Supplementary information

Supplementary table 1

Primers for qRT-PCR analysis.

Genes	Genes abbreviation	Accession No.	Primers[a]	Sequence (5' to 3')	Primer efficiency (%)	Correlation coefficients
β-actin	*β-actin*	MH181804	Lm.actβ.qF	CAACTGGGATGACATGGAGAAG	99.68	0.9978
			Lm.actβ.qR	TTGGCTTTGGGGTTCAGG		
Bone Morphogenetic Protein 2	*BMP2*	OR245259	Lm.BMP2.qF	AGGCAAAACGACCCAGCA	101.27	0.9984
			Lm.BMP2.qR	TCGCCGAGTGTCCAGCAG		
Bone Morphogenetic Protein 4	*BMP4*	OR245260	Lm.BMP4.qF	CCCCGAGAGGTCAGCCAG	104.56	0.9986
			Lm.BMP4.qR	CGTGATTAGCTGCCCTGGT		
Fibroblast growth factor 1	*FGF1*	OR245263	Lm.FGF1.qF	CCTGTTTTCTCTCGTGTCTCAG	94.85	0.9974
			Lm.FGF1.qR	CTGCCTGCCACCACTCACA		
Fibroblast growth	*FGF2*	OR245264	Lm.FGF2.qF	TGACGGGGGAGTGGATGGA	96.54	0.9982

factor 2			Lm.FGF2.qR	CCAGTCCGCTTCAGTGCC		
CCAAT enhancer binding protein α	*C/EBPα*	OR245261	Lm.C/EBPα.qF	CCCTCCGGCTACAGAGACC	105.21	0.9966
			Lm.C/EBPα.qR	ACCGACTCGTACTCTCCGT		
Peroxisome proliferator-activated receptor γ	*PPARγ*	OR245266			101.35	0.9984
			Lm.PPARγ.qF	CGAAGAGCACCTGACCAACA		
			Lm.PPARγ.qR	CTTGTGAATGCGACACTGAAGA		
EBF transcription factor 1	*EBF1*	OR245262	Lm.EBF1.qF	AATAACGGGATTCATTACCGGCTG	102.88	0.9978
			Lm.EBF1.qR	CCTGGAACCTTCTCATGTCTCTT		
Krueppel-like factor 15	*KLF15*	OR245265	Lm.KLF15.qF	GCCCTGGAGAGGAGGAGG	103.19	0.9989
			Lm.KLF15.qR	CTGCATGGTAGAGGGGACGC		

Supplementary table 2

The amino acids profiles of different food fish species.

Amino acids	Spotted seabass[a]	Atlantic salmon[a]	Tilapia[a]	European seabass[a]	Rainbow trout[a]	Sardine[a]
Thr	0.05	0.05	0.02	0.07	0.06	0.2
Val	0.05	0.05	0.02	0.06	0.05	0.02
Met	0.02	0.02	0.01	0.03	0.04	0.01
IIe	0.05	0.04	0.06	0.05	0.05	0.06
Leu	0.09	0.08	0.04	0.08	0.10	0.03
Phe	0.04	0.04	0	0.05	0.04	0.02
Lys	0.1	0.09	0.04	0.10	0.09	0.05
His	0.02	0.03	0.01	0.03	0.03	0.33
Asp	0.11	0.1	0.11	0.10	0.12	0.03
Ser	0.04	0.05	0.01	0.04	0.04	0
Glu	0.16	0.14	0.08	0.15	0.14	0.03
Gly	0.06	0.07	0.02	0.06	0.06	0.03
Ala	0.07	0.07	0.03	0.05	0.06	0.01
Cys	0.01	0.01	0	0	0	0
Tyr	0.03	0.04	0.02	0.04	0.04	0.02
Arg	0.06	0.07	0.03	0.07	0.06	0.13
Pro	0.03	0.05	0	0.03	0.03	0.02
ΣEAAs	**0.42**	**0.40**	**0.33**	**0.52**	**0.40**	**0.72**
ΣNEAAs	**0.57**	**0.60**	**0.65**	**0.48**	**0.59**	**0.27**
EAAs/NEAAs	**0.74**	**0.67**	**0.51**	**1.07**	**0.68**	**2.67**

[a]. Data are expressed as the ratio of amino acid to total amino acids.

Supplementary table 3

The primary fatty acids profiles of different food fish species.

