Table S7. List of receptors and the organisms they were isolated from used in the phylogenetic analyses. Receptors shaded in grey are those that were additionally incorporated into the phylogeny used to reconstruct AncSR1. ERs, estrogen receptors; PRs, progesterone receptors; ARs, androgen receptors; MRs, mineralocorticoid receptors; GRs, glucocorticoid receptors; ERRs, estrogen-related receptors; SF1, steroidogenic factor 1 receptor; RXR, retinoid X receptors; COUP-TFs, chicken ovalbumin upstream promoter transcription factors.

Species Name	Common Name	Phylum	Receptor Type	Abbreviation	Accession #	Database
Acanthopagrus schlegeli	black porgy	Vertebrata, Teleostei	AR	AcaSchAR	Q800S7	UniPROTKB/TrEM
			ERα	AcaSchERa	Q804Q6	UniPROTKB/TrEM UniPROTKB/TrEM
Alligator mississippiensis	American alligator	Vertebrate, Crocodylidae	ERβ ERα	AcaSchERb AllMisERa	Q804Q7 Q765N7	UniPROTKB/TrEM
rengator middioappicnoid	/ unionical rangator	vertebrate, orocodynade	PR	AllMisPR	Q765N5	UniPROTKB/TrEM
Anguilla japonica	Japanese eel	Vertebrata, Teleostei	ARa	AngJapARa	Q9YGV9	UniPROTKB/TrEM
			ARb ERa	AngJapARb AngJapERa	Q9PWG5 O13012	UniPROTKB/TrEM UniPROTKB/TrEM
			ERβ	AngJapERb	O13012	UniPROTKB/TrEM
Aplysia californica	sea slug	Mollusca, Gastropoda	ER	AplCalER	Q6VU64	UniPROTKB/TrEM
Bos taurus	cow	Vertebrata, Certartiodactyla	ERα	BosTauERa	P49884	UniPROTKB/TrEM
			ERβ GR	BosTauERb BosTauGR	Q9XSB5 Q865Y6	UniPROTKB/TrEM UniPROTKB/TrEM
Branchiostoma floridae	amphioxus	Vertebrata, Cephalochordata		BraFloER	B5L586	UniPROTKB/TrEM
			ERR	BraFloERR	Q5XTR0	UniPROTKB/TrEM
Capitella capitata	bristle worm	Annelida, Polychaeta	SR ER	BraFloSR CapCapER	B5SVV7 C0IRV2	UniPROTKB/TrEM UniPROTKB/TrEM
Candidia barbatus	Taiwanese cyprinid	Vertebrata, Teleostei	ERα	CanBarERa	Q7T3U5	UniPROTKB/TrEM
Canis familiaris	dog	Vertebrata, Carnivora	AR	CanFamAR	Q9TT90	UniPROTKB/TrEM
			ERa GR	CanFamERa CanFamGR	AAS20260 Q3HTT7	Genbank UniPROTKB/TrEM
			MR	CanFamMR	Q3HTT9	UniPROTKB/TrEM
			PR	CanFamPR	Q9GLW0	UniPROTKB/TrEM
Carassius auratus	goldfish	Vertebrata, Teleostei	AR	CarAurAR	Q8QFV2	UniPROTKB/TrEM
			ERα ERβ1	CarAurERa CarAurERb1	Q90WV1 Q9W669	UniPROTKB/TrEM UniPROTKB/TrEM
			ERβ2	CarAurERb2	Q9IAL9	UniPROTKB/TrEM
Cavia porcellus	guinea pig	Vertebrata, Euarchontoglires	ERα	CavPorERa	Q8CGK8	UniPROTKB/TrEM
			ERβ GR	CavPorERb	Q8CGK9	UniPROTKB/TrEM
Clarias gariepinus	African catfish	Vertebrata, Teleostei	ERα	CavPorGR CalGarERa	P49115 Q90WH6	UniPROTKB/TrEM UniPROTKB/TrEM
Cnemidophorus uniparens	whip-tailed lizard	Vertebrata, Squamata	ERα	CneUniERa	Q8UWA9	UniPROTKB/TrEM
