

Black porgy	ATG	GAGGACCTTTTACGCGAGCAGAATAGCTGGGCGCAGAACGTTTCATGGGGCAACTTG
Sparus	ATG	GAGGACTTTTACGCGAGCAGAATAGTTGGGCGCAGAACGTTTCATGGAGCAACTTA
Oryzias	ATG	GAGGACCTTTTACTTGAGCTGGAAAGTTGGTCTCATAATGTTTCAGCCAGAAATTCC
Monopterus	ATG	GAGGACATTTTACGCGAGCAGGATAACTGGGCGCAGAAATATTTTCATGGAACAATTCA
C.nevadensis	ATG	GATGAACCTTTATCCGCACAAGATGCTTGGCTTCAGAACCTTTTCTATTTGTAACCTAC
Cyprinodon		-----

Black porgy	AGCCGTGGAAATGAGAGCCATATAGGAAACACGACGGTGAATCCTCTGAAGCGAAACGAG
Sparus	AGCCGTGGAAATGAGAGTCAATTTAGGAAACACGACAGTGAATCCTCTGAAGCGAAACGAA
Oryzias	AGTTGCAGGAACGAAAGTGGTGCAGAAAACAGCACAGTGAACCTTTAAAGCGGAATGAA
Monopterus	AGTCTGGGAAATGACAGCGATTTAGGAAACACCACAGTGAATCCTTTGAAACGAAATGAA
C.nevadensis	AGTCATTTAAACAAGACTCATCCAGGGAACAACGTGGTAAACCTTTAAAGCGAAACGAA
Cyprinodon	-----AACACGTGGTAAACCTTTAAAGCGAAACGAA
	**** . .**.* ** *.*.*.* ** *

Black porgy	GAAGTGGCCAAAGTGAAGTTGCCGTCCTGGTGCTGGTGCTCCTGCTCGCTCTGACCGGC
Sparus	GAGGTGGCCAAAGTGAAGTTGCCGTCCTGGTGCTGGTGCTCCTGCTCGCTCTGACCGGC
Oryzias	GAAGCAGCCAAAGTGGAGGTGACCGTCCTGGTCTGGTGCTGTTGTTCTCGCTCTCATGGGC
Monopterus	GAAGTGGCCAAAGTGAAGTTACCGTCCTGGTGCTGGTGCTGCTGCTCGCTTTGACTGGC
C.nevadensis	GAAGTGGCCAAAGTGAAGTTACTGTCTGGTGCTGGTGCTTTTGCTGGCTCTGACGGGT
Cyprinodon	GAAGTGGCCAAAGTGAAGTTACTGTCTGGTGCTGGTGCTTTTGCTGGCTCTGACGGGT
	**.* .*****.* . * ***** * * * * * *

Black porgy	AACCTGTGCGTCCTGTGGGCTATCCACTCCAGCAAGCACAGCCAGTCTCGGATGTATTTTC
Sparus	AACCTGTGCGTCCTGTGGGCTATCCACGCCACCAAGCACAGCCAGTCTCGGATGTATTTTC
Oryzias	AACCTGTGCGTCCTGTGGCCATCCACACCACCAAGCACAGTCACTCCCGGATGTATTAC
Monopterus	AACCTGTGCGTCCTGTGGGCTATTAACACCACCAAGCACAGCCAGTCTCGGATGTATTAT
C.nevadensis	AACCTGTGCGTCCTGTGGGCTATCCACACCACCAAGCACAGCAAGTCTCGGATGTATTAC
Cyprinodon	AACCTGTGCGTCCTGTGGGCTATCCACACCACCAAGCACAGCAAGTCTCGGATGTATTAC
	***** ** * * * .** * * ***** . * ** *****;

Black porgy	TTTCATGAAGCACCTGAGCATCGCGGACCTCGTCGTTGCAGTGTTCAGGTCTTACCGCAG
Sparus	TTTCATGAAGCACCTGAGCATCGCGGACCTCGTCGTTGCAGTGTTCAGGTCTTACCGCAG
Oryzias	TTTCATGAACACCTGAGCATTCGAGACCTTGTGGTTGCAGTCTTCAAGTTTACCGCAG
Monopterus	TTTATGAACACCTGAGCATCGCAGACCTTGTGTTGCAATCTTCAAGTTTACCAAA
C.nevadensis	TTTCATGAAGCACCTGAGCATCGCAGATCTTGTGTGGCCGTTTTCAGGTCTGCCGCAA
Cyprinodon	TTTCATGAAGCACCTGAGCATCGCAGATCTTGTGTGGCCGTTTTCAGGTCTGCCGCAA
	** *****.***** **.* ** * * * * * . * *****.* *.*.*.

