

Supplementary Materials: *Leptin* Genes in Blunt Snout Bream: Cloning, Phylogeny and Expression Correlated to Gonads Development

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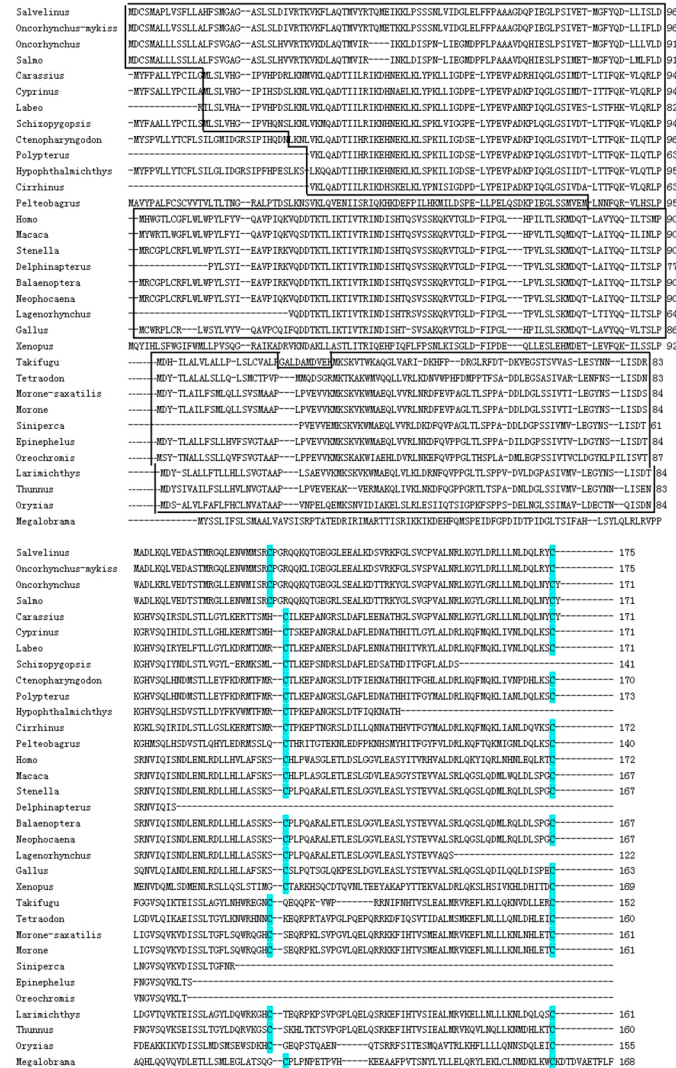


Figure S1. Molecular characterization of vertebrate *leptin*. Comparison of amino acid sequences of the teleosts, amphibians, birds, mammalias and human *leptin*. Multiple sequences alignment was performed by Clustal X. Conserved cysteine and aa. residues involved in the formation were shaded. The highly conserved amino acid sequences between various vertebrates were boxed. The conservative disulfide bridge were colored in blue. GenBank Accession Nos.: *Homo sapiens* (NP_000221), *Macaca mulatta* (NP_001036220), *Lagenorhynchus albirostris* (ABK88255), *Balaenoptera acutorostrata* (AER93242), *Neophocaena phocaenoides asiaeorientalis* (AER93239), *Stenella attenuata* (AER93241), *Delphinapterus leucas* (AGT57736), *Gallus gallus* (AAC60368), *Xenopus laevis* (NP_001089183), *Carassius auratus* (ACL68083), *Cyprinus carpio* “jian” (AGK24955), *Labeo rohita* (ADB22376), *Cirrhinus molitorella* (ADI70505), *Schizopygopsis pylzovi* (AFY23973), *Ctenopharyngodon idella* (ACI32423), *Polypterus senegalus* (ADI70506), *Hypophthalmichthys molitrix* (ACI32424), *Pelteobagrus fulvidraco* (AFO67938), *Salvelinus alpinus* (BAH83535), *Oncorhynchus mykiss* (AGB34181), *Oncorhynchus keta* (AGU36310), *Salmo salar* (ACZ02412), *Takifugu rubripes* (NP_001027897), *Tetraodon nigroviridis* (BAD94451), *Oryzias latipes* (BAD94448), *Thunnus thynnus* (ADT91717), *Morone saxatilis* (AFD34357), *Morone chrysops* (AFD34356), *Epinephelus coioides* (BAI66433), *Oreochromis niloticus* (AER12722), *Siniperca chuatsi* (ACT98260), *Larimichthys crocea* (AGR51148).

