

Fig. S1. *ehhadh* knockout zebrafish (*ehhadh*<sup>-/-</sup>) produced by CRISPR/Cas9. (A) The targeting site for *ehhadh* gene knockout. The red box in 2nd exon indicates target site. *ehhadh*<sup>-/-</sup> is obtained with a 1 bp-T deletion (red triangle indicates the mutation location). (B) Relative mRNA levels of *ehhadh* in livers of wild-type and *ehhadh*<sup>-/-</sup> (n=5).

\*\*\* means  $P < 0.001$ .

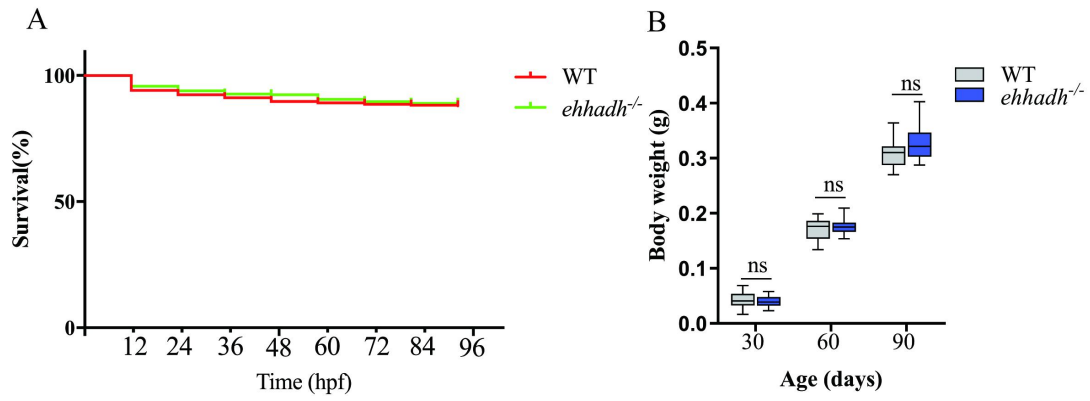


Fig. S2. Survival rate of fertilized ovary and body weight of wild-type zebrafish (WT) and *ehhadh* knockout zebrafish (*ehhadh*<sup>-/-</sup>). (A) Survival rate of fertilized ovary of WT and *ehhadh*<sup>-/-</sup> at 0-96 hours. (B) Statistics of body weight in WT and *ehhadh*<sup>-/-</sup> at 30, 60 and 90 days.

ns means no significant difference.

