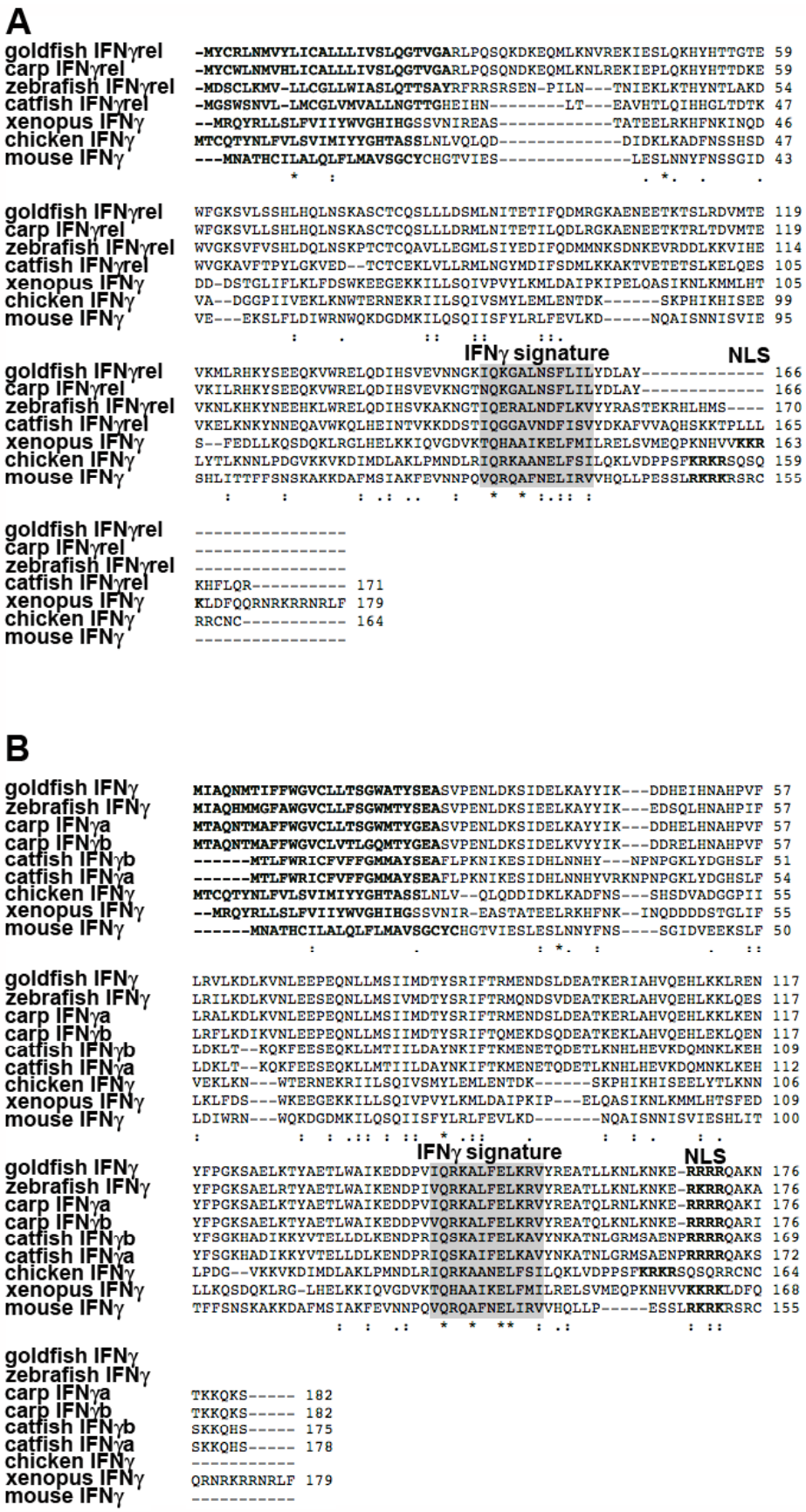
Supplementary figure 1. Protein sequence alignments of IFNγrel (A) and IFNγ (B). Sequence alignments were performed using ClustalW. The signal sequences are in bold face, the IFNg signature sequences are highlighted in grey and indicated overhead and the nuclear localization signals (**NLS**) are bold face with the "NLS" overhead. Fully conserved residues are indicated by an asterisk (*) below, partially conserved and semi-conserved substitutions are represented by ":" and ".", respectively. The GenBank accession numbers for the sequences used are: carp IFNγrel, **AM261214**; catfish IFNγrel, **DQ124249**; goldfish IFNγrel, **GQ149696**; zebrafish IFNγrel, **AB194272**; carp IFNγa, **AM168523**; carp IFNγb, **AM168524**; catfish IFNγa, **DQ124250**; catfish IFNγb, **DQ124251**; chicken IFNγ, **X99774**; goldfish IFNγ, **EU909368**; mouse IFNγ, **ACR22511**; xenopus IFNγ, **ABU54059**; zebrafish IFNγ, **AB158361.**


A
goldfish IFNγrel -MYCRLNMVYLICALLLIVSLQGTVGARLPQSQKDKEQMLKNVREKIESLQKHYHTTGTE 59
carp IFNγrel -MYCWLNMVHLICALLLIVSLQGTVGARLPQSQNDKEQMLKNLREKIEPLQKHYHTTDKE 59
zebrafish IFNγrel -MDSCLKMV-LLCGLLWIASLQTTSAYRFRRSRSEN-PILN---TNIEKLKTHYNTLAKD 54
catfish IFNγrel -MGSWSNVL-LMCGLVMVALLNGTTGHEIHN--------LT---EAVHTLQIHHGLTDTK 47
xenopus IFNγ --MRQYRLLSLFVIIYWVGHIHGSSVNIREAS------------TATEELRKHFNKINQD 46
chicken IFNγ MTCQTYNLFVLSVIMIYYGHTASSLNLVQLQD-------------DIDKLKADFNSSHSD 47
mouse IFNγ ---MNATHCILALQLFLMAVSGCYCHGTVIES--------------LESLNNYFNSSGID 43
goldfish IFNγrel WFGKSVLSSHLHQLNSKASCTCQSLLLDSMLNITETIFQDMRGKAENEETKTSLRDVMTE 119
carp IFNγrel WFGKSVLLSHLHQLNSKASCTCQSLLLDRMLNITETILQDLRGKAENEETKTRLTDVMTE 119
zebrafish IFNγrel WVGKSVFVSHLDQLNSKPTCTCQAVLLEGMLSIYEDIFQDMMNKSDNKEVRDDLKKVIHE 114
