

Additional file for

IK is essentially involved in ciliogenesis as an upstream regulator of oral-facial-digital ciliopathy syndrome gene, *ofd1*

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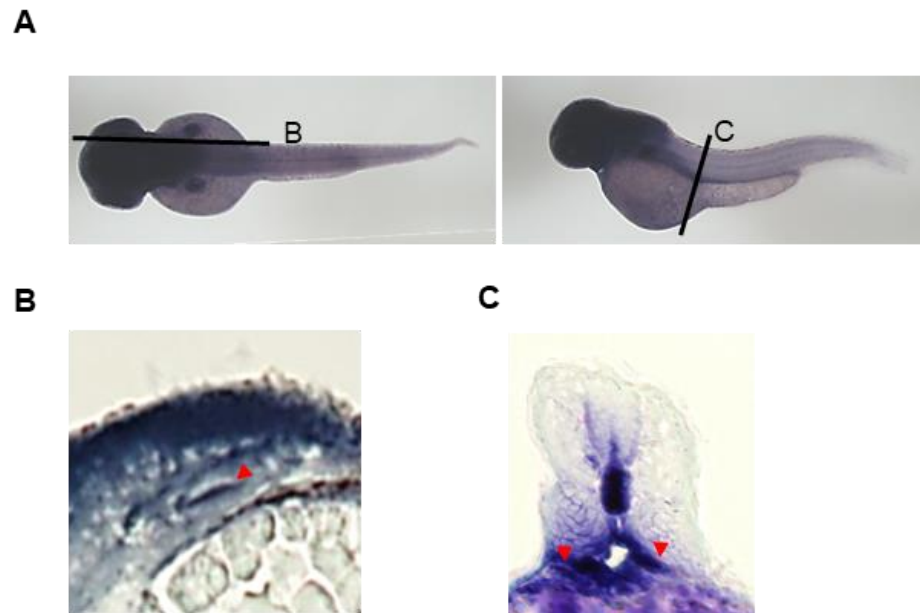


Figure S1. Sections of whole-mount ISH probed with *ik*

(A) Dorsal (left) and lateral (right) view of 2-dpf embryo stained with the *ik* probe with planes of sections in follow panels as indicated (B) Section image of part of head with otic vesicle (arrow) of zebrafish embryo (C) Transverse cross section of the pronephric tubules (arrow).

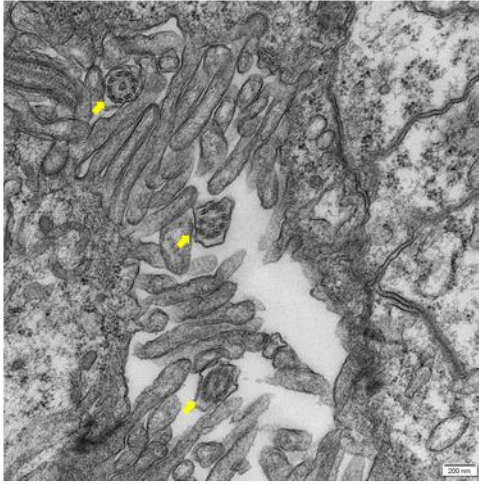
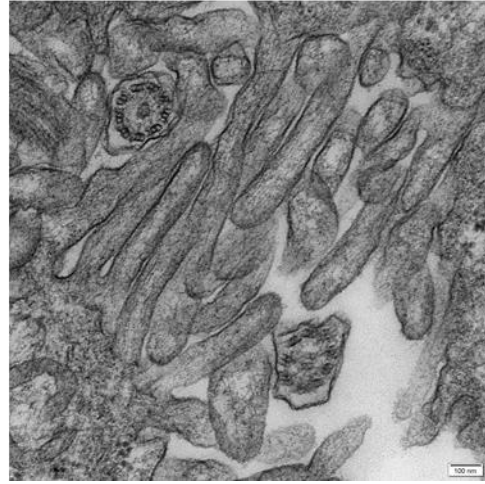
A**B**

Figure S2. Large field-of-view images of cilia in the pronephros of *ik* mutants imaged by TEM

(A) Cross-sectional image of zebrafish pronephros. Motile cilia were observed in the sample (arrow).

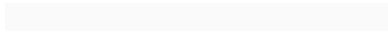
Scale bar, 200 nm (B) High magnification image of (A). Scale bar, 100 nm.