S2

Regalechinus	QKQYGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	645
Ctenopharyngodon	QKQYGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	568
Carassius	QKQYGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	645
Danio	QKQYGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	632
Pelteobagrus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	652
Epinephelus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	658
Lateolabrax	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	192
Oreochromis	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	648
Takifugu	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	654
Oryzias	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	661
Oncorhynchus-mykiss	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	666
Mus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	697
Rattus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	697
Macaca	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	697
Mon	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	699
Anas	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	691
Gallus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	690
Taeniopygia	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	686
Xenopus	ENQDQGLLEPQAEFLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	686
TAB		
Regalechinus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	751
Ctenopharyngodon	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	674
Carassius	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	751
Danio	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	749
Pelteobagrus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	759
Epinephelus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	765
Lateolabrax	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	299
Oreochromis	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	751
Takifugu	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	761
Oryzias	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	760
Oncorhynchus-mykiss	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	761
Mus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	808
Rattus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	808
Macaca	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	808
Mon	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	810
Anas	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	802
Gallus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	801
Taeniopygia	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	797
Xenopus	-PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	797
TAB		
Regalechinus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	659
Ctenopharyngodon	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	761
Carassius	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	658
Danio	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	668
Pelteobagrus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	674
Epinephelus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	674
Lateolabrax	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	408
Oreochromis	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	860
Takifugu	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	867
Oryzias	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	869
Oncorhynchus-mykiss	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	894
Mus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	896
Rattus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	896
Macaca	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	896
Mon	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	896
Anas	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	891
Gallus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	888
Taeniopygia	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	884
Xenopus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	885
TAB		
Regalechinus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	932
Ctenopharyngodon	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	955
Carassius	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	932
Danio	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	938
Pelteobagrus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	938
Epinephelus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	994
Lateolabrax	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	521
Oreochromis	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	961
Takifugu	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	961
Oryzias	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	954
Oncorhynchus-mykiss	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	992
Mus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1002
Rattus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	996
Macaca	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	996
Mon	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	975
Anas	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	960
Gallus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	960
Taeniopygia	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	960
Xenopus	ICKEVIER-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	960
TAB		
Regalechinus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1094
Ctenopharyngodon	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	967
Carassius	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1033
Danio	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1040
Pelteobagrus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1046
Epinephelus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1109
Lateolabrax	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1081
Oreochromis	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1082
Takifugu	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1082
Oryzias	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1095
Oncorhynchus-mykiss	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1100
Mus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1131
Rattus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1099
Macaca	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1094
Mon	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1080
Anas	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1080
Gallus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1080
Taeniopygia	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1080
Xenopus	-----PSTFVDEKAGVYGLLEGGVQPTQVFCALMLGGVYGVHSGKISVYTRKAPKCFPALLIETFLVSTYR-VTLFNR-PVLAGPFTCTGLYDNGAGGAYVRETTLAG	1080

Figure S2. Molecular characterization of vertebrate *leptinR*. Comparison of amino acid sequences of the teleosts, amphibians, birds, mammals and human *leptinR*. Multiple sequences alignment was performed by Clustal X. Conserved cysteine and aa. residues involved in the formation were shaded. The highly conserved functional domain amino acid sequences between various vertebrates were boxed and highlighted in yellow. GenBank Accession Nos.: *Carassius carassius* (ADZ75460), *Ctenopharyngodon idella* (AFU35431), *Danio rerio* (NP_001106847), *Epinephelus coioides* (AFU55262), *Lateolabrax japonicus* (AHI85769), *Oncorhynchus-mykiss* (AGO59893), *Oreochromis mossambicus* (AGT28753), *Oryzias melastigma* (ABC86922), *Pelteobagrus fulvidraco* (AFO67946), *Takifugu rubripes* (NP_001124341), *Xenopus* (NP_001037866), *Mus musculus* (AAA93014), *Rattus norvegicus* (NP_036728), *Anas platyrhynchos* (ACF17729), *Gallus* (NP_989654), *Taeniopygia guttata* (AFK25169), *Macaca mulatta* (NP_001027991), *Homo sapiens* (AAC23650).

