	61	PPGFSVS	QLPDDPE	VLAVIAI	PHTSEH	TPVFIKLP	SNGCYML	PLPISK	ERTLL	PGDMGCR	120
Chicken	61	PPGYSVS	QLPDDPE	VIAVIAI	PHTSEH	TPVFIKLP	SNGCYML	PLPISK	ERALL	PGDIGCR	120
Xenopus	61	PPGYSVS	QLPDDP	VDVAVIAI	PHASEN	TPVFIKLP	SNGCYMW	PLPVSK	ERALL	PGDIGCR	120
Zebrafish	61	PIGLSV	SHLPDDPE	VL	SVISQS	SEHTPIFI	HLPNNGCYLL	PVSLD	TDGTPL	PGOPTCH	120
		* * ***	*****	:::**	::**	**::**	****	*: :::: : ***	*		
Human	121	LLPGSQQ	KSVTV	VTIPAE	QOPL	LOGGAPQ	EAVEEE	QDRRG	VVKSST	WSGVCTVILVACV	180
chimpanzee	121	LLPGSQQ	KSVTV	VTIPAE	QOPL	LOGGAPQ	EAVEEE	QDRRG	VVKSST	WSGVCTVILVACV	180
Mouse	121	LLPGSQQ	KSLTV	VTIPAE	QOPL	LOGGAP	EAVEEE	PD	RRGVVKSST	WSGVCTVILVACV	180
Chicken	121	LLPGSQQ	KSLAV	VTIPAE	QOPL	LOGGLPAE	AEGAE	PD	RRGVVKSST	WSGVCTVILVACV	180
Xenopus	121	LLPGNQQ	KPVTV	VTMPME	QHPL	HGNISQ	DIVEEE	H	RRGVVKSST	WSGVCTVILVACV	180
Zebrafish	121	VGPKSI	----	GVFDV	SDGQNH	VLGHDGL	-GDGME	EEVVV	VKTTAW	GVCTVLLVAFILI	175
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Human	181	FLLGIVL	HNMSCI	SKRFT	VISCG						203
chimpanzee	181	FLLGIVL	HNMSCI	SKRFT	VISCG						203
Mouse	181	FLLGIVL	HNMSCI	SKRFT	VISCG						203
Chicken	181	FLLGIVL	HNMSCI	SKRFT	VISCG						203
Xenopus	181	FLLGIVL	HNMSCI	SKRFT	VISCG						203
Zebrafish	176	FLLGIVL	HNMSCV	SKRFT	IISCG						198
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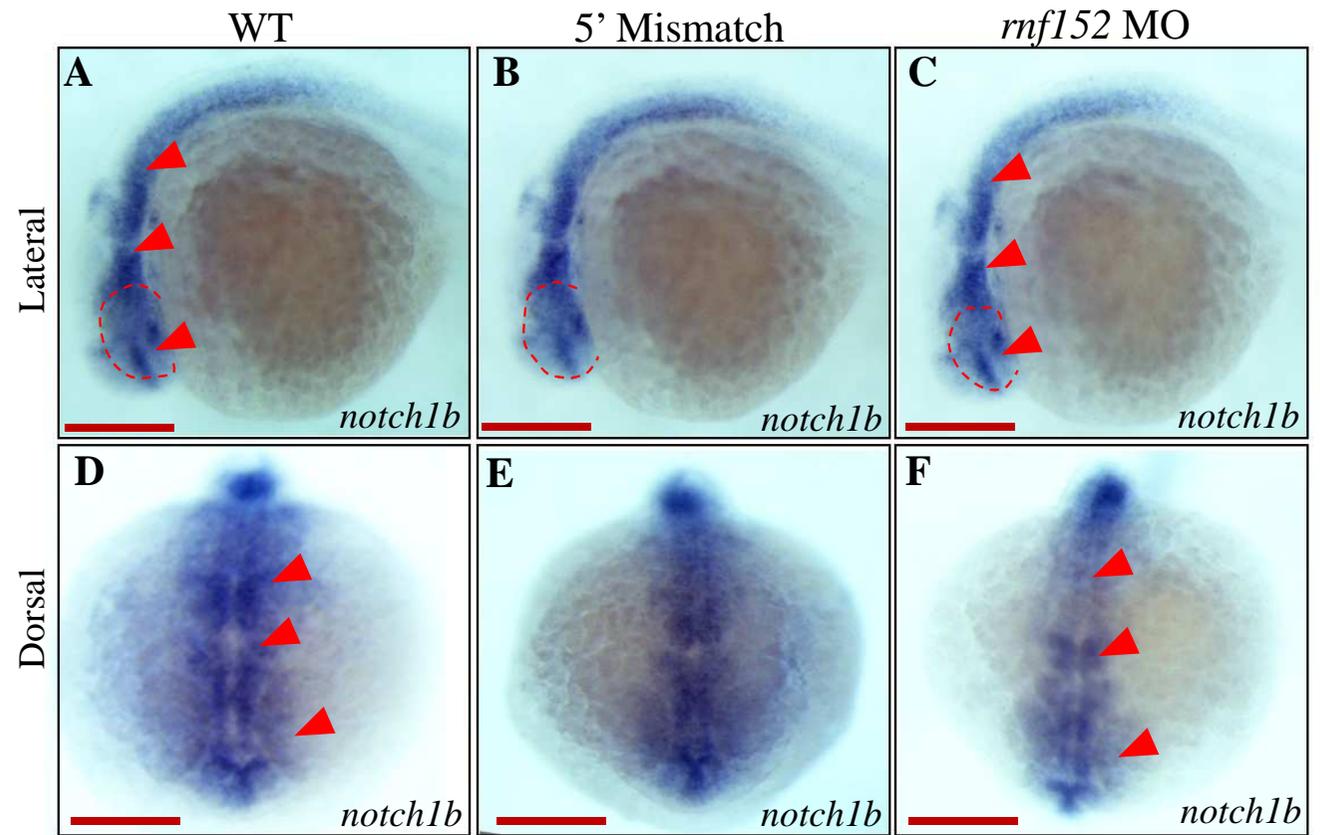
-RING-domain