Black porgy	CTCATCTGGGACATCACGTTTCGCTTCTATGGGCCGGATTTGCTGTGCAGGCTGGTGAAA
Sparus	CTCATCTGGGATATCACATTTTCGCTTCTATGGACCGGATTTGCTGTGCAGGCTGGTGAAA
Oryzias	CTCATCTGGGACATCACCTTCCGCTTTTACGGACCTGACATTCTGTGCAGGCTGGTCAAG
Monopterus	CTCATTTGGGATATCACATTTTCGCTTCTACGGCCCGGATTCGCTGTGCAGATTGGTCAAA
C.nevadensis	CTCATTTGGGACATAACATTTTCGCTTTTACGGACCAGATATTATCTGCAGGCTCGTCAAA
Cyprinodon	CTCATTTGGGACATAACATTTTCGCTTTTACGGACCAGATATTATCTGCAGGCTCGTCAAA
	***** **.* ** * * * * * *.*.* ** : . * *****. * * * * .

Black porgy	TACCTCCAGGTCGTGGGCATGTTTCGCTCCACCTACATGCTCGTCTGATGTCCATCGAC
Sparus	TACCTCCAGGTCGTGGGCATGTTTCGCTCCACCTACATGCTCGTCTGATGTCCATCGAC
Oryzias	TATCTCCAGGTCGTGGGTATGTTTGCCTTCCACCTACATGCTGGTGCTGATGTCCGTGAT
Monopterus	TACCTCCAGGTCGTGGGTATGTTTGCATCTACTTACATGCTTGTCTGATGTCCGTGAT
C.nevadensis	TACCTCCAAGTTGTGGGCATGTTTGCCTCCACCTACATGCTGGTCTGATGTCCATCGAT
Cyprinodon	TATCTCCAAGTTGTGGGCATGTTTGCCTCCACCTACATGCTGGTCTGATGTCCATCGAT
	** * * *.* *

Black porgy	AGGTGCCTGGCGATCTGCCAGCCTCTCCGCTCCGTGCACAAGAGGAACGATCGCTGTGC
Sparus	AGGTGCCTGGCGATCTGCCAGCCTCTCCGCTCCGTGCACAAGAGGAACGATCGCTGTGC
Oryzias	AGGTGTTTCGGCTATCTGCCCTGCCATTCGCTTCAACAAGAGGAGAGACCGCATCTGC
Monopterus	AGATGCTTAGCAATTTGGCAGCCACTCCGCTCCTTGACACAAGAGAAAGGATCGCTTCTGT
C.nevadensis	AGATGTTTAGCAGTCTGCCAGCCGCTTCCGCTCTGTGCACAAGGGGAAAGATCGCTTCTGT
Cyprinodon	AGATGTTTAGCAGTCTGCCAGCCGCTTCCGCTCTGTGCACAAGGGGAAAGATCGCTTCTGT
	**.* .** . * * * *.* * * * * * * * * * * * * * * * * *

Black porgy	GTGATCGCCTCCTGGATGCTCAGCCTGATATTCAGCTCCCCCTCAAGCCTACATATTCTCC
Sparus	GTGGTCGCCTCCTGGATGCTCAGCCTGATATTCAGCTCCCCCTCAAGCCTACATATTCTCC
Oryzias	GTGATCGCCTCTTGGATGCTCAGTCTTGTTTTCAGCGCCCCGCAAGCCTACATCTTTCT

Monopterus GTGATCACCTCGTGGTCGCTCAGCCTGATATTTAGTACTCCTCAATTATATATATTTTCG  
C.nevadensis GTCATCGGATCCTGGATCCTCAGTCTGGTGTTCAGCACCCCAAGCTTACATCTTTTCT  
Cyprinodon GTCATCGGATCCTGGATCCTCAGTCTGGTGTTCAGCACCCCAAACTTACATCTTTTCT  
\*\* .\*\* . \*\* \*\*\*: \*\*\*\*\* \*\* . \* \*\* \* \* \*\* \* \*\* \*\* \*\* .\*\* \*\*