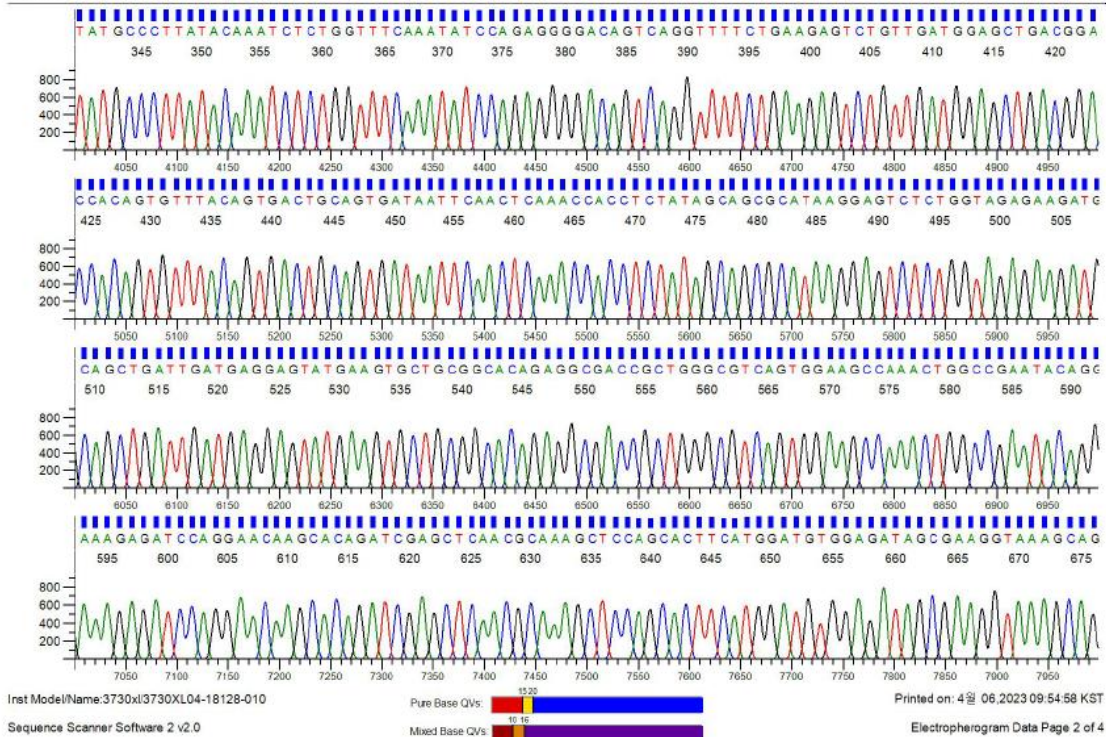
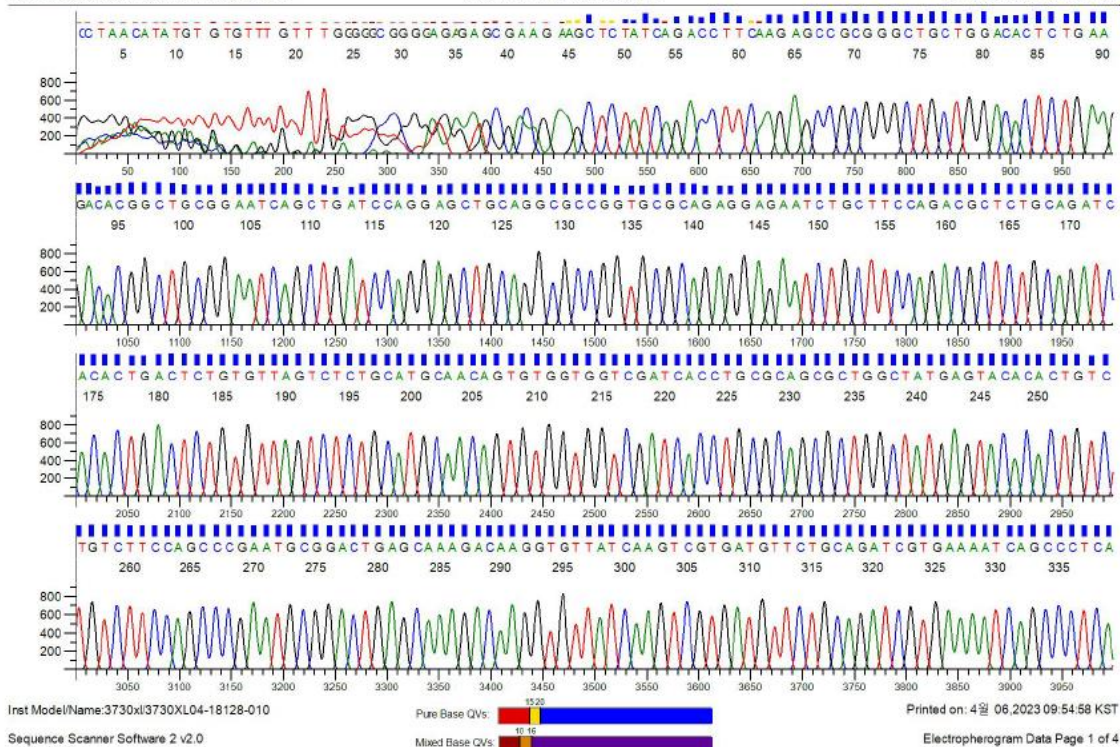
Additional File 3. Sequencing results of *ofd1* in *ik* KO embryos at 2.5 dpf