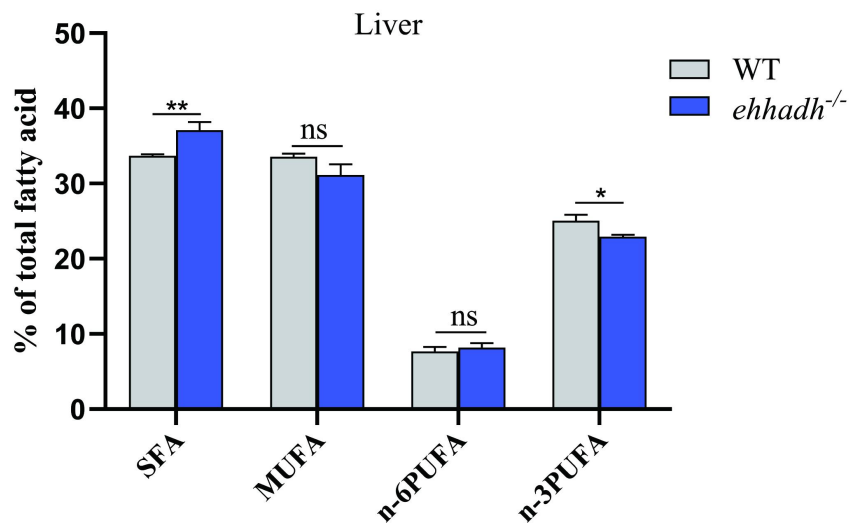
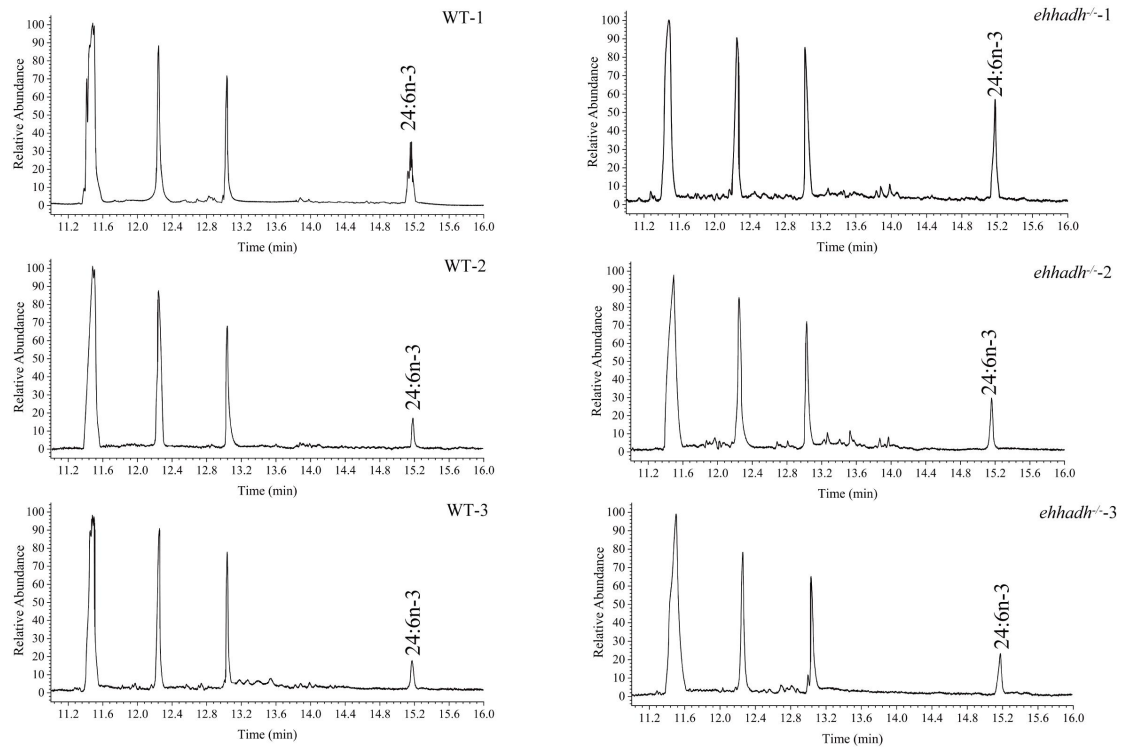


Fig. S3. Liver  $\Sigma$  SFA,  $\Sigma$  MUFA,  $\Sigma$  n-6PUFA and  $\Sigma$  n-3PUFA composition of wild-type zebrafish (WT) and *ehhadh* knockout zebrafish (*ehhadh*<sup>-/-</sup>).

SFA, saturated fatty acid; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid.

ns means no significant difference; \* means  $P < 0.05$ ; \*\* means  $P < 0.01$ .



**Fig. S4. Chromatography of liver fatty acids methyl esters (FAMES) in wild-type zebrafish (WT) and *ehadh* knockout zebrafish (*ehadh*<sup>-/-</sup>).**