**Black porgy** TTGAAGGAGGTGGGGACGGCGTGTATGACTGCTGGGGGGACTTTGTGCAGCCGTGGGGA  
Sparus TTGAAGGAGGTGGGGACGGGTGTGTATGACTGCTGGGGGGACTTTGTGCAGCCGTGGGGA  
Oryzias CTAAAGGAGGTGCGGAACGGGTTTACGACTGCTGGGGGGACTTCGTGCATCCTTGGGGT  
Monopterus CTGAAGGAGGTGCGGAACGGGTGTGTATGACTGCTGGGGGAGACTTTGTACAGCCATGGGGT  
C.nevadensis CTCAGGGAGGTGCGGAATGGCGTCTACGACTGCTGGGGGGATTTCGTGCAACCCTGGGGT  
Cyprinodon CTCAGGGAGGTGCGGAATGGCGTCTACGACTGCTGGGGGGATTTCGTGCAACCCTGGGGT  
\* \* .\*\*\*\*\* \*\* . \* \*\* \* \* \* \*\*\*\*\* .\*\* \* \*\* .\*\* \* \* \*\*\*\*\*:

**Black porgy** GCCAAAGCTTACATCACATGGATGAGCCTCAGCATTTACATCTTCCCAGTGGCGATTTTA  
Sparus GCCAAAGCTTACATTACATGGATGAGCCTCAGCATTTACATCTTCCCAGTGGCGATTTTA  
Oryzias GCCAAAGCGTACATCACGTGGATGAGTCTGAGCATCTACATTTCTACCAGTGGCAATTCTA  
Monopterus GCAAAAGCATACGTACATGGATGACTCTCACCATTTACTTGGCTCCCAGTGGCGATTTTA  
C.nevadensis GC AAAAGCCTACATCACATGGATGAGTCTGAGCATCTACATAATTCCAGTTAGGACATTA  
Cyprinodon GCAAAAGCCTACATCACATGGATGAGTCTCAGCATCTACATAATTCCAGTAGCGATATTA  
\*\* .\*\*\*\*\* \*\* . \* \*\* .\*\*\*\*\* \* \* \* \*\* \* \*\*: \* \* \*\*\*\*\* .\*\* .\*\* : \*\*

**Black porgy** AGCGTCTGCTATGGCTTGATATGTTTTCAAAATATGGCAGAATTTCAATTTGAAGACCAGA  
Sparus AGCGTCTGCTATGGCTTGATTTGGTTCAAAAAATGGCAGAATTTCAATTTGAAAAACAAGA  
Oryzias GGGATCTGTTATGGCCTTATATGCTTTAAAAATCTGGGAGAACATCAACATGAAAAACAAG  
Monopterus AGCACCTGCTATGGTTTAAATATGTTTTAAAAATATGGCAGAATTTTGATTTAAAAACAGA  
C.nevadensis AGCATCTGCTACGGTCTGATATGCTTTAAAAATATGGCAGAATATTAATATGAAAAACCAAG  
Cyprinodon GGCATCTGCTACGGTCTGATATGCTTTAAAAATATGGCAGAATATTAATATGAAAAACCAAG  
. \* . \*\* \* \* \* \* \* \*\* : \*\* \* \*\* \* \*\*: .\*\* \* : \* . : .\*\* .\*\* .\*\* .

