

## Additional file 2: Comparison of chick and zebrafish Lrrn1 proteins

# A

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1  MAKIRLVLTVCQVLELLTNSL TESSVQSNCEPQL CVCEIRPWFTPOSTYREATTVDCNDLRLTKTPSNLSSDQVLLQSNNAIKTTDELQLLFNL TELDFSQNNFTSIRDVGLSNLT Lrrn1-Gg
1  MARGTFFLVVEGQICFTLLLAVLGLSSVFTSTCEPQL CVCEIRPWFTPOSTYREATTVDCNDLFLTRIPGNLSADQVLLQSNNAIARTSEELEQLNLT TELDLSQNNFSDIRDI GLTINMS Lrrn1a-Dr
1  MERTAISTSLLT VCLVLF--AVCRCSLAVPFCFAQCCEIRPWYTPQSYVHQAKTVDCNELHL SRTIPWNIS VDTQVLLQSNNISRCISQLOS LVNLT TELDLSQNF FQQLFDVGLNLT Lrrn1b-Dr

120 QL TTHL EENQIMEMTDYCLQDL CNLQEL YINHNQISSISANAFSGLKNL LRLHLNSNKLKVIDSRWFSDSTPNLEILMIGENPVIGTIDMNFKPLSNLRSLVLAGMYLTDIPGNALVGLD Lrrn1-Gg
121 QL TTHL EENQIMEMTDFSLQDLTINLQEL YINHNQISSIAFNAFAGLRNLR LRLHLNSNRLKVIDSRWFSTPNLEILMIGENPVIGTIDMNFKPLSNLRSLVLAGMYLTDIPGNALVGLD Lrrn1a-Dr
117 QL VTLVLEENQIKELPDMCLKDLVSLLELYINHNQISSIGFNAFSGWGNL LRLHLNSNKLVAIDSHWFESLPNLEILMIGENPILCLODMNFPLTKLHSLVLAGMYLREIFEGAFQGLE Lrrn1b-Dr

240 SLESLSFYDNKLVKVPQAL EKVPNLKFLDLNKNPIHKIQEGDFRNMLRLKELGINNMGELVSDRYALDNLPELTKLEATNPKLSYIHLRAFNRVPAL ESMMLNNALNAVYQKTVES Lrrn1-Gg
241 NLESLSFYDNKLVKVPQAL EKVPNLKFLDLNKNPIHKIQEGDFRNMLRLKELGINNMGELVSDRYALDNLPELTKLEATNPKLSYIHLRAFNRVPAL ESMMLNNALNAVYQKTVES Lrrn1a-Dr
237 YLESLSFDFNKLTA VPKKALRVLP SLKFLDLNKNPIVRIQEGDFQDFPHLEELSLNMEELVAVERGFSNLPQMAKLELYNNHFLFFIDRAAF LKMRCLRTLLIHNNDLTLPHETVSA Lrrn1b-Dr

360 LPNLR EISIHSNPLRCD CVIHW--INSNKTNIRFMEPLSMFCAMPPEYRGOQVKEVLT---QDSNEQCLPMISHETFPNHLNLDIGMTVFLDCRAMAEPEPEIYWVTP LGNKVTVESLS- Lrrn1-Gg
361 LPNLR EISIHSNPLRCD CVIQW--MSSNKTNIRFMEPLSMFCAMPPEYRGOQVKEVLT---REPSGQCLPMISHETFPNHLNLDIGMTVFLDCRAMAEPEPEIYWVTPSGNKVMDTVS- Lrrn1a-Dr
357 FPNLDEISIHSNPLRCDCLNNLGPVLCNQSSLKVLEFQITLICASPQLVGGALQDVASASWNGASNTCLPLTISQHAFFPQLNVTLQQLTLDCVAVADFAPOFYWVTPGDKVTSEAVSP Lrrn1b-Dr

474 -----DKYKLSSEGLEISNQIEDSGRYTCVAQNI EGADTRVATIRVNG-----TLLDGTQVLKIFVKQAESHSILVSWKVN SNVMTSNL-----KWSATMKIDNP Lrrn1-Gg
475 -----DKYQLNSAGTLRISYICVDDSGFYTCVAQNI EGADTRVATIRVNG-----TLLDSTQLMKIYVVKHTESHSLVSWKVN SNVMTSNL-----KWSATMKIDNP Lrrn1a-Dr
477 SSNEGGGTPKIKHRMQDCALEIPIHEFELTGLYTCVANN AEGADTRSVSVVYDKRSWNGAHFHGGHGVVNTIGSLVILAKITVHACS VVLEWKMPHYAIPSNHEAGQPKWLSATVKIDNP Lrrn1b-Dr

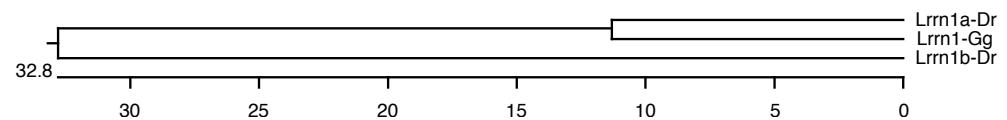
567 HITYTARVPVDVHEYNLTHLQPSTDYEVCLTVSNIHQQTQKSCVNVTTKNAAFALDISDQETSTALAAVMGSMFAVISL ASISVYI AKRFKRKNYHHS LKKYMQKTS SIPLNELYPPLIN Lrrn1-Gg
568 HITYTAKVPVDVHEYNLTHLQFATEYEVCLTVSNIHQQTQKSCVNVTTKNAAF AVEISEGQNTALAAVMGTTLATISLGSITLTYIAKRKRKNYHHS LKKYMQKTS SIPLNELYPPLIN Lrrn1a-Dr
597 QISYTA VMPVDVQ EYNLTHLIPSTIEYVCLTMAGT-EQIQFSCINVTTRK EAFVEMVAOPTINVAALAAVMGSMFAICIMALLVFYMGRRMKQKSGHHS LKKYMQKTS SIPLNELYPPLIN Lrrn1b-Dr

687 LWEGDSDKDKGSAETKPTQVDTSRSYMM Lrrn1-Gg
688 LWEADSEKDKGSDNKQTOVDTIRSYMM Lrrn1a-Dr
716 LWE NETEKKEGAVDPQNSQIDTSKTYMM Lrrn1b-Dr
    
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# B

		Percent Identity				
		1	2	3		
Divergence	1	████	80.2	50.8	1	Lrrn1-Gg
	2	22.5	████	49.9	2	Lrrn1a-Dr
	3	64.7	66.5	████	3	Lrrn1b-Dr
		1	2	3		

# C



A) Clustal alignment of chick and zebrafish Lrrn1 proteins. Dashed lines represent gaps introduced by the alignment algorithm to produce an optimal alignment. Residues identical to Lrrn1-Gg are highlighted in black. Sequence positions are numbered on the left. Lrrn1-Gg = chick (*Gallus gallus*); Lrrn1a-Dr = zebrafish (*Danio rerio*, XP\_696951); Lrrn1b-Dr (zINLRR (XP\_696356). B) Table showing the percentage identity and percentage difference between the aligned proteins. Lrrn1-Gg and Lrrn1a-Dr share 80% amino acid identity whereas Lrrn1b-Dr is divergent and shares approximately 50% amino acid identity with Lrrn1/1a. C) Cladogram showing phylogenetic relationship between Lrrn1 proteins. All panels were generated using the DNASTAR software module MegAlign