0		Verdeberte T.	PR	CneUniPR	Q91425	UniPROTKB/TrEM
Conger myriaster Coturniy coturniy	conger eel	Vertebrata, Teleostei	ERβ ERα	ConMyrERb CotCotERa	Q762D6 Q8AYH0	UniPROTKB/TrEM UniPROTKB/TrEM
Coturnix coturnix	common quail	Vertebrata, Aves	ERβ	CotCotERb	O93511	UniPROTKB/TrEM
Coturnix japonica	Asian quail	Vertebrata, Aves	AR	CotJapAR	Q689Y8	UniPROTKB/TrEM
Crassostrea gigas	Pacific oyster	Mollusca, Bivalvia	ER AD	CraGigER	A2A113	UniPROTKB/TrEM
Crocuta crocuta Cyprinus carpio	hyena common carp	Vertebrata, Carnivora Vertebrata, Teleostei	AR ERβ	CroCroAR CypCarERb	Q8MIK0 Q8JJB9	UniPROTKB/TrEM UniPROTKB/TrEM
Danio rerio	zebrafish	Vertebrata, Teleostei	AR	DanRerAR	Q6EAL5	UniPROTKB/TrEM
			COUP-TFII	DanRerCP2	O42532	UniPROTKB/TrEM
			ERα ERα2	DanRerERa DanBorERa	P57717	UniPROTKB/TrEM UniPROTKB/TrEM
			ER61	DanRerER2a DanRerERb1	Q7ZU32 Q90WS9	UniPROTKB/TrEM
			ERRα	DanRerERRa	Q6Q6F6	UniPROTKB/TrEM
			ERRβ	DanRerERRb	Q6Q6F5	UniPROTKB/TrEM
			ERR ₇ GR	DanRerERRg DanRerGR	Q6Q6F4 Q1XHK0	UniPROTKB/TrEM UniPROTKB/TrEM
			RXRα	DanRerRXRa	Q90416	UniPROTKB/TrEM
			RXRß	DanRerRXRb	Q90417	UniPROTKB/TrEM
	Europaan aaa		RXRy	DanRerRXRg	Q6DHP9	UniPROTKB/TrEM
Dicentrarchus labrax	European sea bass	Vertebrata, Teleostei	AR	DicLabAR	Q4G497	UniPROTKB/TrEM
			ERα	DicLabERa	Q6A4C2	UniPROTKB/TrEM
F	I am a de at did form	\/	ERβ	DicLabERb	Q6KF57	UniPROTKB/TrEM UniPROTKB/TrEM
Engystomops pustulosus Equus caballus	Lepodactylid frog horse	Vertebrata, Anura Vertebrata, Perissodactyla	AR ERa	EngPusAR EquCabERa	Q2PK04 Q9TV98	UniPROTKB/TrEM
Eublepharis macularius	leopard gecko	Vertebrata, Squamata	ERα	EubMacERa	Q2HWK5	UniPROTKB/TrEM
			ERβ	EubMacERb	Q2HWK4	UniPROTKB/TrEM
Felis catus Fundulus heteroclitus	cat killifish	Vertebrata, Carnivora Vertebrata, Teleostei	ERa ERa	FelCatERa FunHetERa	Q53AD2 Q7SZI0	UniPROTKB/TrEM UniPROTKB/TrEM
Gallus gallus	chicken	Vertebrata, Aves	COUP-TFII	GalGalCP2	Q90733	UniPROTKB/TrEM
			ERa	GalGalERa	P06212	UniPROTKB/TrEM
			ERRg	GalGalERb GalGalERRg	Q9PTU5 Q5UKY7	UniPROTKB/TrEM UniPROTKB/TrEM
			GR	GalGalGR	Q38HX7	UniPROTKB/TrEM
			MR	GalGalMR	C1KB84	UniPROTKB/TrEM
			PR	GalGalPR	P07812	UniPROTKB/TrEM
	western		SF1	GalGalSF1	Q9PW17	UniPROTKB/TrEM
Gambusia affinis	mosquitofish	Vertebrata, Teleostei	AR	GamAffAR	Q60I32	UniPROTKB/TrEM
			ARa	GamAffARa	Q60GT9	UniPROTKB/TrEM
Gasterosteus aculeatus	three-spined	Vertebrata, Teleostei	ARb	GasAcuARb	Q801Z2	UniPROTKB/TrEM
Halichoeres tenuispinis	stickelback wrasse	Vertebrata, Teleostei	ERα	HalTenERa	Q7T2K8	UniPROTKB/TrEM
		,	ERβ	HalTenERb	Q7T2K7	UniPROTKB/TrEM
Halichoeres trimaculatus	protogynous wrasse	Vertebrata, Teleostei	AR	HalTriAR	Q9DDJ4	UniPROTKB/TrEM