-Transmembrane domain

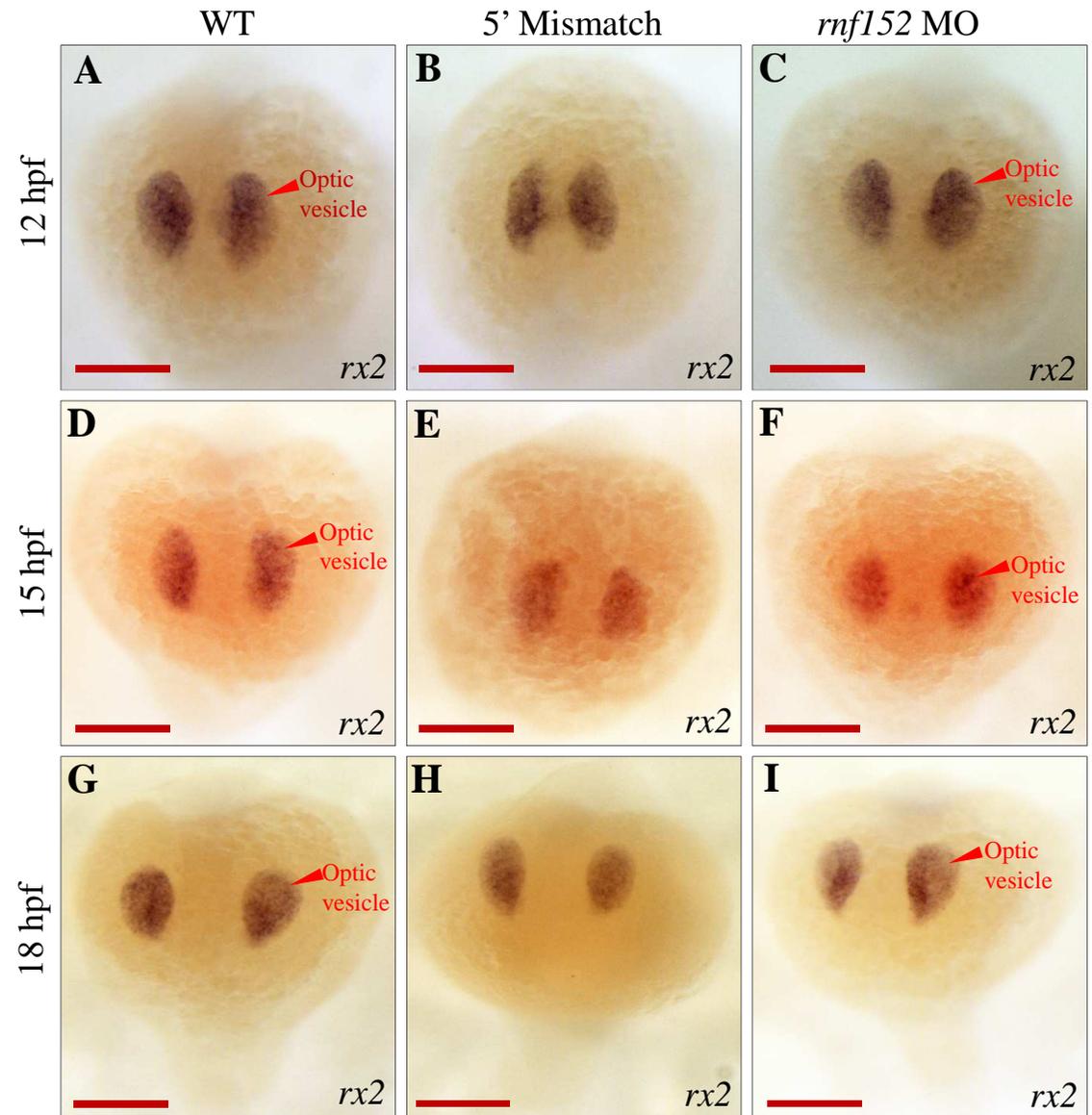
Supplementary fig. 2. Level of *deltaC* transcripts is elevated in *rnf152* morphants. *rnf152* MO were analyzed with WISH using *deltaC* as a probe. (A&D) WT embryos, (B&E) embryos injected with 5' mismatch as control, and (C&F) embryos injected with *rnf152* MO. *deltaC* transcripts were abundant in the ONL and INL of the eyes, but low in the forebrain, midbrain, and hindbrain of WT (A&D) and 5' mismatch (B&E). However level of *deltaC* transcripts was significantly elevated in the ONL, INL, and GCL of the eye (C&F). Red arrows indicate the layers of eyes where level of *deltaC* transcripts were elevated at 24 hpf (n=3). Scale bars A-F: 50 μ m.



