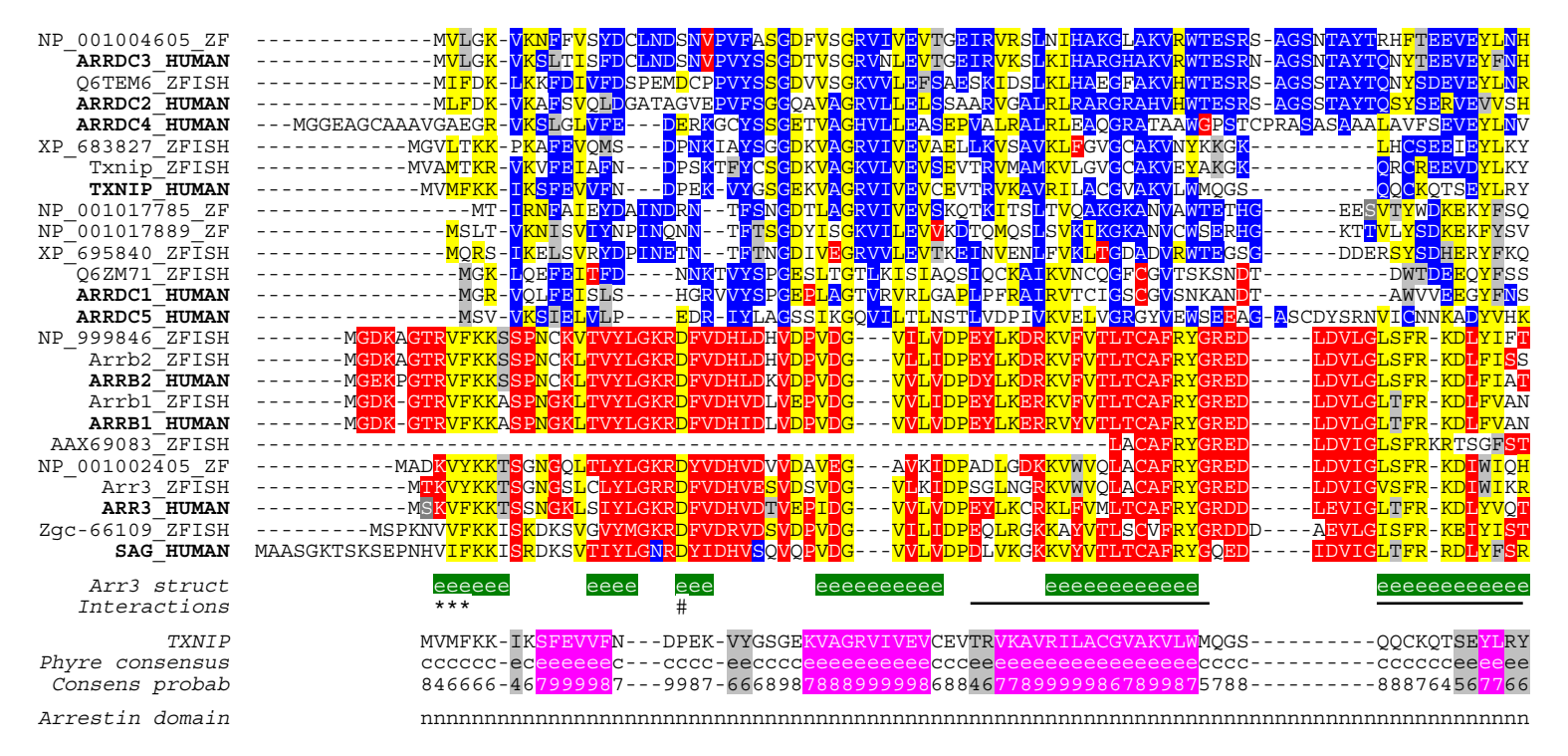
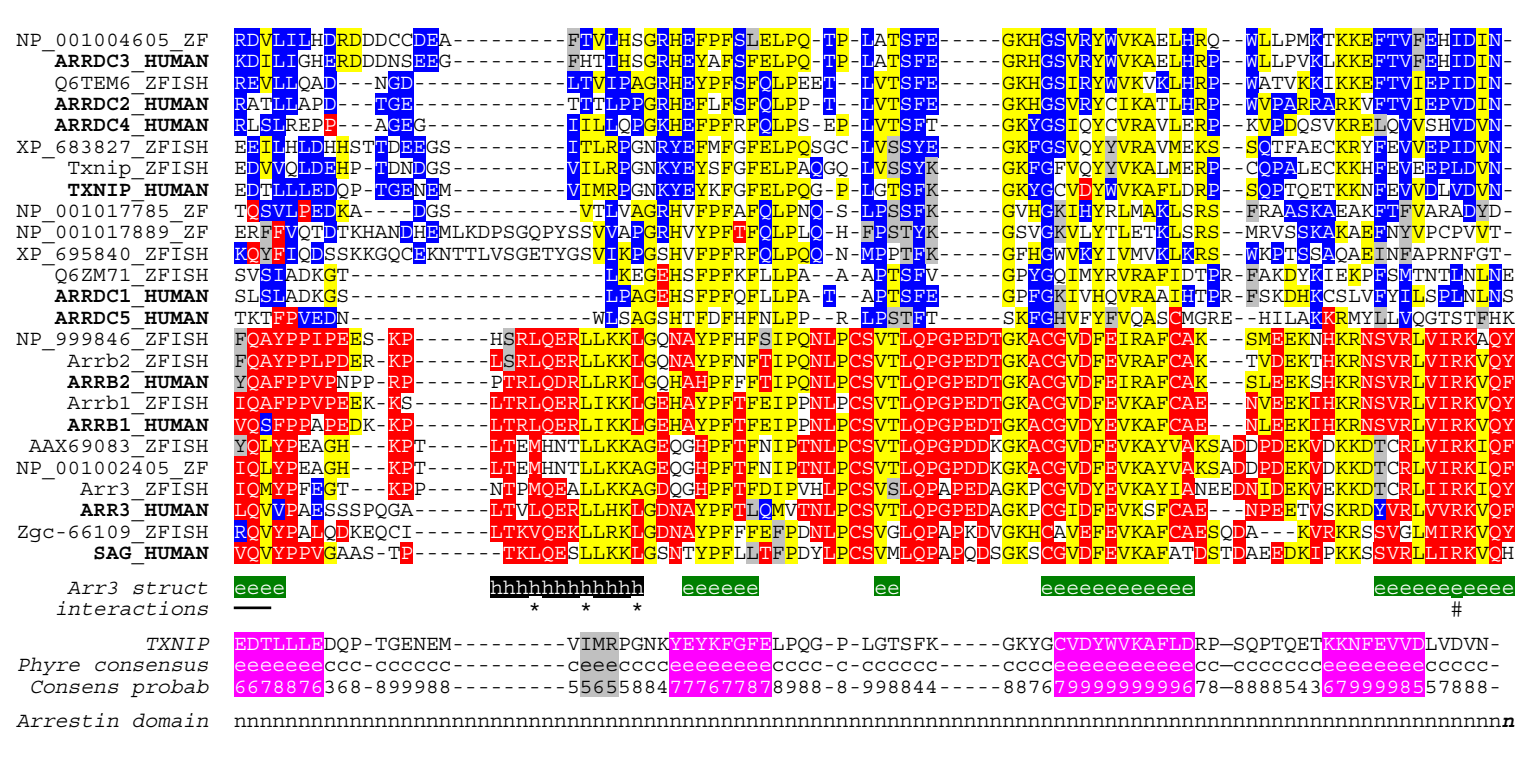
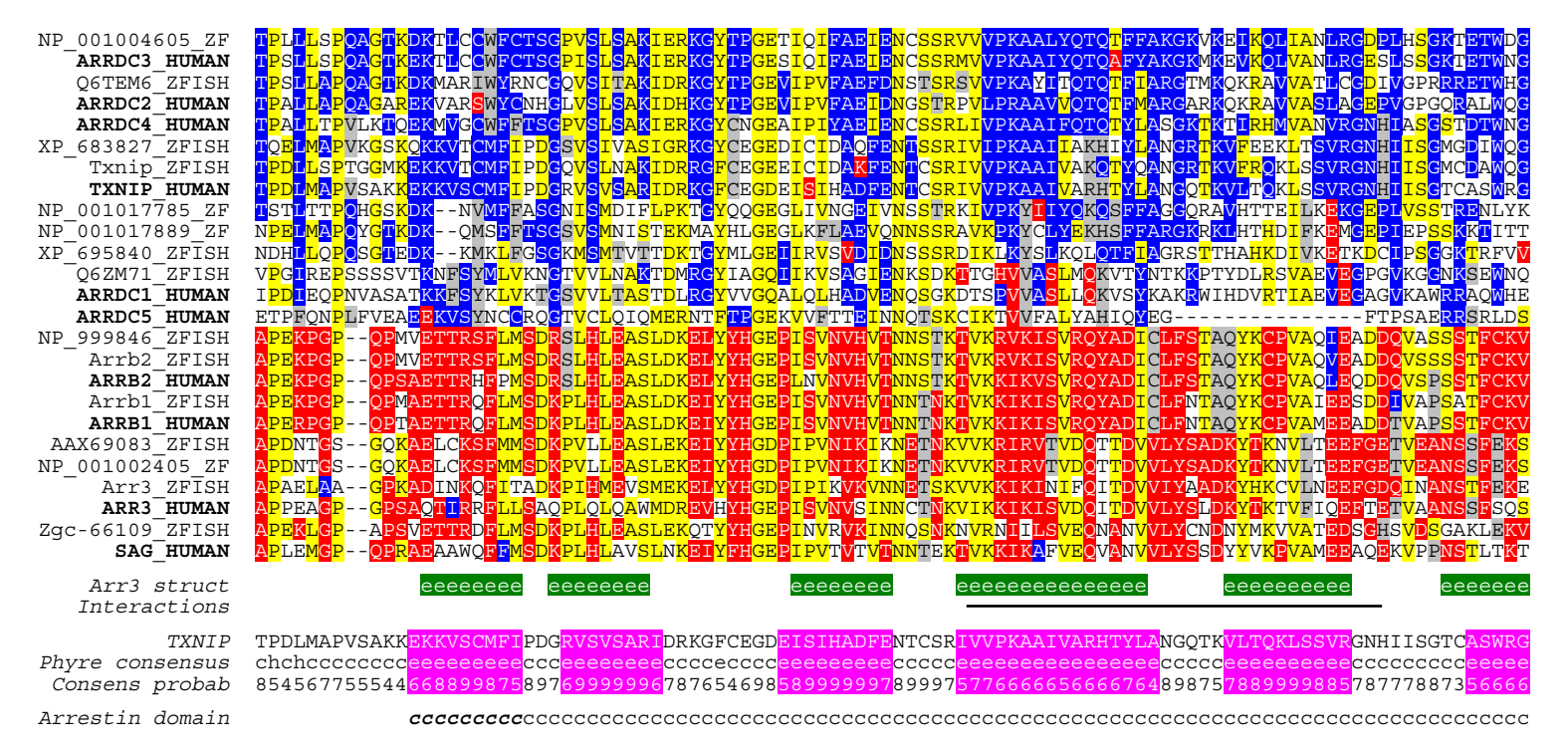
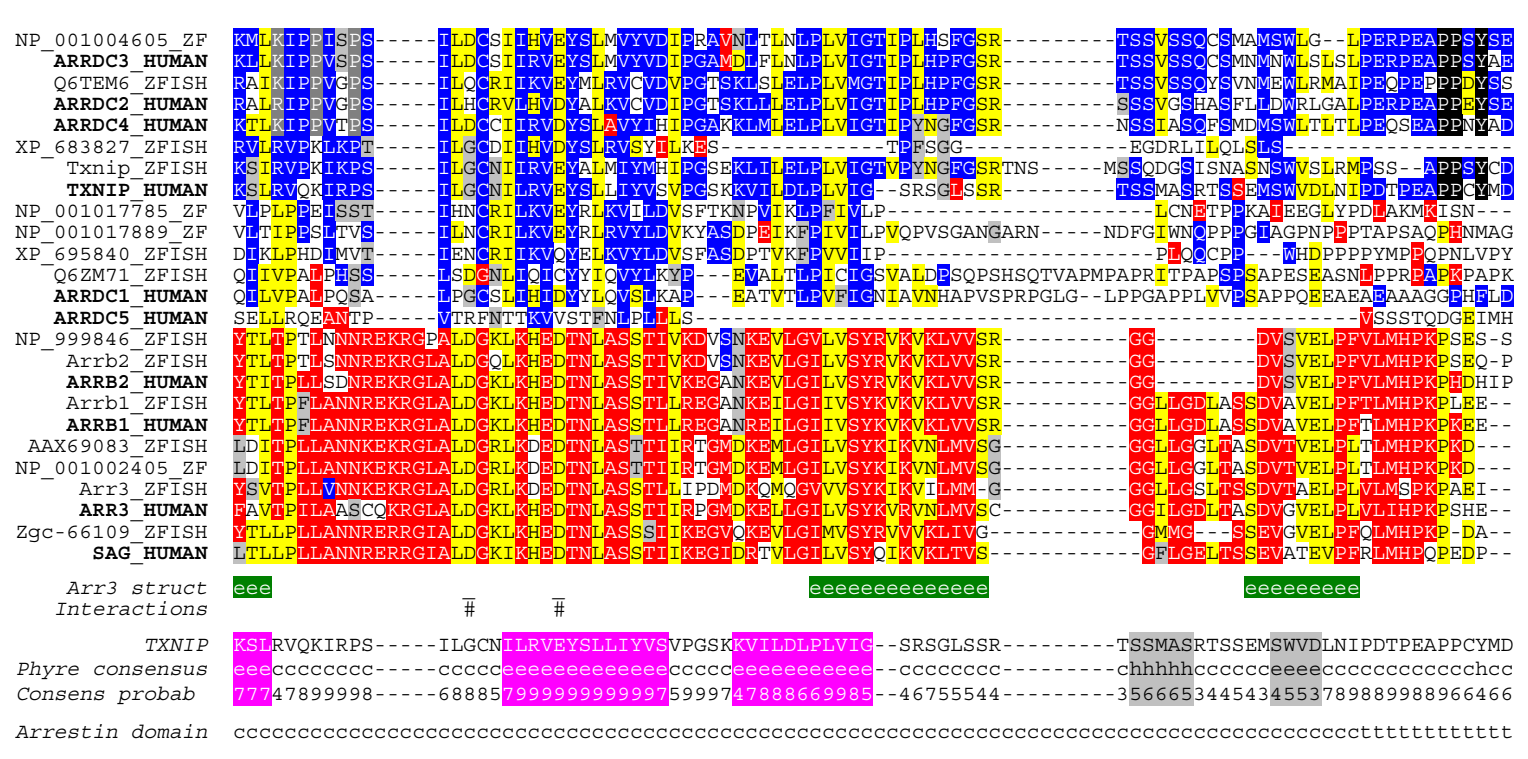
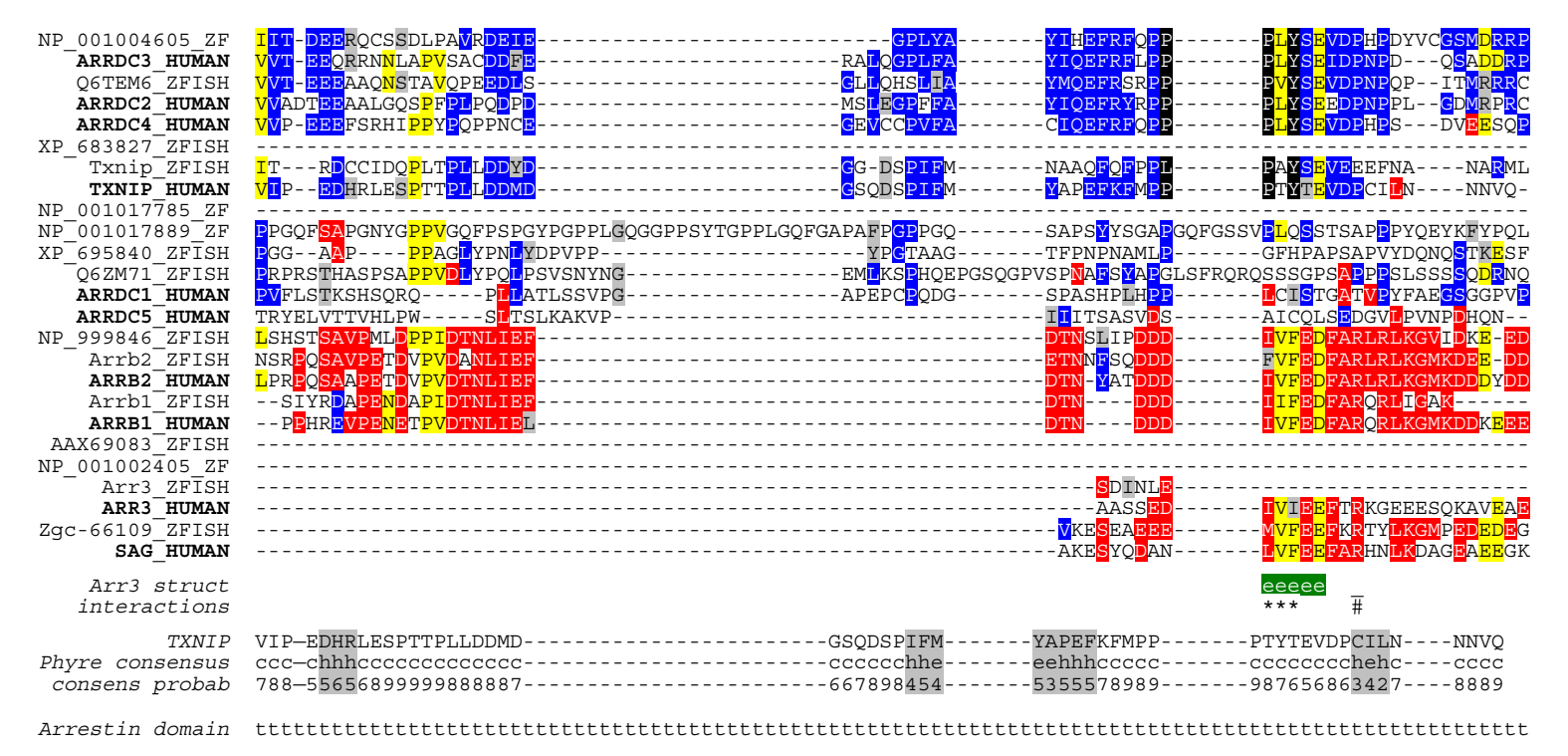
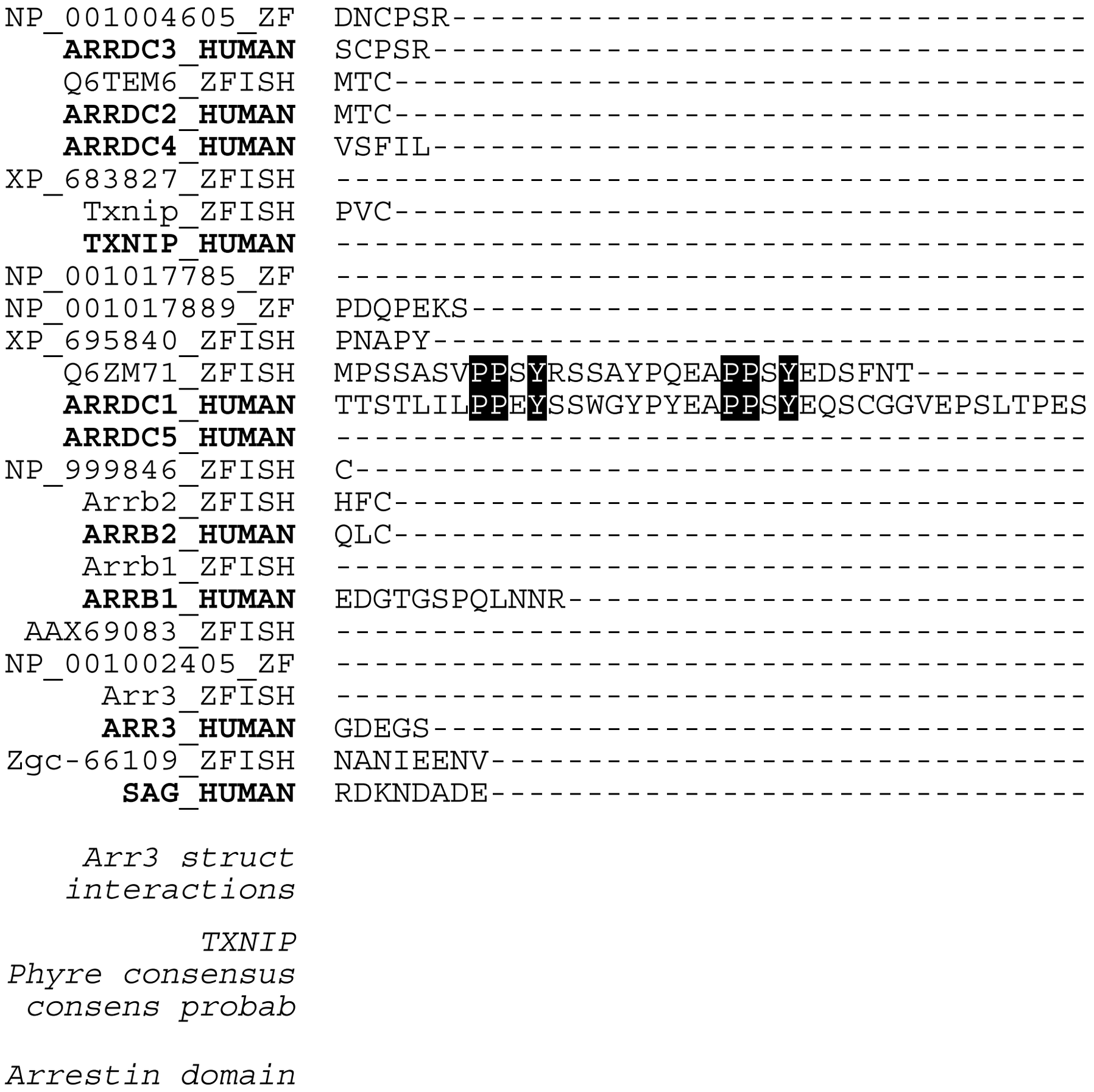

NP_001004605_ZF
ARRDC3_HUMAN
Q6TEM6_ZFISH
ARRDC2_HUMAN
ARRDC4_HUMAN
XP_683827_ZFISH
Txnip_ZFISH
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF
XP_695840_ZFISH
Q6ZM71_ZFISH
ARRDC1_HUMAN
ARRDC5_HUMAN
NP_999846_ZFISH
Arrb2_ZFISH
ARRB2_HUMAN
Arrb1_ZFISH
ARRB1_HUMAN
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN
Zgc-66109_ZFISH
SAG_HUMAN
Arr3 struct