Fatty acids	Spotted seabass[a]	Atlantic salmon[a]	Tilapia[a]	European seabass[a]	Rainbow trout[a]	Sardine[a]
C14:0	0.01	0.01	0.01	0.01	0.06	0.04
C16:0	0.2	0.36	0.18	0.39	0.25	0.29
C18:0	0.07	0.09	0.05	0.1	0.07	0.1
Σ SFA	**0.28**	**0.46**	**0.24**	**0.50**	**0.38**	**0.43**
C16:1	0.03	0.12	0.03	0	0.11	0
C18:1 n-9c	0.26	0.15	0.37	0.39	0.26	0.04
C20:1	0.01	0.02	0.01	0	0.02	0.01
C22:1n9	0.02	0.03	0	0	0	0
Σ MUFAs	**0.32**	**0.32**	**0.41**	**0.39**	**0.39**	**0.05**
C18:2 n-6c(LA)	0.27	0.03	0.15	0.1	0.04	0.03
C18:3 n-3	0.02	0.01	0.11	0	0.04	0.01
C18:3 n-6	0	0	0.01	0	0	0
C20:3 n-6	0.007	0	0.01	0	0	0.03
C20:4 n-6	0.02	0.02	0.02	0.01	0	0.05
C20:5 n-3(EPA)	0.03	0.03	0	0	0.05	0.15
C22:6 n-3(DHA)	0.07	0.12	0.04	0.01	0.09	0.25
Σ PUFAs	**0.42**	**0.21**	**0.34**	**0.12**	**0.22**	**0.52**
Σ MUFAs+ Σ PUFAs	**0.74**	**0.53**	**0.75**	**0.51**	**0.61**	**0.57**

[a]. Data are expressed as the ratio of fatty acid to total fat.

Supplementary table 4

Amino-acid profile of spotted seabass flesh from different body portions (g/100g).

| Amino acids	Dorsal[a]	Lateral[a]	Ventral[a]	Tail[a]
Asp	1.90±0.02	1.85±0.03	1.76±0.16	1.83±0.17
Thr	0.87±0.01	0.85±0.02	0.82±0.07	0.87±0.09
Ser	0.73±0.02	0.72±0.01	0.70±0.06	0.74±0.08
Glu	2.83±0.05	2.75±0.03	2.61±0.27	2.77±0.24
Gly	1.05±0.02	1.04±0.02	1.02±0.14	1.09±0.15
Ala	1.18±0.01	1.14±0.04	1.11±0.09	1.15±0.13
Cys	0.14±0.01	0.13±0.03	0.13±0.01	0.14±0.01
Val	0.89±0.01	0.87±0.02	0.80±0.05	0.88±0.09
Met	0.39±0.04	0.35±0.02	0.34±0.10	0.36±0.04
IIe	0.83±0.004	0.80±0.01	0.75±0.06	0.80±0.09
Leu	1.53±0.01	1.49±0.03	1.42±0.13	1.49±0.16
Tyr	0.61±0.02	0.61±0.01	0.59±0.05	0.63±0.05
Phe	0.78±0.02	0.75±0.01	0.73±0.05	0.74±0.04
Lys	1.79±0.02	1.73±0.03	1.63±0.13	1.72±0.15
His	0.40±0.005	0.39±0.01	0.35±0.04	0.39±0.03
Arg	1.07±0.005	1.05±0.01	1.01±0.09	1.08±0.12
Pro	0.59±0.02	0.59±0.02	0.59±0.06	0.64±0.07

[a]. Data are expressed as means ± standard error.

Supplementary table 5

Fatty acid profile of spotted seabass flesh from different body portions (g/100g).

Fatty acids	Dorsal[a]	Lateral[a]	Ventral[a]	Tail[a]
C14:0	0.01±0.0003	0.01±0.003	0.02±0.02	0.01±0.002
C16:0	0.10±0.002	0.21±0.06	0.20±0.02	0.20±0.005
C18:0	0.07±0.002	0.05±0.003	0.04±0.04	0.05±0.01
C16:1	0.03±0.001	0.04±0.01	0.05±0.001	0.04±0.01
C18:1 n-9c	0.26±0.008	0.29±0.02	0.32±0.01	0.30±0.05
C20:1	0.01±0.0005	0.01±0.002	0.01±0.005	0.01±0.001
C22:1 n-9	0.02±0.001	0.02±0.008	0.01±0.005	0.01±0.001
C18:2 n-6c	0.27±0.009	0.29±0.02	0.29±0.02	0.28±0.018
C18:3 n-3	0.02±0.002	0.02±0.01	0.03±0.005	0.02±0.001
C18:3 n-6	0.001±0.0001	0.01±0.002	0.01±0.001	0.01±0.001
C20:3 n-6	0.001±0.0001	0.005±0.001	0.005±0.001	0.01±0.005
C20:4 n-6	0.02±0.001	0.01±0.001	0.01±0.005	0.02±0.001
C20:5 n-3	0.03±0.002	0.02±0.006	0.02±0.01	0.03±0.01
C22:6 n-3	0.07±0.002	0.05±0.006	0.03±0.001	0.04±0.001