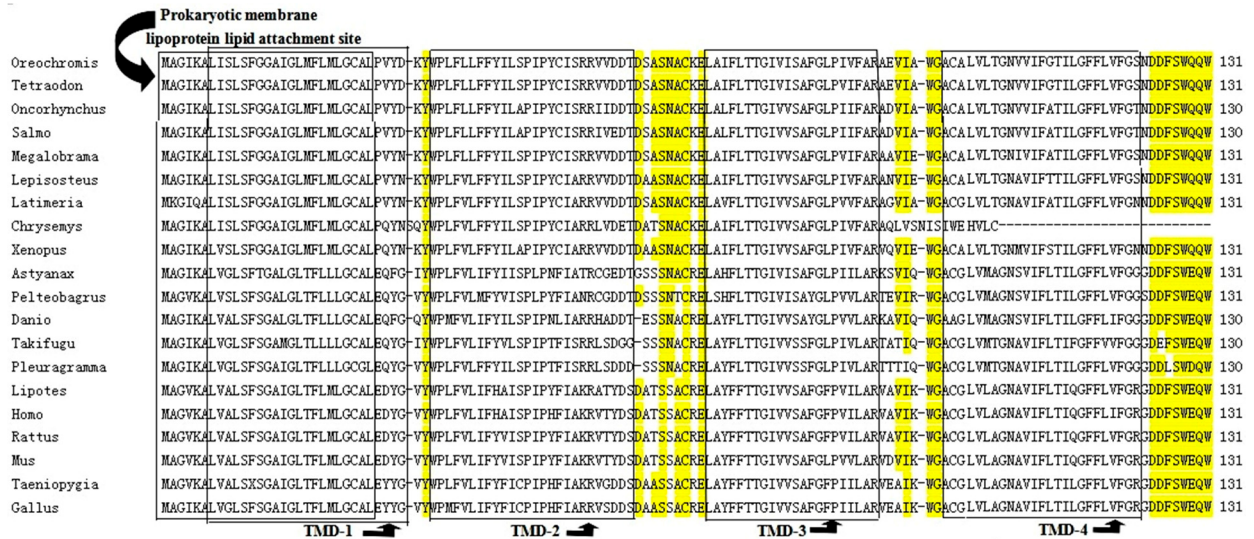


Figure S3. Molecular characterization of vertebrate *leprot11*. Comparison of amino acid sequences of the teleosts, amphibians, birds, mammals and human *leprot11*. Multiple sequences alignment was performed by Clustal X. Conserved cysteine and aa.residues involved in the formation were shaded. The highly conserved functional domain amino acid sequences between various vertebrates were boxed and marked in yellow. GenBank Accession Nos.: *Homo sapiens* (AAH56250), *Lipotes vexillifer* (XP_007460146), *Rattus norvegicus* (AAH62003), *Mus musculus* (AAH04744), *Gallus* (NP_001007959), *Taeniopygia guttata* (XP_004174372), *Takifugu rubripes* (NP_001129621), *Pleuragramma antarctica* (AES12469), *Danio rerio* (NP_001017787), *Astyanax mexicanus* (XP_007250701), *Pelteobagrus fulvidraco* (AFN08752), *Chrysemys picta bellii* (XP_005308635), *Lepisosteus oculatus* (XP_006629222), *Latimeria chalumnae* (XP_006010007), *Oreochromis niloticus* (XP_003443415), *Tetraodon nigroviridis* (CAG04698), *Oncorhynchus mykiss* (ACO07979), *Salmo salar* (NP_001139931), *Xenopus laevis* (NP_001079518).

Table S1. The expression levels of *M. amblycephala leptin*, *leptinR* and *leprotl1* in the different tissues during the developmental periods of gonads (mean $\pm$ SE). The β -actin was used as an internal control to calibrate the cDNA template for all the samples. Values with one asterisk mean significantly different between females and males at $p < 0.05$ and two asterisks at $p < 0.01$.

