

Table S1. Oligonucleotide primers and morpholino sequences

Oligonucleotide	Sequence	Gene	Species
Cyp26a1-F	CAGTGCTACGTGCTCGTGAT	<i>Cyp26a1</i>	Mouse
Cyp26a1-R	TCCTCCAAATGGAATGAAGC		
Opn1sw-F	CTGGAGATGGTGTGCAGGAAG	<i>Opn1sw</i>	Mouse
Opn1sw-R	GCTTACAGGTGAACAGACAC		
Opn1mw-F	GCTTACAGGTGAACAGACAC	<i>Opn1mw</i>	Mouse
Opn1mw-R	GCAGGTGACACTGAAGAGAC		
LacZ-F	CTCCGGCTGCGGTAGTTCAGGCAGTTC	LacZ cassette	
LacZ-R	CGCTAAATACTGGCAGGCGTTTCGTCAG		
olVax2-F	GAAGAGTGAAGTGCAGGAAGG	<i>Vax2</i>	medaka
olVax2-R	CCTCTTGACAGGGTGACAGG		
Opn1sw-promoter-F	GGGGTACCCC-ACGATTCTTCTGCTATCACCC		Mouse
Opn1sw-promoter-R	GGGGTACCCC-AACCCAGACTATTCAGAAGAG		
Vax2-F	ATGGGCGATGGGGGCGCGGA	<i>Vax2</i>	Mouse
Vax2-R	TAAATGTCAGCTTCTTGT		
olOpn1sws1-F	CGATGGGAAAATACTTCTACC	<i>olOpn1sws1</i>	medaka
olOpn1sws1-R	ACTTCTTCTCAGCCTTCTGC		
olRaldh2F1	AGCAGATCTGTGAAGTCCAGG	<i>olRaldh2</i>	medaka
olRaldh2R1	CTCAGTTGATCCTGTGAAAGC		
Hprt-RT-F	GAAGAGCTACTGTAATGATCAG	<i>Hprt</i>	Mouse
Hprt-RT-R	GCTGTACTGCTTAACCAGGG		
Thrb-RT-F	CAGATGCCATCTTTGACCTG	<i>Thrb</i>	Mouse
Thrb-RT-R	GTGTTCAAAGGCCAACAGGA		
olOpn1mw-F	GAGAAGTGTCCAGGATGGTG	<i>OlOpn1mw</i>	medaka
olOpn1mw-R	AATCTTTCATCAACACGTGC		
Vax2-morpholino	CAACCAAGTTAACCAGTCTCTTAGG	<i>Vax2</i>	medaka
mmVax2-morpholino	CAAGCAACTTAAGCAGTGTCTTACG	<i>Vax2</i>	medaka
Enh1Raldh3-F	GGGGTACCCC-GGCTGGAAGTGCCAAAGATC		Mouse
Enh1Raldh3-R	GGGGTACCCC-TGTTCTGGCACTGGGTTAC		
Enh2Raldh3-F	GGGGTACCCC-AGCACAGGAATGGATTGACC		Mouse
Enh2Raldh3-R	GGGGTACCCC-TGGCCCTGAGGACACAACAG		
Enh3Raldh3-F	GGGGTACCCC-GAACCATTGTAGTTTAGACAG		Mouse
Enh3Raldh3-R	GGGGTACCCC-AAATGTCTCCAGCACCAACTC		
Opn1sw RT-F	CCAGTTGCTGAGGACTCTC	<i>Opn1sw</i>	Mouse
Opn1sw RT-R	GTAGCAGAGACAGAAGGATC		
Cyp26a1 RT-F	CAGGAGGGTTTCGGGTTGC	<i>Cyp26a1</i>	Mouse
Cyp26a1 RT-R	GAGGCACTATAAAGCGGTCCG		
Opn1mw RT-F	CTTCCACTCAGCATCATCG	<i>Opn1mw</i>	Mouse
Opn1mw RT-R	CAGTATGCGAAGACCATCAC		
Cyp26b1 RT-F	GCAAGGTCTTCTCCAAGATC	<i>Cyp26b1</i>	Mouse
Cyp26b1 RT-R	GCCTCCTGATATACATTGATG		