[a]. Data are expressed as means ± standard error.
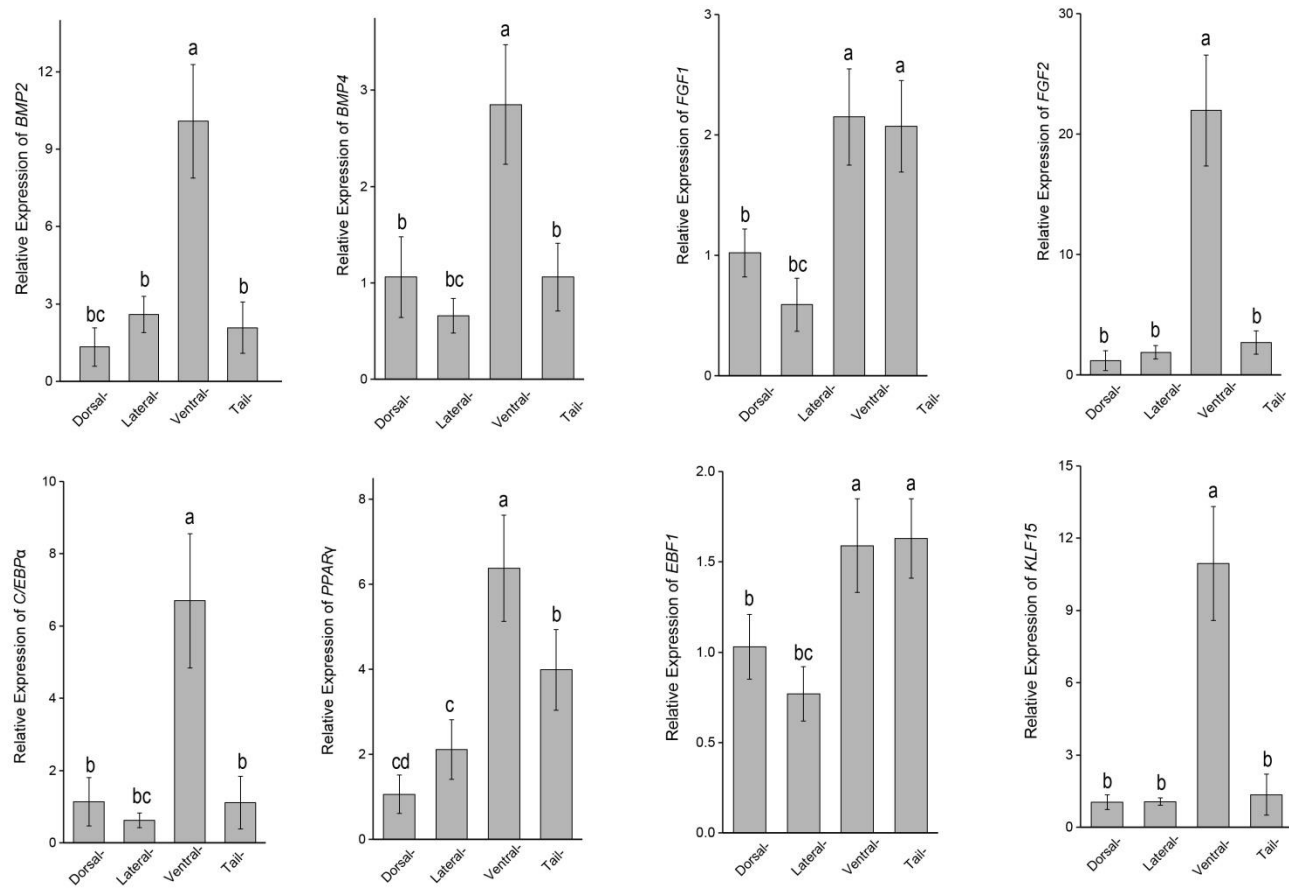
Supplementary fig1. The relative expression of adipogenesis genes in 4 different portion of spotted seabass flesh (n=3). *β-actin* gene was used as the internal reference gene. Data was expressed as the mean ± standard error. Different lowercase letters in the legends indicated significant differences (*p<0.05*).