Interactions
TXNIP
Phyre consensus
Consens probab
Arrestin domain


NP_001004605_ZF
ARRDC3_HUMAN
Q6TEM6_ZFISH
ARRDC2_HUMAN
ARRDC4_HUMAN
XP_683827_ZFISH
Txnip_ZFISH
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF
XP_695840_ZFISH
Q6ZM71_ZFISH
ARRDC1_HUMAN
ARRDC5_HUMAN
NP_999846_ZFISH
Arrb2_ZFISH
ARRB2_HUMAN
Arrb1_ZFISH
ARRB1_HUMAN
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN
Zgc-66109_ZFISH
SAG_HUMAN
Arr3 struct
interactions
TXNIP
Phyre consensus
Consens probab
Arrestin domain


NP_001004605_ZF
ARRDC3_HUMAN
Q6TEM6_ZFISH
ARRDC2_HUMAN
ARRDC4_HUMAN
XP_683827_ZFISH
Txnip_ZFISH
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF
XP_695840_ZFISH
Q6ZM71_ZFISH
ARRDC1_HUMAN
ARRDC5_HUMAN
NP_999846_ZFISH
Arrb2_ZFISH
ARRB2_HUMAN
Arrb1_ZFISH
ARRB1_HUMAN
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN
Zgc-66109_ZFISH
SAG_HUMAN
Arr3 struct
Interactions
TXNIP
Phyre consensus
Consens probab
Arrestin domain


NP_001004605_ZF
ARRDC3_HUMAN
Q6TEM6_ZFISH
ARRDC2_HUMAN
ARRDC4_HUMAN
XP_683827_ZFISH
Txnip_ZFISH
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF
XP_695840_ZFISH
Q6ZM71_ZFISH
ARRDC1_HUMAN
ARRDC5_HUMAN
NP_999846_ZFISH
Arrb2_ZFISH
ARRB2_HUMAN
Arrb1_ZFISH
ARRB1_HUMAN