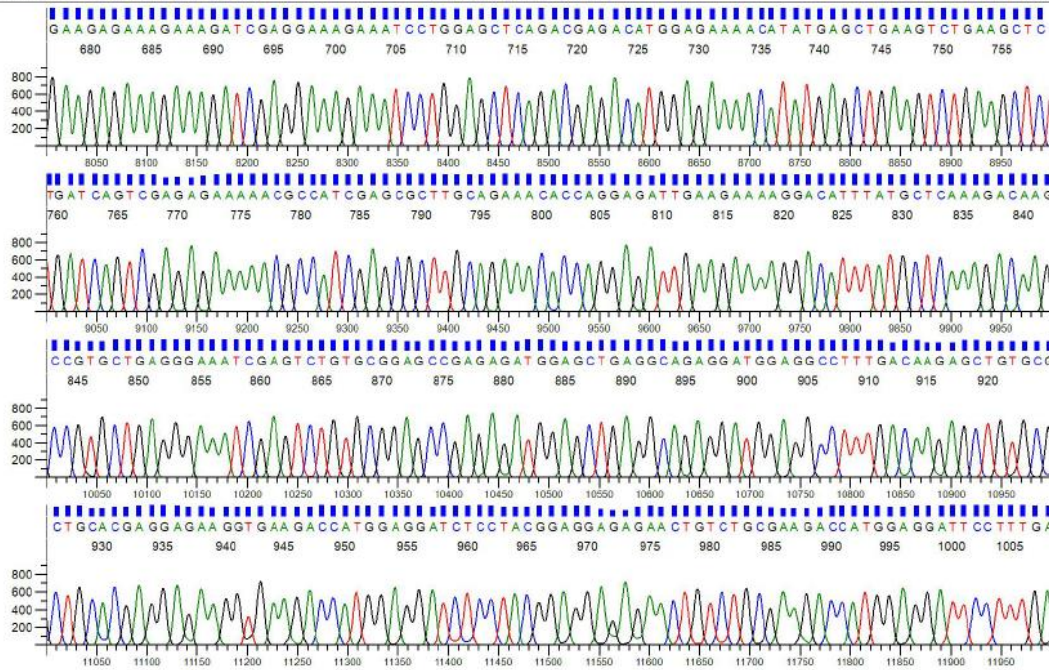
To analyze the full sequence of *ofd1* in *ik* KO embryos at 2.5 dpf, full length *ofd1* PCR products were cloned to pBHA-T vector and verified through sanger sequencing (Cosmogenetech, Seoul, Korea).

● Sequencing results of *ofd1* exon1-exon7 in *ik* KO:

CCTAACATATGTGTGTTTGTGGGGCGGGGAGAGAGCGAAGAAGCTCTATCAGACCTTCAAGAGCCGCG
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GCTTGCAAGAACACCAGGAGATTGAAGAAAAGGACATTTATGCTCAAAGACAAGCCGTGCTGAGGGAAATCG
AGTCTGTGCGGAGCCGAGAGATGGAGCTGAGGCAGAGGATGGAGGCCTTTGACAAGAGCTGTGCGCTGCA
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Pure Base QVs



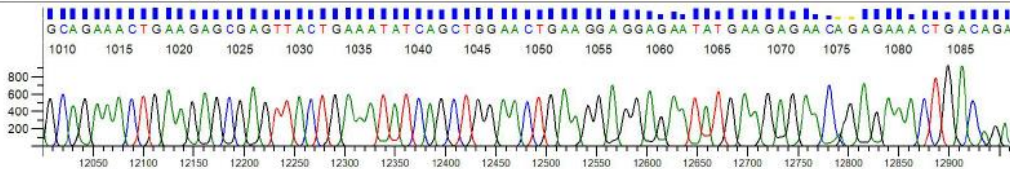
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Mixed Base QVs



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Pure Base QVs



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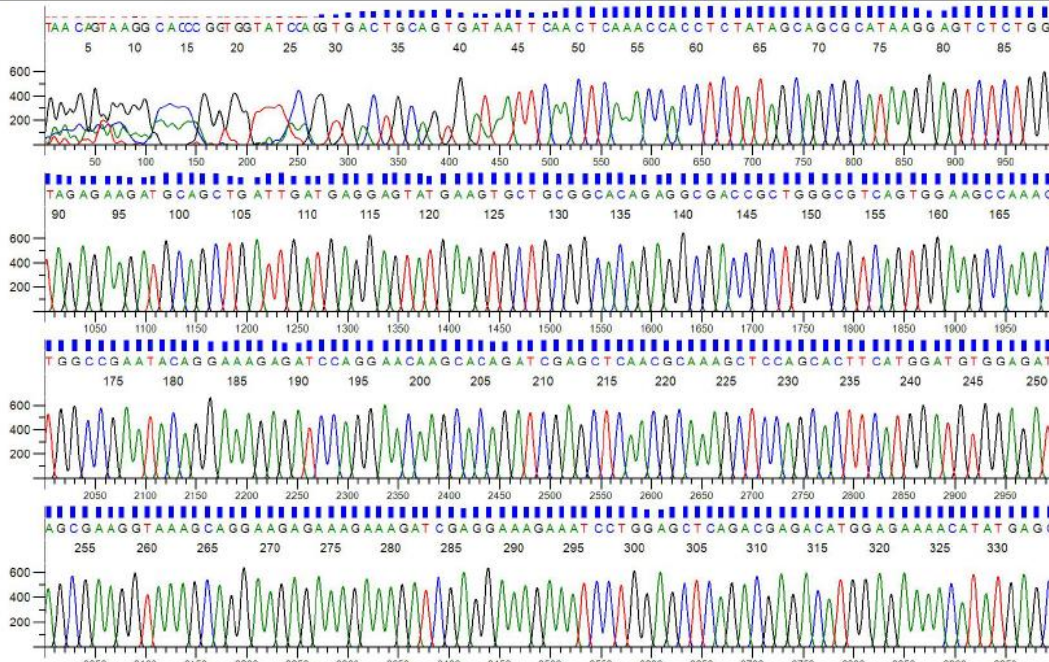
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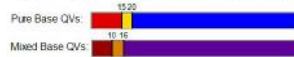
● Sequencing results of *ofd1* exon5-exon13 in *ik* KO:

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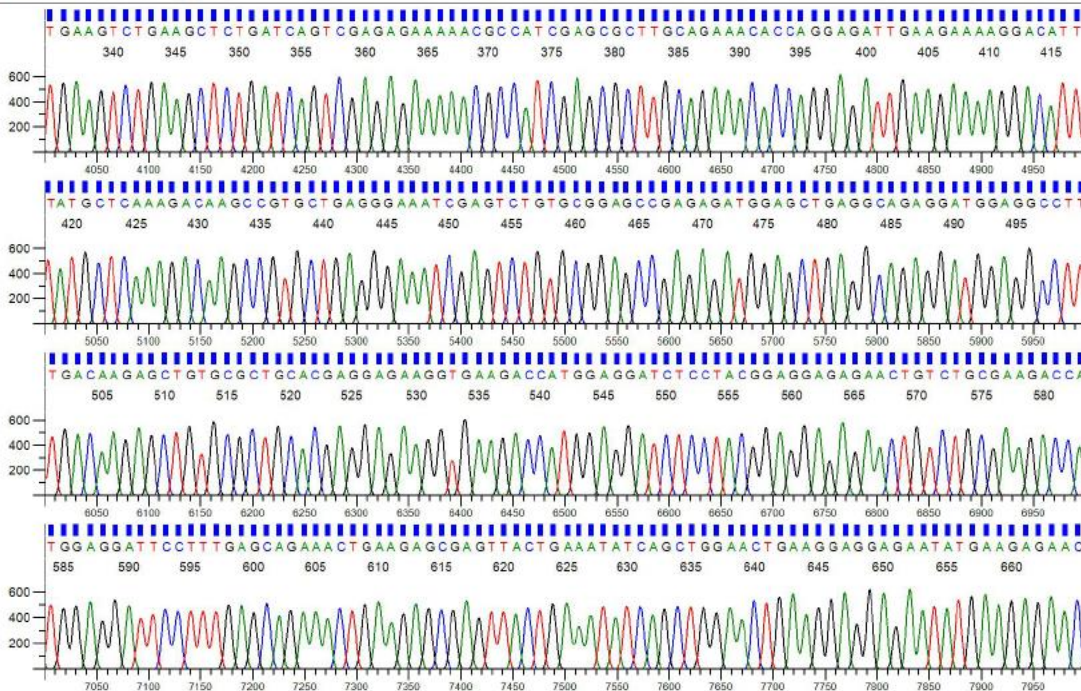
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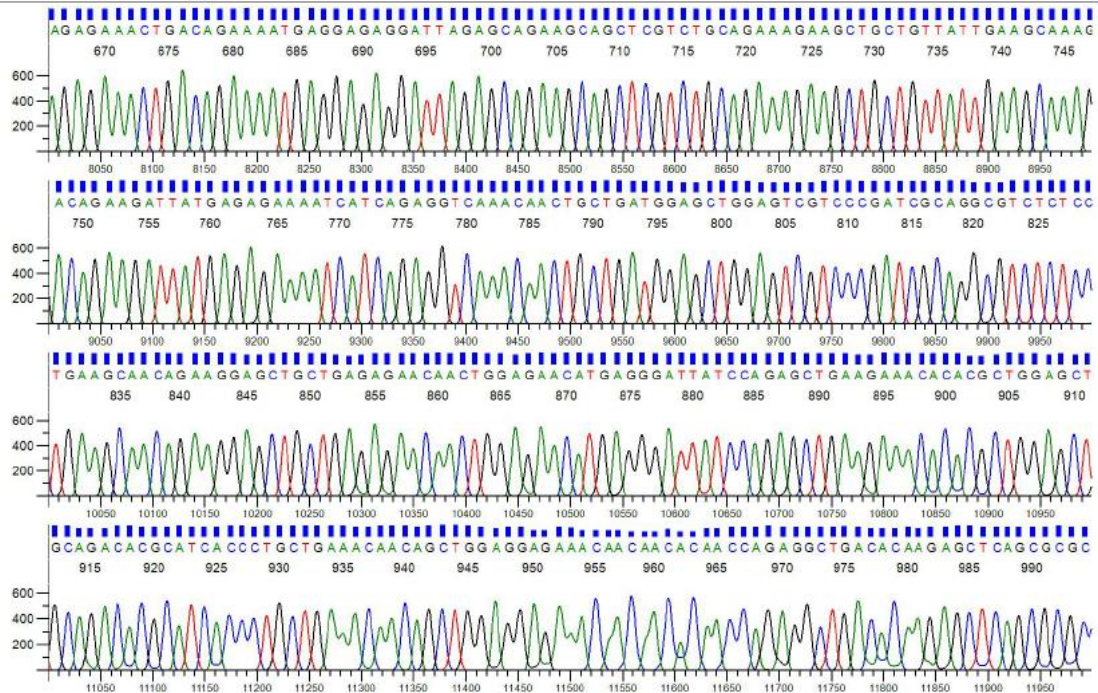
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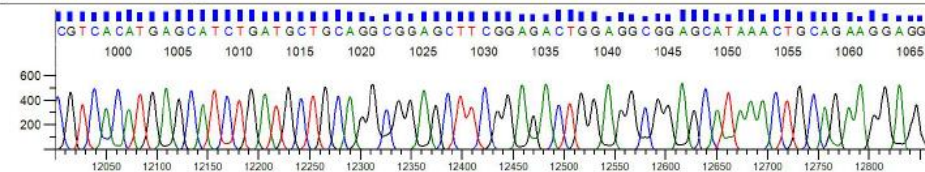
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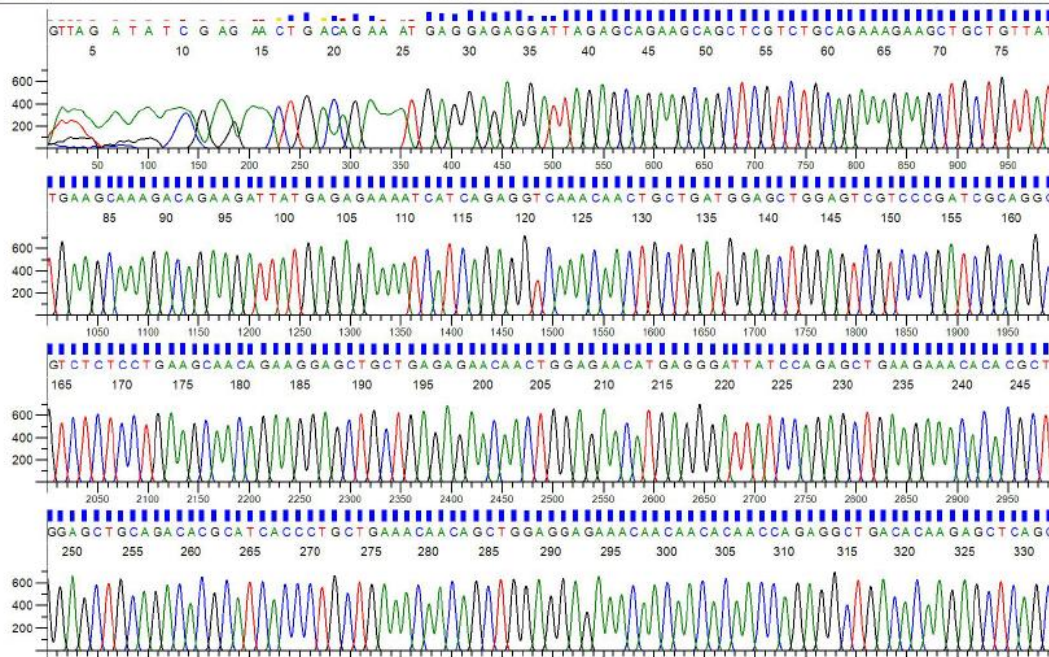