catfish IFNγrel WVGKAVFTPYLGKVED--TCTCEKLVLLRMLNGYMDIFSDMLKKAKTVETETSLKELQES 105
xenopus IFNγ DD-DSTGLIFLKLFDSWKEEGEKKILLSQIVPVYLKMLDAIPKIPELQASIKNLKMMLHT 105
chicken IFNγ VA--DGGPIIVEKLKNWTERNEKRIILSQIVSMYLEMLENTDK------SKPHIKHISEE 99
mouse IFNγ VE---EKSLFLDIWRNWQKDGDMKILQSQIISFYLRLFEVLKD-----NQAISNNISVIE 95
IFNγ signature
NLS
goldfish IFNγrel VKMLRHKYSEEQKVWRELQDIHSVEVNNGKIQKGALNSFLILYDLAY---------- 166
carp IFNγrel VKILRHKYSEEQKVWRELQDIHSVEVKNGTNQKGALNSFLILYDLAY---------- 166
zebrafish IFNγrel VKNLKHKYNEEHKLWRELQDIHSVKAKNGTIQERALNDFLKVYYRASTEKRHLHMS---- 170
catfish IFNγrel VKELKNKYNNEQAVWKQLHEINTVKKDDSTIQGGAVNDFISVYDKAFVVAQHSKKTPLLL 165
xenopus IFNγ S--FEDLLKQSDQKLRGLHELKKIQVGDVKTQHAAIKELFMILRELSVMEQPKNHVVKKR 163
chicken IFNγ LYTLKNNLPDGVKKVKDIMDLAKLPMNDLRIQRKAANELFSILQKLVDPPSFKRKRSQSQ 159
mouse IFNγ SHLITTFFSNSKAKKDAFMSIAKFEVNNPQVQRQAFNELIRVVHQLLPESSLRKRKRSRC 155
goldfish IFNγrel ----------
carp IFNγrel ----------
zebrafish IFNγrel ----------
catfish IFNγrel KHFLQR---------- 171
xenopus IFNγ KLDFQQRNRKRRNRLF 179
chicken IFNγ RRCNC---------- 164
mouse IFNγ ----------
B
goldfish IFNγ MIAQNMTIFFWGVCLLTSGWATYSEASVPENLDKSIDELKAYYIK---DDHEIHNAHPVF 57
zebrafish IFNγ MIAQHMMGFAWGVCLLFSGWMTYSEASVPENLDKSIEELKAYYIK---EDSQLHNAHPIF 57
carp IFNγa MTAQNTMAFFWGVCLLTSGWMTYGEASVPENLDKSIDELKAYYIK---DDHELHNAHPVF 57
carp IFNγb MTAQNTMAFFWGVCLVTLGQMTYGEASVPENLDKSIDELKVYYIK---DDRELHNAHPVF 57
catfish IFNγb ------MTLFWRICFVFFGMMAYSEAFLPKNIKESIDHLNNHY---NPNPGKLYDGHSLF 51
catfish IFNγa ------MTLFWRICFVFFGMMAYSEAFLPKNIKESIDHLNNHYVRKNPNPGKLYDGHSLF 54
chicken IFNγ MTCQTYNLFVLSVIMIYYGHTASSLNLV--QLQDDIDKLKADFNS---SHSDVADGGPII 55
xenopus IFNγ --MRQYRLLSLFVIIYWVGHIHGSSVNIR-EASTATEELRKHFNK--INQDDDDSTGLIF 55
