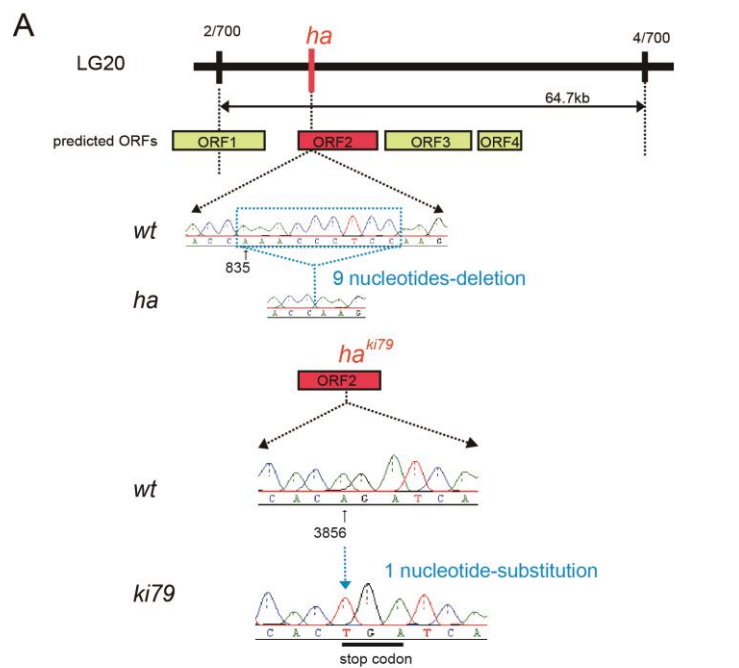
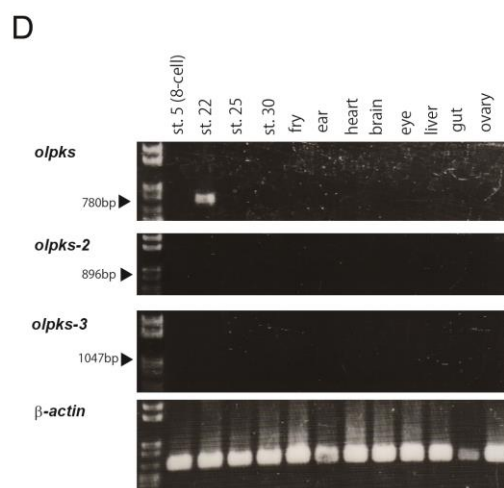
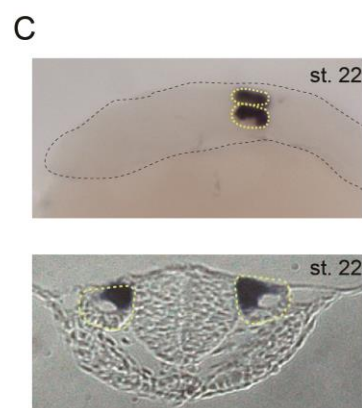


Name	Ketoacyl Synthase	Acyl Transferase	Dehydratase	Ketoacyl Reductase	Acyl Carrier Protein
Abbreviation	KS	AT	DH	KR	ACP
Amino acid sequence of OIPKS	* <u>C</u> SSS (173-176) HGT <u>G</u> T (305-109) N <u>I</u> GH (343-346)	<u>G</u> H <u>S</u> I <u>G</u> (606-610) YH <u>S</u> H (714-717)	* <u>H</u> KNN <u>G</u> VAMP (914-923) DYEM <u>Q</u> (1078-1082)	<u>T</u> GGIS <u>G</u> LG (1714-1721) *YAAA (1859-1862)	* <u>D</u> SML (2009-2012)

asterisks: residues mutated in rescue experiments
underlines: conserved amino acid residues



Additional file 2.

Mapping analyses and expression pattern of the *ha* gene. (A) Sequencing of the *ha* gene in two mutant fish. *ki79* fish harbors a nonsense mutation at 3856 nt of the ORF2 locus. (B) Architecture of OIPKS protein predicted from the amino acid sequence (*Upper*). Critical residues of each domain used for the mRNA injection experiment are shown by arrows. Mutation site of each mutant is shown by arrowhead. Three amino acids corresponding to 9-bp deletion is 'KPS'. Central proline is found to be a highly conserved residue among PKs although it is not previously considered as a conserved motif. Based on the structure of mammal fatty acid synthase (FAS), it is possible that the proline contribute to help a substrate to enter the active site of KS. The red bar indicates the region used as an antigen for producing anti-serum of OIPKS. Conserved motifs found in the amino acid sequence of OIPKS (*Lower table*). Asterisks show residues mutated in mRNA rescue experiments. Underlines show conserved amino acid residues. (C) Whole-mount *in situ* hybridization with *olpks* probes at st. 22. The dorsally- and medially- restricted pattern is evidenced by lateral view (*Upper*) and histology of the OV region (*Lower*). Yellow dashed lines show OVs. (D) Expression profiles of *olpks* and paralogous gene candidates in the embryonic stages or adult tissues. A RT-PCR analysis reveals that *olpks* is expressed but *olpks-2* and *olpks-3* are not expressed and that *olpks* is expressed only around embryonic stage 22.