

Table S1. Accession numbers and references of the sequences retrieved from the GeneBank.

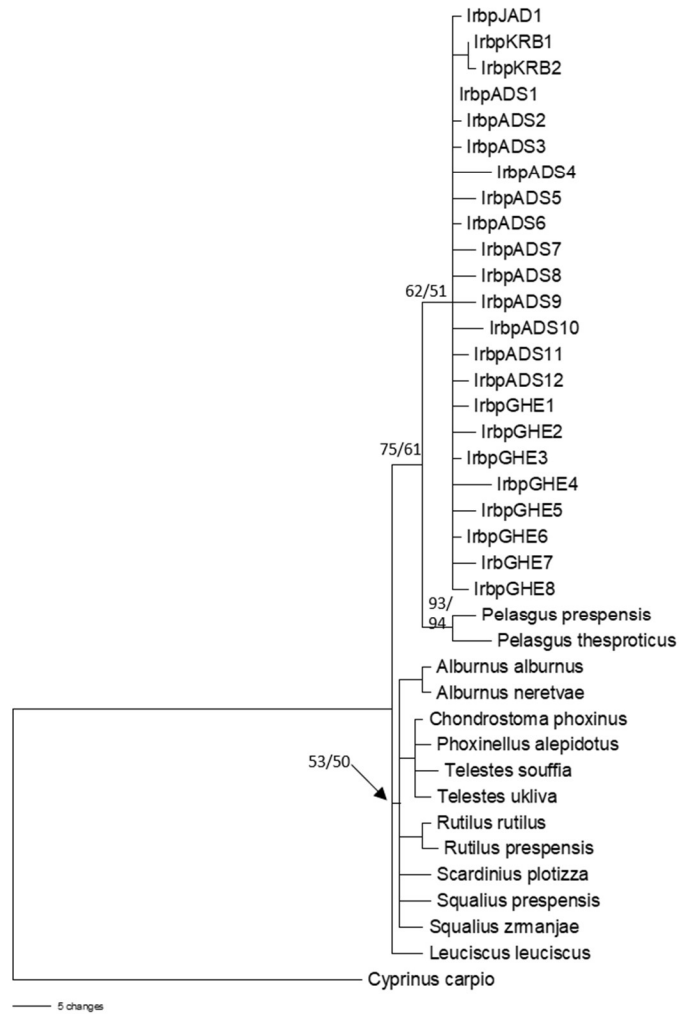
Gene	Code	Accession number	Reference
IRBP	<i>Pelagus thespoticus</i>	MG806520	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Pelagus presensis</i>	MG806518	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Telestes souffia</i>	MG806577	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Telestes ukliva</i>	MG806578	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Chondrostoma phoxinus</i>	MG806498	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Squalius prespensis</i>	MG806564	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Squalius zrmanjae</i>	MG806569	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)

	<i>Scardinius plotizza</i>	MG806552	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Phoxinellus alepidotus</i>	MG806522	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Rutilus rutilus</i>	MG806547	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Rutilus prespensis</i>	MG806546	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Alburnus alburnus</i>	MG806482	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Alburnus neretvae</i>	MG806487	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Leuciscus leuciscus</i>	MG806509	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
	<i>Cyprinus carpio</i>	MG806588	Schönhuth,S., Vukic,J., Sanda,R., Yang,L. and Mayden,R.L.: Phylogenetic relationships and classification of the Holarctic family Leuciscidae (Cypriniformes: Cyprinoidei). Mol. Phylogenet. Evol. (2018)
BA	<i>Telestes souffia</i>	DQ061950	Robalo,J.I., Sousa Santos,C., Levy,A. and Almada,V.C.: Molecular insights on the taxonomic position of the paternal ancestor of the Squalius alburnoides hybridogenetic complex. Mol. Phylogenet. Evol. 39 (1), 276-281 (2006)
	<i>Chondrostoma phoxinus</i>	DQ447723	Robalo,J.I., Almada,V.C., Levy,A. and Doadrio,I.: Re-examination and phylogeny of the genus Chondrostoma based on mitochondrial and nuclear data and the definition of 5 new genera. Mol. Phylogenet. Evol. 42 (2), 362-372 (2007)