mouse IFNγ ------MNATHCILALQLFLMAVSGCYCHGTVIESLESLNNYFNS----SGIDVEEKSLF 50
goldfish IFNγ LRVLKDLKVNLEEPEQNLLMSIIMDTYSRIFTRMENDSLDEATKERIAHVQEHLKKLREN 117
zebrafish IFNγ LRILKDLKVNLEESEQNLLMSIVMDTYSRIFTRMQNDSVDEATKERLAHVQEHLKKLQES 117
carp IFNγa LRALKDLKVNLEEPEQNLLMSIIMDTYSRIFTRMENDSLDEATKERLAHVQEHLKKLKEN 117
carp IFNγb LRFLKDIKVNLEEPEQNLLMSIIMDTYSRIFTQMEKDSQDEATKEKLAHVQEHLEKLQEN 117
catfish IFNγb LDKLT--KQKFEESEQKLLMTIILDAYNKIFTKMENETQDETLKNHLHEVKDQMNKLKEH 109
catfish IFNγa LDKLT--KQKFEESEQKLLMTIILDAYNKIFTKMENETQDETLKNHLHEVKDQMNKLKEH 112
chicken IFNγ VEKLKN---WTERNEKRIILSQIVSMYLEMLENTDK------SKPHIKHISEELYTLKNN 106
xenopus IFNγ LKLFDS---WKEEGEKKILLSQIVPVYLKMLDAIPKIP---ELQASIKNLKMMLHTSFED 109
mouse IFNγ LDIWRN---WQKDGDMKILQSQIISFYLRLFEVLKD-------NQAISNNISVIESHLIT 100
IFNγ signature
NLS
goldfish IFNγ YFPGKSAELKTYAETLWAIKEDDPVIQRKALFELKRVYREATLLKNLKNKE-RRRRQAKN 176
zebrafish IFNγ YFPGKSAELRTYAETLWAIKENDPIVQRKALFELKRVYREATLLKNLKNKE-RKRRQAKA 176
carp IFNγa YFPGKSAELKTYAETLWAIKEDDPVIQRKALFELKRVYREATQLRNLKNKE-RRRRQAKI 176
carp IFNγb YFPGKSAELKTYAETLWAIKEDDPVVQRKALFELKRVYREATQLKNLKNKE-RRRRQARI 176
catfish IFNγb YFSGKHADIKKYVTELLDLKENDPRIQSKAIFELKAVYNKATNLGRMSAENPRRRRQAKS 169
catfish IFNγa YFSGKHADIKKYVTELLDLKENDPRIQSKAIFELKAVYNKATNLGRMSAENPRRRRQAKS 172
chicken IFNγ LPDG--VKKVKDIMDLAKLPMNDLRIQRKAANELFSILQKLVDPPSFKRKRSQSQRRCNC 164
xenopus IFNγ LLKQSDQKLRG-LHELKKIQVGDVKTQHAAIKELFMILRELSVMEQPKNHVVKKRKLDFQ 168
mouse IFNγ TFFSNSKAKKDAFMSIAKFEVNNPQVQRQAFNELIRVVHQLLP-----ESSLRKRKRSRC 155
goldfish IFNγ
zebrafish IFNγ
carp IFNγa TKKQKS----- 182
carp IFNγb TKKQKS----- 182
catfish IFNγb SKKQHS----- 175
catfish IFNγa SKKQHS----- 178
chicken IFNγ ----------
xenopus IFNγ QRNRKRRNRLF 179
mouse IFNγ ----------