Supplementary fig. 3. Transcripts of *notch1b* is not effected by *rnf152* knock-down. WISH analysis with *notch1b* transcripts in *rnf152* MO. (A&D) WT embryos, (B&E) Embryos injected with 5' mismatch MO control, and (C&F) Embryos injected with *rnf152* MO. Level of *notch1b* transcripts was similar among the three groups. Dotted red circles indicate eyes. Red arrowheads indicate eyes, midbrain and hindbrain at 24 hpf (n=3). Scale bars A-F: 50 μ m.

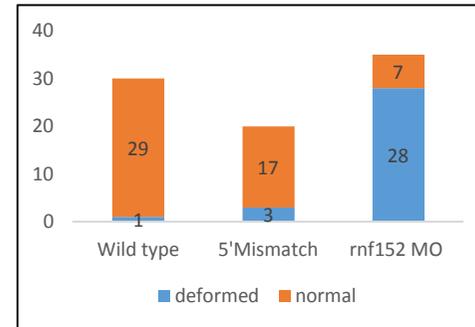


Supplementary fig. 4. WISH analysis of WT and *rnf152* MO with *rx2*-specific probe identified alterations in the optic vesicles at 12, 15, and 18 hpf. (A-C) 12 hpf, (D-F) 15 hpf, and (G-I) 18 hpf. (A,D,&G) WT embryos, (B,E,&H) Embryos injected with 5' mismatch control morpholino, and (C,F,&I) Embryos injected with *rnf152* morpholino. Level of *rx2* transcripts did not show significant differences in the optic vesicles among WT, 5' mismatch control, and *rnf152* MO at 12, 15, and 18 hpf. Red arrowheads indicate optic vesicle of the embryo (n=3). Scale bars A-I: 50 μ m.



Supplementary table-1. Statistical analysis and its graph plot for *rnf152* morpholino injected zebrafish embryos. Synchronized zebrafish embryos were obtained with natural breeding from animal facility. Microinjection was performed with *rnf152* MO (5 ng) and its 5' mismatch MO as a control in equal concentration with distilled water in 1- or 2-cell stage of embryos. All the embryos were observed manually in their particular stages and it was collected at 24 hpf to perform further study (n=3).

Properties	Wild type (Uninjected)	5' Mismatch	<i>rnf152</i> MO (5ng)
No. of embryos injected	30	24	42
No. of embryos died	0	4	7
Deformed embryos	1	3	28
Shrunken Front brain	0	0	1
Shrunken Hind brain	0	0	28
Smaller eyes	0	0	24
Bended Head region	0	0	0
Posterior region	0	0	0



Fish type	Deformed	Normal
Wild type	1	29
5' Mismatch	3	17
<i>rnf152</i> MO (5ng)	28	7