**Black porgy** AGGGAGCACATCCTGGCCCTGACAGCGAGGCCCTCCAAGGGCGCTCTTCCCCTCACCCGT  
Sparus AGGGAGCACATCCTGGCTCTGACTGCAAGGCCCTCCAAGGGCGCTCTCCCCTCACCCGT  
Oryzias AGAGATCGCTTTGTAGCTGTACATCCAAAG-----GAACTCATCCACTGTCGCGT  
Monopterus AGGGAGCCATTCCTGGCTTTCACTCCCAGAGTCGCCAAAGGTGCTCATCCCCTTTCTCGC  
C.nevadensis AGGGAGCACTTTTGGCTCTGACGCCGAGGCCGTCCAAGAGCGCACATCCACTGTCACGC  
Cyprinodon AGGGAGCACTTTTGGCTCTGACGCCGAGGCCGTCCAAGAGCGCACATCCACTCTCACGC  
\*\* .\*\* \* . : \* \* .\*\* \* \* \* \* \* \* . \* . : \* : \*\* .\*\* : \* \*\*

**Black porgy** GTGAGCAGCGTGGGGCTCATTTCAAAGCGAAGATCCGCACAGTGAAAATGACATTTGTG  
Sparus GTGAGCAGCGTGAGGCTCATTTCAAAGCGAAGATCCGCACAGTGAAAATGACATTTGTG  
Oryzias GTGAGCAGCGTGAGGCTTATCTCAAAGGCCAAAATCCGCACAGTGAAAGATGACATTTGTG  
Monopterus GTGAGCAGCGTGGGGCTCATTTCAAAGCAAAGATGCGCACAGTGAAAATGACATTTGTA  
C.nevadensis GTCAGCAGCGTCAGGCTCATTTCAAAGCCAAGATCCGCACGGTGAAAATGACATTTGTG  
Cyprinodon GTCAGCAGCGTCAGRCTCATTTCAAAGCCAAGATCCGCACGTGTGAAAATGACATTTGTG  
\*\* \*\*\*\*\* . \* \*\* \* \* \* .\*\* .\*\* \* \* \* \*\*\*\*\* \*\*\*\*\* .\*\*\*\*\* .

**Black porgy** GTGGTGGTCGCCTACATAATGTGCTGGACTCCCTTCTTCTTTGTCCAGATGTGGTCTGCA  
Sparus GTGGTGGTCGCCTACATAATGTGCTGGACTCCCTTCTTCTTTGTCCAGATGTGGTCTGCA  
Oryzias GTGGTTATTGCTTACATGTGTGCTGGACTCCCTTTTTCTTCGTCCAGATGTGGTCTGCG  
Monopterus GTGGTCTTGCCTATACTGTATGCTGGACTCCCTTTTTCTTTGTCCAAATGTGGTCCGCA  
C.nevadensis GTGGTTATTGCTTACATCGTATGCTGGACTCCTTTTTCTTTGTTCAGATGTGGTCTGCA  
Cyprinodon GTGGTTATTGCTTACATCGTATGCTGGACTCCTTTTTCTTTGTTCAGATGTGGTCTGCA  
\*\*\*\*\* \* \*\* \* \* \* . \* .\*\*\*\*\* \*\* \*\*\*\*\* \*\* \*\* .\*\*\*\*\* \*\* .

**Black\_porgy** TGGGACCCTGCAGCACCAAGAGAAGACATGGCCTTCATCATCGCCATGTTGCTGGCCAGC  
Sparus TGGGACCCTGCAGCACCAAGAGAAGACATGGCCTTCATCATCGCCATGTTGCTGGCCAGC  
Oryzias TGGGATCCTGCTGCACCAAGAGAAGACATGGCCTTCATCATCGCGATGCTGCTGGCCAGT  
Monopterus TGGGATCCTGCTGCACCAAGAGAAGACACGGCCTTCATCATCGCCATGTTGCTGGCCAGT  
C.nevadensis TGGGATCCAGCTGCACCAAGAGAAGACATGGCCTTCATCATCTCCATGTTGCTTGGCTAGC  
Cyprinodon TGGGATCCAGCTGCACCAAGAGAAGACATGGCCTTCATCATCTCCATGTTGCTTGGCTAGC  
\*\*\*\*\* \*\* .\*\* : \*\*\*\*\* .\*\*\*\*\* \*\*\*\*\* \* \*\* \* \*\* \* \*\* \*