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● Sequencing results of *ofd1* exon11-exon15 in *ik* KO:

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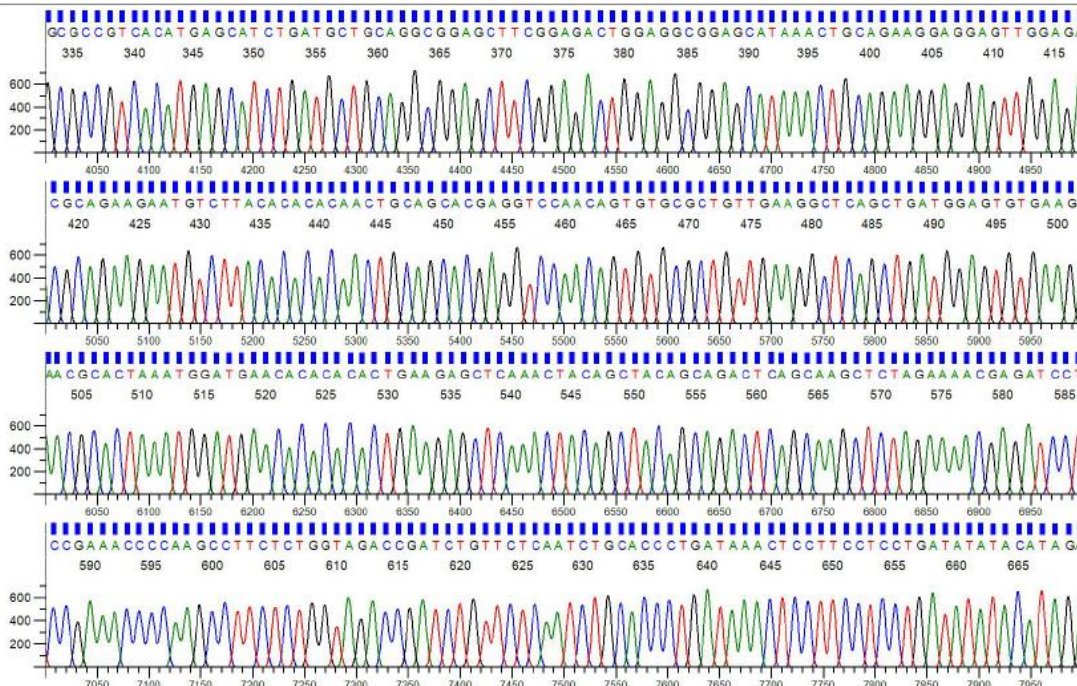
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Mixed Base QVs:

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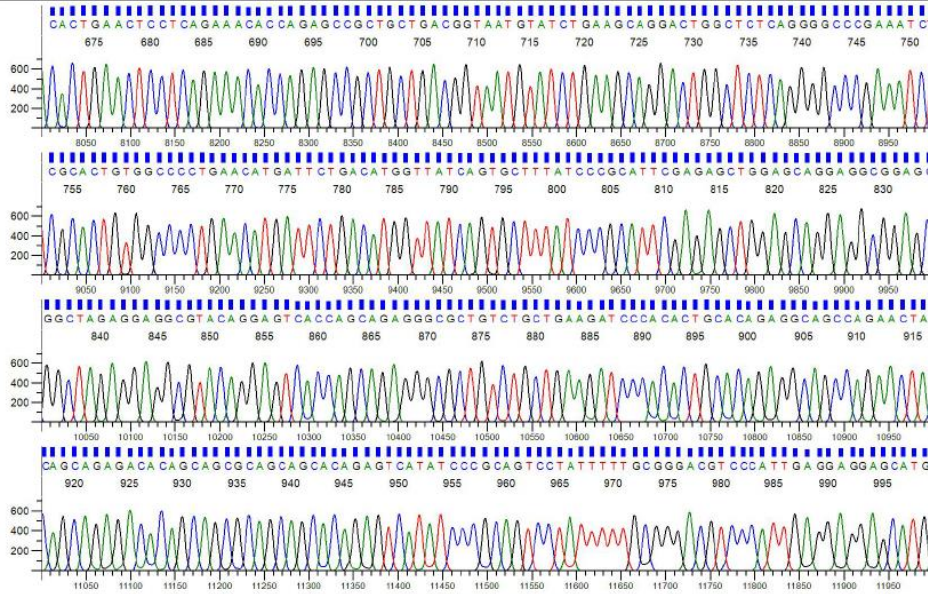
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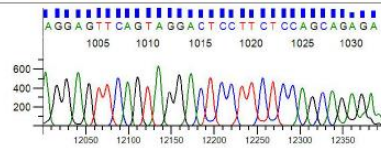
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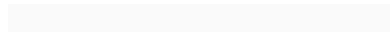
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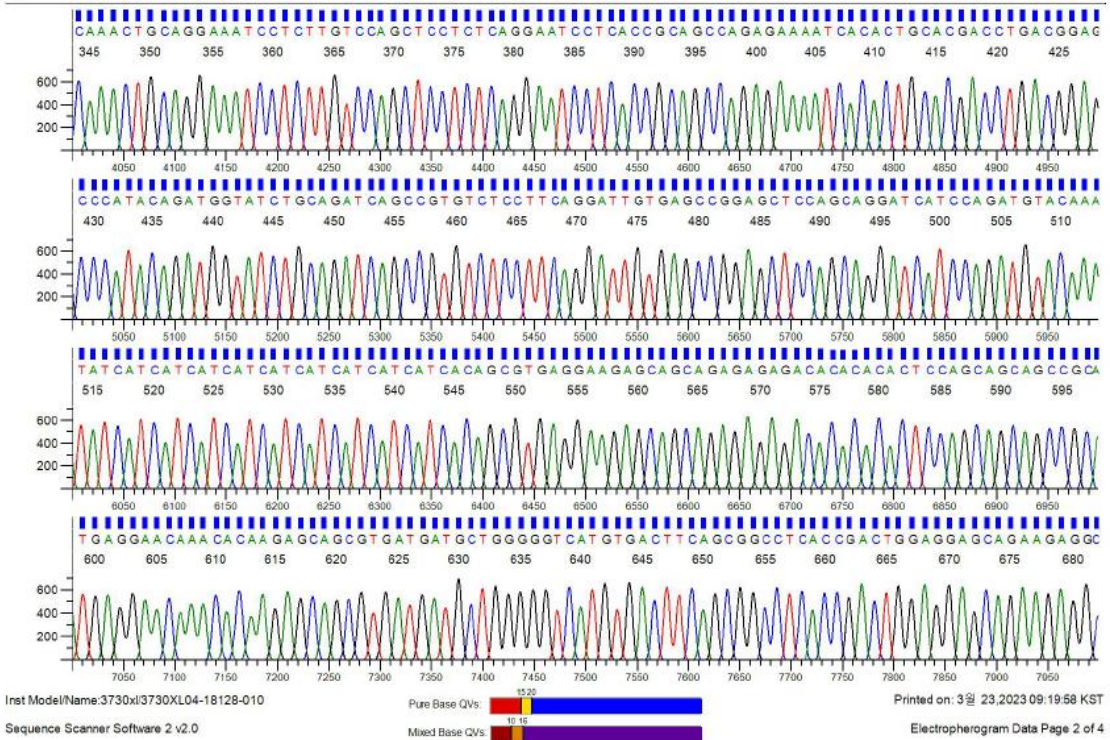
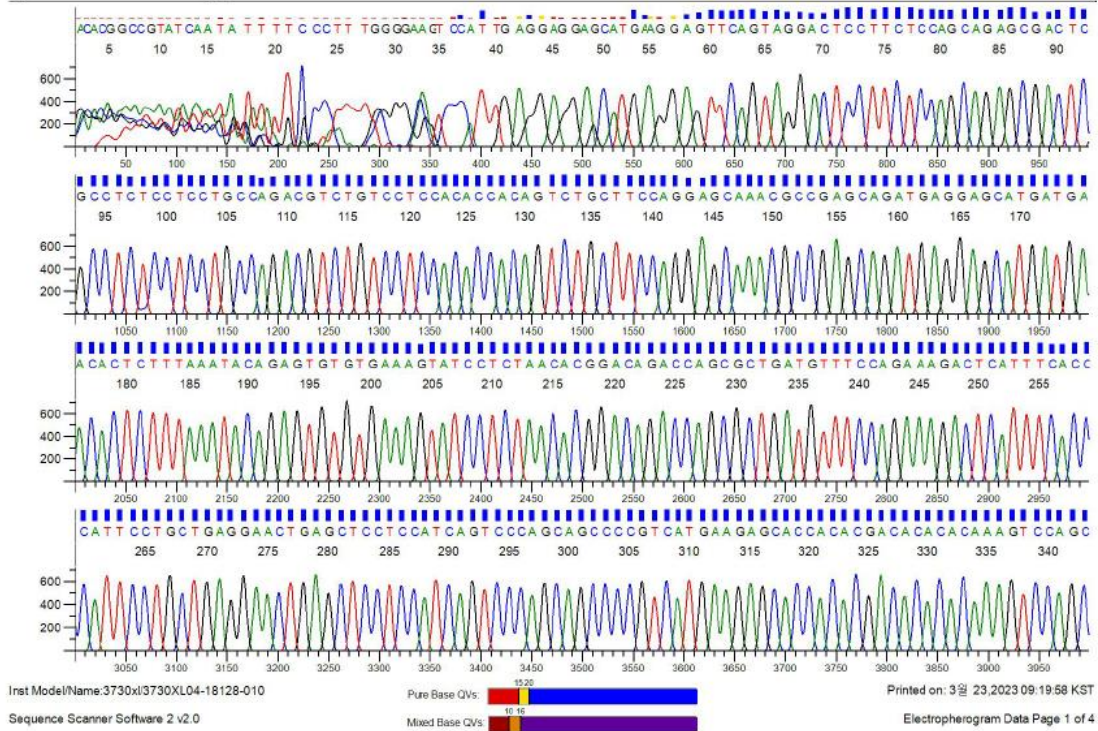
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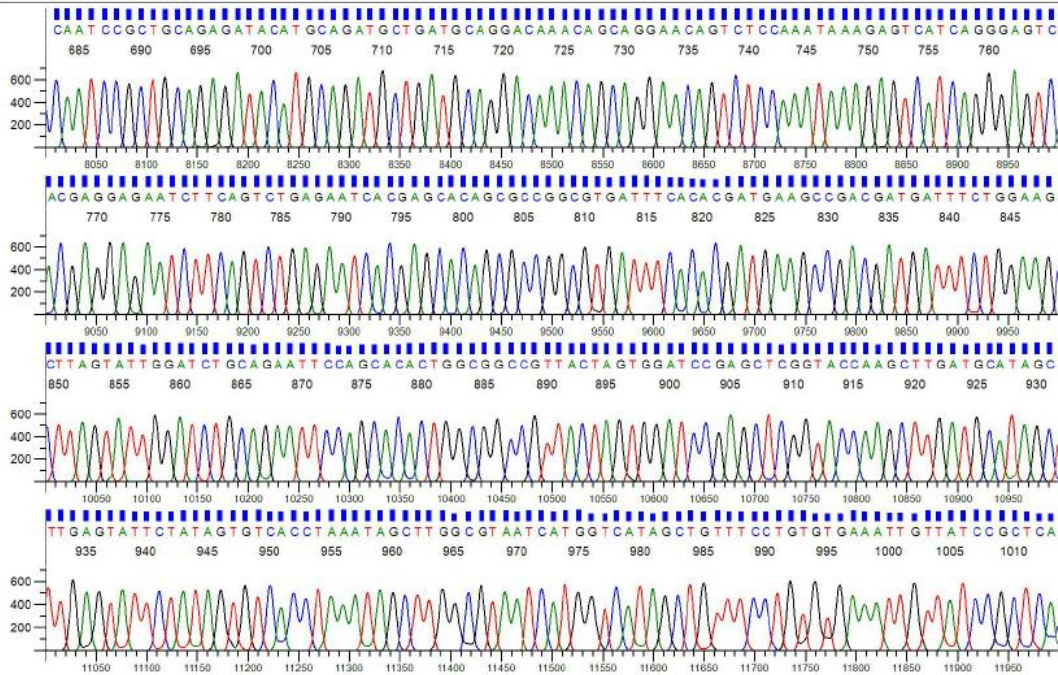
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● Sequencing results of *ofd1* exon16-exon23 in *ik* KO:

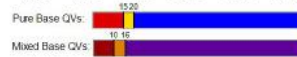
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CGGACAGACCAGCGCTGATGTTTCCAGAAAGACTCATTTACCCATTCTGCTGAGGAACTGAGTCTCTCCA
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CATAAGATGGTATCTGCAGATCAGCCGTGTCTCCTTCAGGATTGTGAGCCGGAGCTCCAGCAGGATCATCC
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GGACAAACAGCAGGAACAGTCTCCAAATAAAGAGTCATCAGGGAGTCACGAGGAGAATCTTCAGTCTGAGAA
TCACGAGCACAGCGCCGGCGTGATTTACACGATGAAGCCGACGATGATTTCTGGAAGCTTAGTATTGGATC
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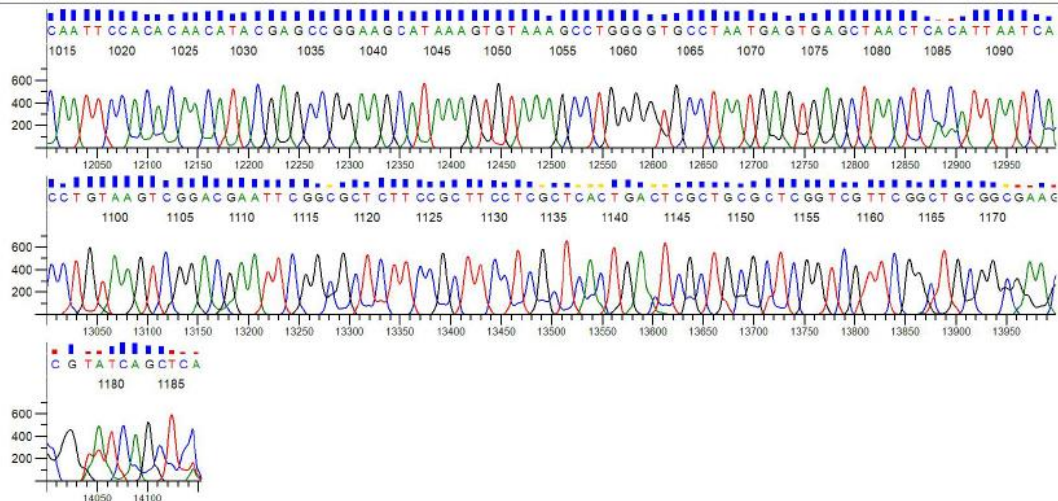
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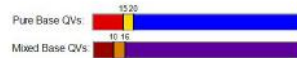
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Additional File 4: Table S1. List of primer sequences used for RT-PCR analysis