			ERα	HalTriERa	Q9DDJ3	UniPROTKB/TrEM
Haplochromis burtoni	African cichlid	Vertebrata, Teleostei	AR	HapBurAR	Q9W6F4	UniPROTKB/TrEM
			ARb ERa	HapBurARb HapBurERa	Q8QFV7 Q6TGB3	UniPROTKB/TrEM UniPROTKB/TrEM
			GR1	HapBurERa HapBur1GR	Q8JJ92	UniPROTKB/TrEM
Home conione			GR2	HapBur2aGR	Q8JJ91	UniPROTKB/TrEM
	bu	Vertebrote Primate	MR	HapBurMR	Q8JJ89	UniPROTKB/TrEM UniPROTKB/TrEM
Homo sapiens	human	Vertebrata, Primates	AR COUP-TF1	HomSapAR HomSapCP1	P10275 P10589	UniPROTKB/TrEM UniPROTKB/TrEM
			COUP-TFII	HomSapCP2	P24468	UniPROTKB/TrEM
			ERα	HomSapERa	P03372	UniPROTKB/TrEM
			ERβ	HomSapERb	Q9UHD3	UniPROTKB/TrEM
			ERRa	HomSapERR1	P11474	UniPROTKB/TrEM
			ERRβ	HomSapERR2	O95718	UniPROTKB/TrEM
			ERRγ	HomSapERR3	P62508	UniPROTKB/TrEM
			GR	HomSapGR	P04150	UniPROTKB/TrEM
			MR	HomSapMR	P08235	UniPROTKB/TrEM
			PR	HomSapPR	P06401	UniPROTKB/TrEM
			RXRα RXRβ	HomSapRXRa HomSapRXRb	P19793 P28702	UniPROTKB/TrEM UniPROTKB/TrEM
			RXRy	HomSapRXRg	P48443	UniPROTKB/TrEM
			SF1	HomSapSF1	Q13285	UniPROTKB/TrEM
Ictalurus punctatus	channel catfish	Vertebrata, Teleostei	ERa	IctPunERa	Q9YHZ7	UniPROTKB/TrEM
Knintolehias mamazatur	manarove rivel:	Vertebrata, Teleostei	ERβ AR	IctPunERb KryMarAR	Q9IAK1	UniPROTKB/TrEM UniPROTKB/TrEM
Kryptolebias marmoratus	mangrove rivulus	verteurata, Teleustél	ERa	KryMarAR KryMarERa	Q15HT9 Q0KKB8	UniPROTKB/TrEM
			ERβ	KryMarERb	Q0KKB9	UniPROTKB/TrEM
Leucoraja erinacea	Had14-	Vertebrata, Elasmobranchii	AR	LeuEriAR	Q1KXY2	UniPROTKB/TrEM
Leucoraja erinacea	little skate	vertebrata, Elabinobranomi		L E 100		
Leucoraja erinacea	little skate	voitebrata, Elabinobranom	GR MR	LeuEriGR LeuEriMR	Q1KXY4 Q1KXY3	UniPROTKB/TrEM UniPROTKB/TrEM

Species Name	Common Name	Phylum	Receptor Type	Abbreviation	Accession #	Database
Lottia gigantea Manacus vitellinus	limpet gold-collared manakir	Mollusca, Gastropoda Vertebrata, Aves	AR AR	LotGigER ManVitAR	Lotgi1:132166 Q4U102	JGI UniPROTKB/TrEM
Marisa cornuarietis Mesocricetus auratus	apple snail golden hamster	Mollusca, Gastropoda Vertebrata, Rodentia	ER ERa	MarCorER MesAurERa	Q06AL2 Q9QZJ5	UniPROTKB/TrEM
Microtus ochrogaster	priarie vole	Vertebrata, Rodentia	ERα	MicOchERa	Q1EDB6	UniPROTKB/TrEM
ficropterus salmoides	largemouth bass	Vertebrata, Teleostei	ERα	MicSalERa	Q9DDZ4	UniPROTKB/TrEM
cropogonias undulatus	Atlantic croaker	Vertebrata, Teleostei	ERβ AR	MicSalERb MicUndAR	Q6XSH2 Q66VR6	UniPROTKB/TrEM
Topogorilas uridulatus	Audituc Gloakei	vertebrata, relevator	ERβ	MicUndERb	P57781	UniPROTKB/TrEM
			ERγ	MicUndERg	P57783	UniPROTKB/TrEf