Stage	Tissues	<i>Leptin</i>		<i>LeptinR</i>		<i>Leprotl1</i>	
		♀	♂	♀	♂	♀	♂
I	Gonad	0.00004 $\pm$ 0.00000	0.00069 $\pm$ 0.00011 **	0.00024 $\pm$ 0.00000	0.00791 $\pm$ 0.00004 **	0.29260 $\pm$ 0.01450 **	0.01232 $\pm$ 0.00084
	Brain	0.00002 $\pm$ 0.00000	0.00002 $\pm$ 0.00000	0.00256 $\pm$ 0.00104 **	0.00146 $\pm$ 0.00029	0.13472 $\pm$ 0.01431	0.13513 $\pm$ 0.00572
	Liver	0.00227 $\pm$ 0.00220 **	0.00012 $\pm$ 0.00001	0.01685 $\pm$ 0.00054 **	0.00160 $\pm$ 0.00028	0.03017 $\pm$ 0.00806	0.03661 $\pm$ 0.00498
II	Gonad	0.00002 $\pm$ 0.00000 *	0.00001 $\pm$ 0.00000	0.00007 $\pm$ 0.00000	0.00076 $\pm$ 0.00005 **	0.19489 $\pm$ 0.00321 **	0.10926 $\pm$ 0.00355
	Brain	0.00538 $\pm$ 0.00075	0.01761 $\pm$ 0.00097 **	0.00256 $\pm$ 0.00104	0.01409 $\pm$ 0.00248 **	0.15579 $\pm$ 0.01780	0.23520 $\pm$ 0.02510
	Liver	0.33466 $\pm$ 0.03921 **	0.00517 $\pm$ 0.00047	0.17830 $\pm$ 0.02288 **	0.00806 $\pm$ 0.00054	0.18250 $\pm$ 0.02898 **	0.01364 $\pm$ 0.00070
III	Gonad	0.00002 $\pm$ 0.00000	0.00071 $\pm$ 0.00010 **	0.00026 $\pm$ 0.00001	0.00230 $\pm$ 0.00009 **	0.15500 $\pm$ 0.00076 **	0.08733 $\pm$ 0.00719
	Brain	0.75896 $\pm$ 0.10136 **	0.01881 $\pm$ 0.00056	0.66882 $\pm$ 0.06486 **	0.01973 $\pm$ 0.00134	9.47115 $\pm$ 0.16127 **	0.69158 $\pm$ 0.01815
	Liver	0.01416 $\pm$ 0.00204 *	0.02808 $\pm$ 0.00425	0.01651 $\pm$ 0.00442	0.01898 $\pm$ 0.00090	0.02690 $\pm$ 0.00569	0.03719 $\pm$ 0.00389
IV	Gonad	0.00000 $\pm$ 0.00000	0.00017 $\pm$ 0.00001 **	0.00007 $\pm$ 0.00001	0.00353 $\pm$ 0.00043 **	0.13534 $\pm$ 0.00236 **	0.08337 $\pm$ 0.00510
	Liver	0.03303 $\pm$ 0.00398	0.07071 $\pm$ 0.00786 **	0.02655 $\pm$ 0.00204	0.02934 $\pm$ 0.00869	0.02301 $\pm$ 0.00258	0.03986 $\pm$ 0.00793
	Pituitary	0.00005 $\pm$ 0.00001	0.00238 $\pm$ 0.00026 **	0.00327 $\pm$ 0.00035	0.00644 $\pm$ 0.00048 **	0.05043 $\pm$ 0.01079	0.06002 $\pm$ 0.00653
	Hypothalamus	0.00002 $\pm$ 0.00000	0.00039 $\pm$ 0.00008 **	0.00175 $\pm$ 0.00011	0.00177 $\pm$ 0.00068	0.06132 $\pm$ 0.00132 **	0.03374 $\pm$ 0.00575
V	Gonad	0.00002 $\pm$ 0.00000 *	0.00001 $\pm$ 0.00000	0.00238 $\pm$ 0.00027 **	0.00023 $\pm$ 0.00002	0.08383 $\pm$ 0.00347	0.07955 $\pm$ 0.00549
	Liver	0.05244 $\pm$ 0.00928	0.05547 $\pm$ 0.00677	0.04631 $\pm$ 0.00957	0.02909 $\pm$ 0.01057	0.04150 $\pm$ 0.00836 **	0.01111 $\pm$ 0.00142
	Pituitary	0.27409 $\pm$ 0.01427	0.30982 $\pm$ 0.02556	0.17942 $\pm$ 0.02390 **	0.00434 $\pm$ 0.00157	2.45742 $\pm$ 0.44028 **	0.03102 $\pm$ 0.00809
	Hypothalamus	0.00109 $\pm$ 0.00011	0.00400 $\pm$ 0.00068 **	0.00364 $\pm$ 0.00047	0.32645 $\pm$ 0.05979 **	0.02967 $\pm$ 0.00426	0.08459 $\pm$ 0.00440 **
VI	Gonad	0.00730 $\pm$ 0.00028	0.01750 $\pm$ 0.00134 **	0.00790 $\pm$ 0.00093	0.01465 $\pm$ 0.00038 **	0.04953 $\pm$ 0.00673	0.15342 $\pm$ 0.01387 **
	Liver	0.07953 $\pm$ 0.00533	0.35823 $\pm$ 0.02554 **	0.06165 $\pm$ 0.00407	0.08643 $\pm$ 0.01226	0.03885 $\pm$ 0.00275	0.03308 $\pm$ 0.01460
	Pituitary	0.26661 $\pm$ 0.01539 *	0.17994 $\pm$ 0.01491	0.18502 $\pm$ 0.02369 **	0.00378 $\pm$ 0.00053	0.10973 $\pm$ 0.04010	0.13869 $\pm$ 0.04312
	Hypothalamus	0.00004 $\pm$ 0.00000	0.00733 $\pm$ 0.00303 **	0.00356 $\pm$ 0.00008	0.22562 $\pm$ 0.05814 **	0.03374 $\pm$ 0.00574	0.03374 $\pm$ 0.00575