Name of Genes		Primer sequences (5'-3')
Zebrafish <i>ik</i>	Forward	TACGCTGAATGCTACCCTGC
	Reverse	TGAGTGTCAAAGTCCCAGCG
Zebrafish <i>gapdh</i>	Forward	GTATGACTCCACCCACGGC
	Reverse	ACAATGGTCATGCTGGAGGG
Zebrafish <i>slc4a4</i>	Forward	GATCGGCCCAAAGTCTTCT
	Reverse	GCTCCTGCTCCATCATGTCC
Zebrafish <i>slc13a1</i>	Forward	GCATCTCCAACCCAGCTCTT
	Reverse	CCGAGGTACATCCAGTGCAG
Zebrafish <i>slc12a3</i>	Forward	GACCGGAGGGCAGTTTCTTT
	Reverse	GAGGAAAGGGTGGCTCCAAA
Zebrafish <i>foxj1a</i>	Forward	AGTCCAACCCGCACATCAAG
	Reverse	GTTTCCTGAGTCGGTGCT
Zebrafish <i>ofd1</i>	Forward	CCTGAAGCAACAGAAGGAGC
	Reverse	TGCTTGCTGAGTCTGCTGTA

Additional File 5: Table S2. List of primer sequences used for WISH analysis

Name of Genes		Primer sequences (5'-3')
Zebrafish <i>ik</i>	Forward	TTTTTGCAGGATCCATGCCTGAACGCGAAA
	Reverse	TTCTAGAGGCTCGAGCTAATATTTTGGCCGCTTGA
Zebrafish <i>cm1c2</i>	Forward	GAGGTAATACGACTCACTATAGGGATGGCTAGTAAG AAA GCC GCG
	Reverse	GAGGAATTAACCCTCACTAAAGGGTCAAGATTCCTCTTT TTCATC
Zebrafish <i>slc4a4</i>	Forward	GAGGTAATACGACTCACTATAGGGATGAGCGCCGGC AAG AGG GTG
	Reverse	GAGGAATTAACCCTCACTAAAGGGCTCTTCGAACTTGAT CCACC
Zebrafish <i>slc13a1</i>	Forward	GAGGTAATACGACTCACTATAGGGATGAGGCGGCTT AGATGTTCT
	Reverse	GAGGAATTAACCCTCACTAAAGGGGTTGCTCAACCA CATAGAGAGAA
Zebrafish <i>slc12a3</i>	Forward	GAGGTAATACGACTCACTATAGGGATGGAGAATCCA GGCTTCCAG
	Reverse	GAGGAATTAACCCTCACTAAAGGGTCAACAACACCA CCACTATCC
Zebrafish <i>ofd1</i>	Forward	TAATACGACTCACTATAGGGATGTCTGCGAGTAAAG AGGAGAGT
	Reverse	ATTAACCCTCACTAAAGGTCACCAGAAATCATCGTCGG