Mus musculus	mouse	Vertebrata, Rodentia	ERα ERβ	MusMusERa MusMusERb	P19785 O08537	UniPROTKB/TrEf UniPROTKB/TrEf
			ERRα	MusMusERR1	O08580	UniPROTKB/TrEf
			ERRβ	MusMusERR2	Q61539	UniPROTKB/TrEf
			ERRg	MusMusERR3	P62509	UniPROTKB/TrEf
			GR MR	MusMusGR MusMusMR	P06537	UniPROTKB/TrEf UniPROTKB/TrEf
					Q8VII8	
			PR	MusMusPR	Q00175	UniPROTKB/TrEf
			SF1	MusMusSF1	P33242	UniPROTKB/TrEf
Myxine glutinosa	Atlantic hagfish	Vertebrata, Teleostei	CR ER	MyxGluCR MyxGluER	Q1KXY6 EU439936	UniPROTKB/TrE
			SR	MyxGluSR		UniPROTKB/TrE
Nucella lapillus	Atlantic dogwinkle	Mollusca, Gastropoda	ER	NucLapER	Q1KXY5 A5YVJ5	UniPROTKB/TrE
Octopus vulgaris	octopus	Mollusca, Cephalopoda	ER	OctVulER	Q19AB0	UniPROTKB/TrEf
Oncorhynchus mykiss	rainbow trout	Vertebrata, Teleostei	AR AR	OncMykARa2 OncMykARb2	O93244 O93245	UniPROTKB/TrE
			ERα	OncMykERa	P16058	UniPROTKB/TrE
			ERβ	OncMykERb	P57782	UniPROTKB/TrE
			GR	OncMykGR	P49843	UniPROTKB/TrE
			GR	OncMykGR2	Q6RKQ3	UniPROTKB/TrE
ychostoma barbatula	cyprinid fish	Vertebrata, Teleostei	MR ERβ	OncMykMR OnyBarERb2	Q5WP02 Q2PDJ6	UniPROTKB/TrEI
reochromis aureus	Israel tilapia	Vertebrata, Teleostei	ERα	OreAurERa	P50240	UniPROTKB/TrE
rechromis niloticus	Nile tilapia	Vertebrata, Teleostei	AR	OreNilARa	Q8UWB8	UniPROTKB/TrE
			AR	OreNilARb	Q8UWB7	UniPROTKB/TrE
			ERα ERβ	OreNilERa OreNilERb	Q9YH33 Q7T3U4	UniPROTKB/TrEI UniPROTKB/TrEI
ryctolagus cuniculus	rabbit	Vertebrata, Glires	AR	OrtCunAR	P49699	UniPROTKB/TrE
		,.	GR	OrtCunGR	P59667	UniPROTKB/TrEI
			PR	OrtCunPR	P06186	UniPROTKB/TrE
Oryzias latipes	Japanese ricefish	Vertebrata, Teleostei	AR ERa	OryLatAR OryLatERa	Q76LM5 P50241	UniPROTKB/TrE
			ERβ	OryLatERb	Q8UW75	UniPROTKB/TrE
Ovis aries	sheep	Vertebrata, Ruminantia	ERα	OviAriERa	Q95L13	UniPROTKB/TrEI
			ERβ	OviAriERb	Q9TU15	UniPROTKB/TrEf
Pagrus major	red sea bream	Vertebrata, Teleostei	AR ERα	PagMajAR PagMajERa	O93497 O42132	UniPROTKB/TrEI UniPROTKB/TrEI
ralichthys olivaceus	Japanses flounder	Vertebrata, Teleostei	ERα	PagMajERa ParOliERa	Q8QHL0	UniPROTKB/TrE
arananinya anvaacaa			ERβ	ParOliERb	Q8QHK9	UniPROTKB/TrEI
			GR	ParOliGR	073673	UniPROTKB/TrE
etromyzon marinus	sea lamprey	Vertebrata, Hyperoartia	COUP-TFII CR	PetMarCP2 PetMarCR	Q42509 Q90ZM7	UniPROTKB/TrEf UniPROTKB/TrEf
			ER	PetMarER	Q90ZM8	UniPROTKB/TrE
			PR	PetMarPR	Q90ZM6	UniPROTKB/TrE
Pimephales promelas fath	fathead minnow	Vertebrata, Teleostei	AR	PetMarRXR2 PimProAR	Q90Y01 Q9I8F5	UniPROTKB/TrE
Pimephales promeias 18	latileau Illilliow	vertebrata, relevator	ERα	PimProERa	Q5XXP1	UniPROTKB/TrE
			GR	PimProGR	Q2TU59	UniPROTKB/TrE
Platynereis dumerilli	polychaete worm	Annelida, Polychaeta	ER	PlaDumER	EU482033	Genbank