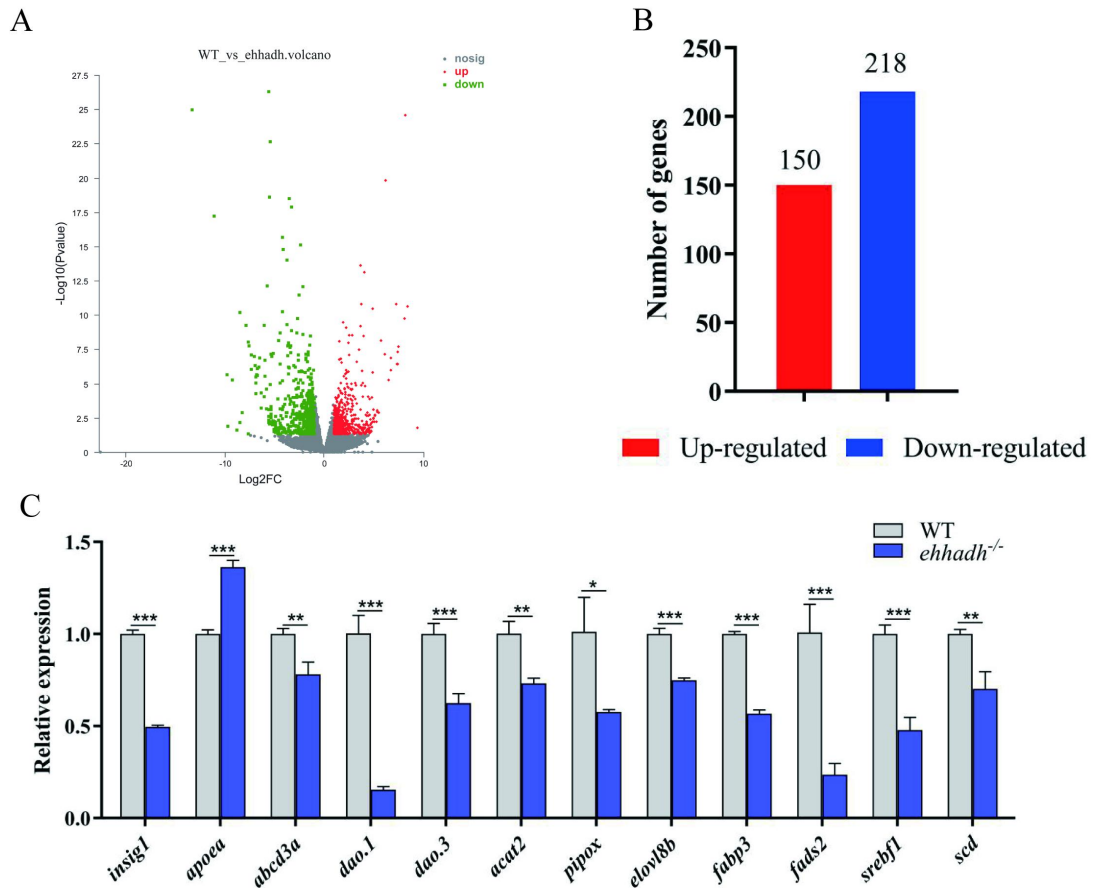


Fig. S5. Liver transcriptome analyses of wild-type zebrafish (WT) and *ehhadh* knockout zebrafish (*ehhadh*<sup>-/-</sup>). (A) Differentially expressed genes (DEG) volcano graph. (B) Differentially expressed genes (DEG) histogram. (C) qPCR verification.

\* means  $P < 0.05$ , \*\* means  $P < 0.01$ , \*\*\* means  $P < 0.001$ .

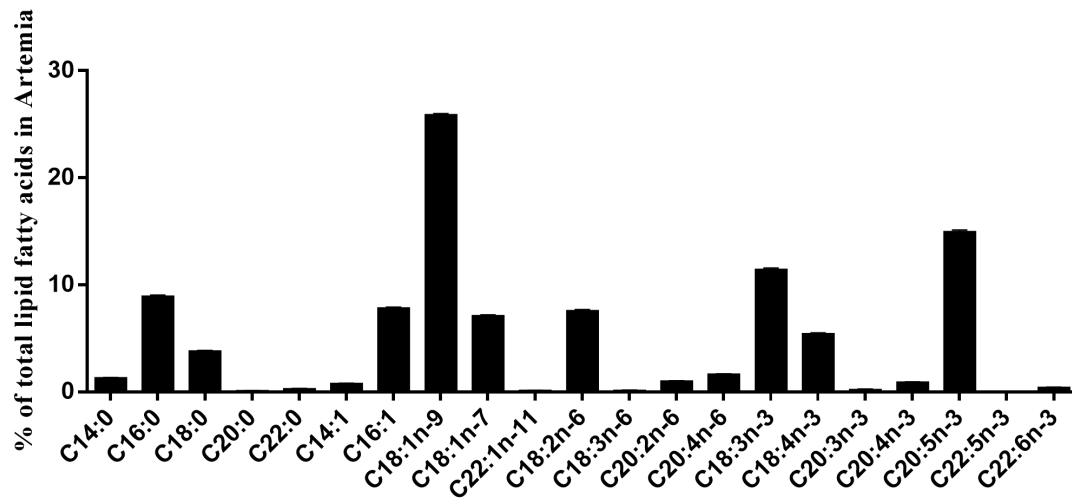


Fig. S6. Fatty acid composition of *Artemia salina*.