	<i>Chondrostoma prespensis</i>	DQ061944	Robalo,J.I., Sousa Santos,C., Levy,A. and Almada,V.C.: Molecular insights on the taxonomic position of the paternal ancestor of the Squalius alburnoides hybridogenetic complex. Mol. Phylogenet. Evol. 39 (1), 276-281 (2006)
	<i>Squalius pyrenaicus</i>	DQ150327	Sousa-Santos,C., Collares-Pereira,M.J. and Almada,V.C.: Complete substitution of the typical Squalius pyrenaicus-like mtDNA of the Squalius alburnoides complex (Cyprinidae) in an independent Iberian drainage J. Fish Biol. 68 (SB), 292-301 (2006)
	<i>Scardinius erythrophthalmus</i>	DQ061949	Robalo,J.I., Sousa Santos,C., Levy,A. and Almada,V.C.: Molecular insights on the taxonomic position of the paternal ancestor of the Squalius alburnoides hybridogenetic complex. Mol. Phylogenet. Evol. 39 (1), 276-281 (2006)
	<i>Rutilus rutilus</i>	DQ061948	Robalo,J.I., Sousa Santos,C., Levy,A. and Almada,V.C.: Molecular insights on the taxonomic position of the paternal ancestor of the Squalius alburnoides hybridogenetic complex. Mol. Phylogenet. Evol. 39 (1), 276-281 (2006)
	<i>Alburnus alburnus</i>	MH141618	Sousa-Santos,C., Matono,P., da Silva,J. and Ilheu,M.: Evaluation of potential hybridization between native fish and the invasive bleak Alburnus alburnus. Unpublished.
	<i>Leuciscus idus</i>	DQ061947	Robalo,J.I., Sousa Santos,C., Levy,A. and Almada,V.C.: Molecular insights on the taxonomic position of the paternal ancestor of the Squalius alburnoides hybridogenetic complex. Mol. Phylogenet. Evol. 39 (1), 276-281 (2006)
CR	<i>Alburnus alburnus</i>	AJ388401	Gilles,A., Lecointre,G.: A more accurate phylogeny of european cyprinids based on the mitochondrial control region, unpublished
	<i>Chondrostoma nasus</i>	KJ603527	Hudson,A.G., Vonlanthen,P. and Seehausen,O.: Population structure, inbreeding and local adaptation within an endangered riverine specialist: the nase (Chondrostoma nasus). Conserv. Genet. (2014)

<i>Telestes souffia</i>	AY301917	Salzburger,W., Brandstatter,A., Gilles,A., Parson,W., Hempel,M., Sturmbauer,C. and Meyer,A.: Phylogeography of the vairone (<i>Leuciscus souffia</i> , Risso 1826) in Central Europe. Mol. Ecol. 12 (9), 2371-2386 (2003)
<i>Telestes muticellus</i>	AJ388399	Gilles,A. and Lecointre,G.: A more accurate phylogeny of european cyprinids based on the mitochondrial control region, unpublished.
<i>Rutilus rubilio</i>	AJ388400	Gilles,A. and Lecointre,G.: A more accurate phylogeny of european cyprinids based on the mitochondrial control region, unpublished.
<i>Scardinius erythrophthalmus</i>	AJ388403	Gilles,A. and Lecointre,G.: A more accurate phylogeny of european cyprinids based on the mitochondrial control region, unpublished.
<i>Squalius cephalus</i>	AY301921	Salzburger,W., Brandstatter,A., Gilles,A., Parson,W., Hempel,M., Sturmbauer,C. and Meyer,A.: Phylogeography of the vairone (<i>Leuciscus souffia</i> , Risso 1826) in Central Europe. Mol. Ecol. 12 (9), 2371-2386 (2003)
<i>Cyprinus carpio</i>	AY597976	Thai,B.T., Burrridge,C.P., Pham,T.A. and Austin,C.M.: Using mitochondrial nucleotide sequences to investigate diversity and genealogical relationships within common carp (<i>Cyprinus carpio</i> L.). Anim. Genet. 36 (1), 23-28 (2005).

IRBP



BETA ACTIN

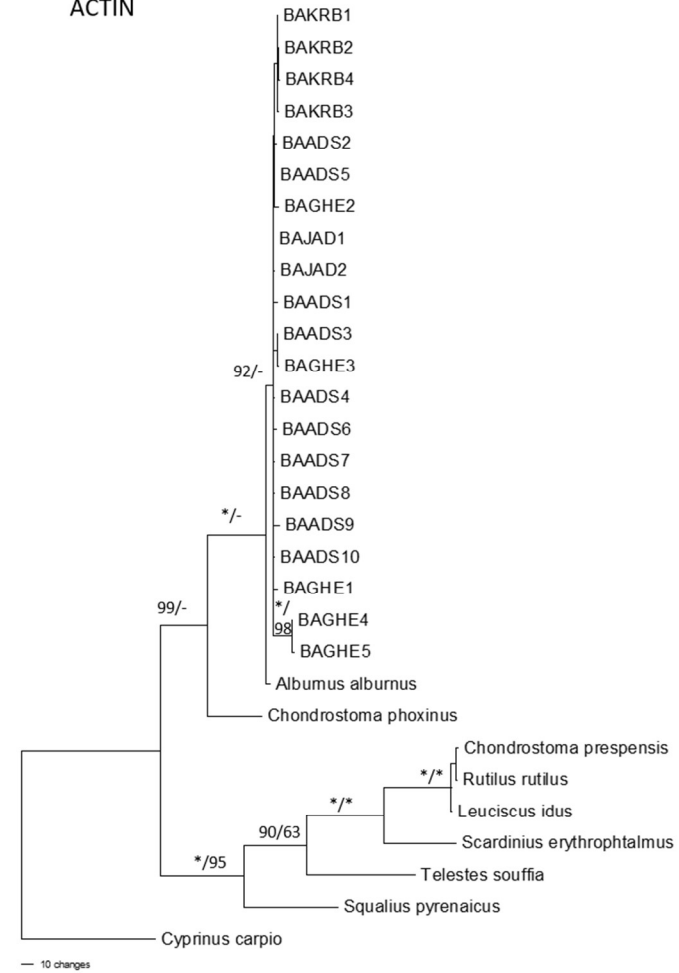


Figure S1. MP phylogenetic trees of *Delminichthys* IRBP and BA sequences. Numbers at nodes represent MP and ML branch support.