

Additional file 5. Accession numbers for DUF3504 genes.

Gene	Species	Classification	Accession number
WOC	<i>Drosophila melanogaster</i>	Arthropoda/Diptera	CAC01697
	<i>Anopheles gambiae</i>	Arthropoda/Diptera	XP_322022
	<i>Apis mellifera</i>	Arthropoda/Hymenoptera	XP_624959
	<i>Nasonia vitripennis</i>	Arthropoda/Hymenoptera	XP_00165299
	<i>Tribolium castaneum</i>	Arthropoda/Coleoptera	XP_972303
	<i>Acyrtosiphon pisum</i>	Arthropoda/Hemiptera	XP_001943720
	<i>Pediculus humanus</i>	Arthropoda/Phthiraptera	XP_002430505
	<i>Lepeophtheirus salmonis</i>	Arthropoda/Siphonostomatoida	ADND01132817*
	<i>Ixodes scapularis</i>	Arthropoda/Ixodida	XP_002403753
	<i>Varroa destructor</i>	Arthropoda/Acari	ADDG01000056*
	<i>Schistosoma mansoni</i>	Platyhelminthes/Trematoda	XP_002577579
	<i>Schistosoma japonica</i>	Platyhelminthes/Trematoda	CAX69524
	<i>Aplysia californica</i>	Mollusca/Gastropoda	AASC02011980*
	<i>Pinctada maxima</i>	Mollusca/Bivalvia	EZ420514*
	<i>Saccoglossus kowalevskii</i>	Hemichordata	ACQM01067576*
	<i>Strongylocentrotus purpuratus</i>	Echinodermata	XP_793574
	<i>Ciona intestinalis</i>	Chordata/Urochordata	XP_002127329
	<i>Branchiostoma floridae</i>	Chordata/Cephalochordata	XP_002590281
ZMYM2	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_003444
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_083774
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_850020
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimorpha	XP_001366267
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	XP_001516313
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_001233738
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	ABQF01007661*
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02018035*
	<i>Xenopus laevis</i>	Chordata/Amphibia/Anura	NP_001086553
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cypriniformes	XP_001923572
	<i>Tetraodon nigroviridis</i>	Chordata/Actinopterygii/Tetraodontiformes	CAG08242
	<i>Gasterosteus aculeatus</i>	Chordata/Actinopterygii/Gasterosteiformes	AANH01012347*
	<i>Oryzias latipes</i> Hd-rR	Chordata/Actinopterygii/Beloniformes	BAAF04078680*,
	<i>Oryzias latipes</i> HNI	Chordata/Actinopterygii/Beloniformes	BAAE01132309*, BAAE01132311*, BAAE01132314
	<i>Callorhynchus milii</i>	Chordata/Chondrichthyes	AAVX01071030*, AAVX01003033*, AAVX01219755*, AAVX01021011*
ZMYM3	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_005087
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_062805
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_857608
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimorpha	AAFR03060006*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_420201
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002187810

	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02030824*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	AAMC01038517*, AAMC01038515*
	<i>Callorhinchus milii</i>	Chordata/Chondrichthyes	AAVX01074815*, AAVX01617007*, AAVX01227604*, AAVX01012004*
ZMYM4	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_005086
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_001107871
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_849462
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001380579
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01136168*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_417783
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002195746, ABQF01050374*
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02030231*, AAWZ02030230*
	<i>Xenopus laevis</i>	Chordata/Amphibia/Anura	NP_001129637
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	NP_001123397
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	AAI71718, XP_689392
	<i>Tetraodon nigroviridis</i>	Chordata/Actinopterygii/Tetraodo ntiformes	CAG02312
	<i>Gasterosteus aculeatus</i>	Chordata/Actinopterygii/Gasterost eiformes	AANH01003783*, AANH01002133*
	<i>Oryzias latipes</i> Hd-rR	Chordata/Actinopterygii/Belonifor mes	BAAF04001537*, BAAF04025036*, BAAF04001532*
	<i>Oryzias latipes</i> HNI	Chordata/Actinopterygii/Belonifor mes	BAAE01076510*, BAAE01076509*, BAAE01045156*
	<i>Callorhinchus milii</i>	Chordata/Chondrichthyes	AAVX01060100
QRICH1	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_060200
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_780352
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_850904
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001367745
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	XP_001505372
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_001233527
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002187824
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02016385*
	<i>Xenopus laevis</i>	Chordata/Amphibia/Anura	NP_001083416
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	NP_001020633
	<i>Tetraodon nigroviridis</i>	Chordata/Actinopterygii/Tetraodo ntiformes	CAG06870
	<i>Gasterosteus aculeatus</i>	Chordata/Actinopterygii/Gasterost eiformes	AANH01007721*
	<i>Oryzias latipes</i> Hd-rR	Chordata/Actinopterygii/Belonifor mes	BAAF04090792*, BAAF04002983*
	<i>Callorhinchus milii</i>	Chordata/Chondrichthyes	(AAVX01090275*, AAVX01277274*, AAVX01625381*),