**Black porgy** CTCAACAGCTGCTGTAACCCCTGGATCTACATGTTCTTTGCCGGTCACCTATTCCAGGAC  
Sparus CTCAACAGCTGCTGTAACCCCTGGATCTACATGTTCTTTGCCGGTCACCTGTTCCAGGAC  
Oryzias CTCAACAGCTGCTGTAACCCATGGATCTACATGTTTTTTGCTGGCCACCTCTTCCATGAC  
Monopterus CTCAACAGCTGCTGTAACCCCTGGATCTACCTGTCTTTTCGTGGTCACATGTTCCATGAC  
C.nevadensis CTTAACAGCTGCTGTAATCCCTGGATCTATATGCTTTTTGCCGGTCACCTGTTCCATGAC  
Cyprinodon CTTAACAGCTGCTGTAATCCCTGGATCTATATGCTCTTTGCCGGTCACCTGTTCCATGAC  
\*\* \*\*\*\*\* \*\* \*\*\*\*\* . \* \*\* \* \* \* \* \* .\*\* \*\*\*\*\* \*\* \*

<b>Black porgy</b>	CTGACGCGTTGCTTCTTTTGTGCTGCTGCAGACAGTACCTGACAGCCTCCACCTGCAGCTGC
Sparus	CTGACGCGTTGCTTCTTCTGCTGCTGCAGACAGTACCTGACAGCCTCCACCTGCAGCTGC
Oryzias	CTGATTTCAGTGCTTCTTTCAGCTGCTGTAGACAGTACCTGACAGACTCTTCCCTGTGGCTGT
Monopterus	CTGATGCAGTGCTTCT--GCTGCTGTAGACGGTACCTGACAGACTCTTCCCTGTAGCTGT
C.nevadensis	CTGATAAAGAGCTTCTGCTGCTGCTGCAGAACTATGTTGCAGACTCATCCTGCCATGTC
Cyprinodon	CTGATAAAGAGCTTCTGCTGCTGCTGCAGAACTATGTTGCAGACTCATCCTGCCAATGC
	**** .. :***** ***** **.. ** * .***.*** :**** .
<b>Black porgy</b>	GATCGACCGTGCCGGGCACAAGAGCAGCTCCGCCACTTACGTCATCAAGAACGAGAGCAGC
Sparus	GATCGACCATGCCGGGCACAAGAGCAGCTCAGCCACTTACGTCATCAAGAACGAGAGCAGC
Oryzias	GATGAACAGCGCAGGGACAAGAGCAGCTCCTCCAGCGACGTCATCAAGAATGCCAGAG--
Monopterus	GATCAACGGTGCAAGCAGAAAAGCAACCCGTCCACTTGTGTCATCAAGAACACCAGCAGT
C.nevadensis	AATCAGGAGTGCAGGCACAAGAGAGGTTCTCCACGTTTCGACATCAAAAACGGCAGCAGT
Cyprinodon	AATCAGGAGTGCAGGCACAAGAGAGGCTCCTCCACGTTTCGACATCAAAAACGGCAGCAGT
	.** .. . **..* * **..*.. * *** *:*****.*. **..
<b>Black porgy</b>	CAGAGGGGCCTCACACACACATCCAGCACGGGGGGACTTGGACACTGA
Sparus	CAGAGGAGCCTCACACACACATCCAGCACGGGGGGACTTGGACACTGA
Oryzias	-----AAGCCTCACACACACATCCAGCTTAG-----
Monopterus	CATCGTAGCCTCACATACATATGCAGCGCAGGGTGCCAGGACACTAA
C.nevadensis	ATGAGGAGCTTGACTCACACATCCAGCCTGGGGGGACCCACACACTGA
Cyprinodon	ATGAGGAGCTTGACTCACACATCCAGCCTGGGGGGACCCACACACTGA
	.** * **: *** ** ***** .*

Figure S3. Multiple alignments of the nucleotide sequences of *itr* (black porgy, *Acanthopagrus schlegelii*) with other teleosts. GenBank accession numbers for the nucleotide sequences are follows: gilthead sea bream (*Sparus aurata*, KC195973 *itr*), Asian swamp eel (*Monopterus albus*, MF996357 *itr*), sheepshead minnow (*Cyprinodon variegatus*, KX061748 *itr*), amargosa pupfish (*Cyprinodon nevadensis*, GQ981415 *itr*), medaka (*Oryzias latipes*, AB646240 *itr*). The boxes represent the ATG start codon and underlines represent the stop codon. The symbols “\*”, “:”, and “:” denote the identity, single nucleotide variation, and more than one nucleotide variation among fish species, respectively.