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN
Zgc-66109_ZFISH
SAG_HUMAN
Arr3 struct
Interactions
TXNIP
Phyre consensus
Consens probab
Arrestin domain


NP_001004605_ZF
ARRDC3_HUMAN
Q6TEM6_ZFISH
ARRDC2_HUMAN
ARRDC4_HUMAN
XP_683827_ZFISH
Txnip_ZFISH
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF
XP_695840_ZFISH
Q6ZM71_ZFISH
ARRDC1_HUMAN
ARRDC5_HUMAN
NP_999846_ZFISH
Arrb2_ZFISH
ARRB2_HUMAN
Arrb1_ZFISH
ARRB1_HUMAN
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN
Zgc-66109_ZFISH
SAG_HUMAN
Arr3 struct interactions
eeeee
***
#
TXNIP VIP—EDHRLESPTTPLLDDMD
Phyre consensus ccc—chhhccccccccccccc
consens probab 788—55656899999888887
Arrestin domain


NP_001004605_ZF DNCPSR
ARRDC3_HUMAN SCPSR
Q6TEM6_ZFISH MTC
ARRDC2_HUMAN MTC
ARRDC4_HUMAN VSFIL
XP_683827_ZFISH
Txnip_ZFISH PVC
TXNIP_HUMAN
NP_001017785_ZF
NP_001017889_ZF PDQPEKS
XP_695840_ZFISH PNAPY
Q6ZM71_ZFISH MPSSASVPPSYRSSAYPQEAPPSYEDSFNT
ARRDC1_HUMAN TTSTLILPPEYSSWGYPYEAPPSYEQSCGGVEPSLTPES
ARRDC5_HUMAN
NP_999846_ZFISH C
Arrb2_ZFISH HFC
ARRB2_HUMAN QLC
Arrb1_ZFISH
ARRB1_HUMAN EDGTGSPQLNNR
AAX69083_ZFISH
NP_001002405_ZF
Arr3_ZFISH
ARR3_HUMAN GDEGS
Zgc-66109_ZFISH NANIEENV
SAG_HUMAN RDKNDADE
Arr3 struct interactions
TXNIP
Phyre consensus
consens probab
Arrestin domain

Additional file 4. Human arrestin family compared to select fish arrestins. We include all the high confidence zebrafish arrestins that we could identify, but there may be more [see Additional file 2]. Positions that may be conserved in both classes of vertebrate arrestins are shaded yellow, those specific to alphas are blue, beta are red, potentially notable are light gray, and PY motifs are black. A candidate class I SH3-binding motif (RXXPXXP) conserved in a loop near the center of the C domain of ARRDC2/3/4 is shown by dark gray shading of white letters. The arrestin domains are given at the bottom, n for N domain, c for C and t for Tail; italics show sequence not considered as part of the N and C domains according to Pfam. Shading on that line maps secondary structure elements on ARR3 (cone arrestin) – beta strands in gray and the one alpha helix in black (adapted from Sutton et al. 2005). Below the ARR3 structural elements, the predicted secondary structure of TXNIP is shown [see Additional file 2]. Underlining highlights regions involved in receptor specificity. Asterisks (*) show residues involved in the "three-element interaction"; number symbols (#) mark residues that make up the "polar core".