KCTD1	<i>Petromyzon marinus</i>	Chordata/Petromyzontiformes	AAVX01006759* Contig26917
	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_001136202
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_001136203
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_537294
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001364001
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01226528*, AAPN01261857*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	AADN02021374*
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002195485
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02009575*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	AAMC01108847*
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	XR_044928*, NC_007131*
	<i>Tetraodon nigroviridis</i>	Chordata/Actinopterygii/Tetraodo ntiformes	CAAE01010805*
	<i>Gasterosteus aculeatus</i>	Chordata/Actinopterygii/Gasterost eiformes	AANH01010078*
	<i>Oryzias latipes</i> Hd-rR	Chordata/Actinopterygii/Belonifor mes	BAAF04008989*, BAAF04028584*
	<i>Oryzias latipes</i> HNI	Chordata/Actinopterygii/Belonifor mes	BAAE01047086*, BAAE01024970*
	<i>Callorhynchus milii</i>	Chordata/Chondrichthyes	AAVX01135059*, AAVX01274183*, AAVX01152351*
KIAA19 58a	<i>Petromyzon marinus</i>	Chordata/Petromyzontiformes	Contig72738
	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	BAB85544
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_001015681
	<i>Canis familiaris</i>	Chordata/Mammalia/	XM_862606
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001375998
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01441730*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	AADN02057701*
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	ABQF01045188*
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ01002749*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	AAMC01060931*
	<i>Callorhynchus milii</i>	Chordata/Chondrichthyes	AAVX01026201*
	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	EAWS9110
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_694798
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_538791
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001376013
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01412958*
KIAA19 58b	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_429189
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002188379
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ01002749*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	NP_001123722
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	NW_001877113*(BX 640460*)
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	XP_001506858
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_694798
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_538791
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001376013
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01412958*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_429189
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002188379
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ01002749*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	NP_001123722
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	NW_001877113*(BX 640460*)
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	XP_001506858
KIAA19 58L	<i>Petromyzon marinus</i>	Chordata/Petromyzontiformes	AAVX01006759* Contig26917
	<i>Homo sapiens</i>	Chordata/Mammalia/Primates	NP_001136202
	<i>Mus musculus</i>	Chordata/Mammalia/Rodentia	NP_001136203
	<i>Canis familiaris</i>	Chordata/Mammalia/	XP_537294
	<i>Monodelphis domestica</i>	Chordata/Mammalia/Didelphimor phia	XP_001364001
	<i>Ornithorhynchus anatinus</i>	Chordata/Mammalia/Monotremata	AAPN01226528*, AAPN01261857*
	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	AADN02021374*
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002195485
	<i>Anolis carolinensis</i>	Chordata/Reptilia/Squamata	AAWZ02009575*
	<i>Xenopus tropicalis</i>	Chordata/Amphibia/Anura	AAMC01108847*
	<i>Danio rerio</i>	Chordata/Actinopterygii/Cyprinifo rmes	XR_044928*, NC_007131*
	<i>Tetraodon nigroviridis</i>	Chordata/Actinopterygii/Tetraodo ntiformes	CAAE01010805*
	<i>Gasterosteus aculeatus</i>	Chordata/Actinopterygii/Gasterost eiformes	AANH01010078*
	<i>Oryzias latipes</i> Hd-rR	Chordata/Actinopterygii/Belonifor mes	BAAF04008989*, BAAF04028584*
	<i>Oryzias latipes</i> HNI	Chordata/Actinopterygii/Belonifor mes	BAAE01047086*, BAAE01024970*
	<i>Callorhynchus milii</i>	Chordata/Chondrichthyes	AAVX01135059*, AAVX01274183*, AAVX01152351*

	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	XP_425905
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	XP_002193638
ATF7IP	<i>Gallus gallus</i>	Chordata/Aves/Galliformes	AADN02006037*
	<i>Meleagris gallopavo</i>	Chordata/Aves/Galliformes	NC_015011*
	<i>Taeniopygia guttata</i>	Chordata/Aves/Passeriformes	ABQF01015803*

* Nucleotide sequences including DUF3504 genes.