Rana catesbeiana Rana dybowskii	bullfrog Korean brown frog	Vertebrata, Anura Vertebrata, Anura	AR PR	RanCatAR RanDybPR	Q7T1K4 Q8AYI2	UniPROTKB/TrE
Rana rugosa	wrinkled frog	Vertebrata, Anura Vertebrata, Rodentia	SF1	RanRugSF1	Q9YI95	UniPROTKB/TrE
Rattus norvegicus	rat	Vertebrata, Rodentia	AR	RatNovAR	P15207	UniPROTKB/TrE
			ERβ ERRβ	RatNovERb RatNovERR2	Q62986 P11475	UniPROTKB/TrEI UniPROTKB/TrEI
			GR	RatNovGR	P06536	UniPROTKB/TrE
			MR	RatNovMR	P22199	UniPROTKB/TrE
			PR	RatNovPR	Q63449	UniPROTKB/TrE
Saimiri boliviensis	squirrel monkey	Vertebrata, Primates	GR	SaiBolGR	O13186	UniPROTKB/TrE
			MR	SaiBolMR	Q4JM28	UniPROTKB/TrE
Salmo salar	Atlantic salmon	Vertebrata, Teleostei	ERβ	SalSalERb	Q6R7S4	UniPROTKB/TrE
Salmo trutta	brown salmon	Vertebrata, Teleostei	GR	SalTruGR	Q5I1Z4	UniPROTKB/TrE
Serinus canarius Sparus aurata	canary gilthead seabream	Vertebrata, Aves Vertebrata, Teleostei	AR ERa	SerCanAR SpaAurERa	Q91445 Q9PVZ9	UniPROTKB/TrE
-parao adrata	grandad adabredill	. oncorona, relevatel			Q9W6M2	
Spinibarbus denticulatus			ERβ	SpaAurERb		UniPROTKB/TrE
	currinid flob	Vertebrate Telepote	GR EDR	SpaAurGR	Q1HGK6	UniPROTKB/TrE
nibarbus denticulatus Squalus acanthias	cyprinid fish spiny dogfish	Vertebrata, Teleostei 'ertebrata, Elasmobranch	ERβ AR	SpiDebERb SquAcaAR	Q1HCL3 Q56VU2	UniPROTKB/TrE
ando dodininas	oping dogitali		ERβ	SquAcaERb	Q90ZE6	UniPROTKB/TrE
Sturnus vulgaris	European starling	Vertebrata, Aves	ERβ	StuVuIERb	Q9PVE2	UniPROTKB/TrEI
Sus scrofa	pig	'ertebrata, Certartiodactyl	AR	SusScrAR	Q9GKL7	UniPROTKB/TrEI
			ERα ERβ	SusScrERa SusScrERb	Q29040 Q9XSW2	UniPROTKB/TrE
			GR	SusScrERD	Q9N1U3	UniPROTKB/TrE
aeniopygia guttata	zebrafinch	Vertebrata, Aves	AR	TaeGutAR	Q2VP86	UniPROTKB/TrE
			ERα	TaeGutERa	Q91250	UniPROTKB/TrE
			MR SF1	TaeGutMR TaeGutSF1	Q157N1 Q90XC4	UniPROTKB/TrE
m					NEWSINFRUP000001563	
Takifugu rubripes	pufferfish	Vertebrata, Teleostei	AR	TakRubAR	18	Ensemble
etraodon nigroviridis	green-spotted	Vertebrata, Teleostei	ERα	TetNigERa	Q4S6Y6	UniPROTKB/TrE
Thais clavigera	pufferfish		ER			
ichoplax adhaerens	whelk	Mollusca, Gastropoda Placozoa	ERR	ThaClaER TriAdhERR	Q86B27 Triad1:16711	UniPROTKB/TrEI
Tupaia glis	common tree shrew	Vertebrata, Scandentia	GR	TupGliGR	Q95267	UniPROTKB/TrEI
			MR	TupGliMR	Q29131	UniPROTKB/TrEI
Xenopus laevis	African clawed toad	Vertebrata, Anura	AR CD1	XenLaeAR	P70048	UniPROTKB/TrE
			CP1 ERα	XenLaeCP1 XenLaeERa	Q9W745 P81559	UniPROTKB/TrE
			ERR	XenLaeERR	Q6AX97	UniPROTKB/TrEI
			GR	XenLaeGR	P49844	UniPROTKB/TrEI
			MR	XenLaeMR	Q66J29	UniPROTKB/TrE
			PR RXRα	XenLaePR XenLaeRXRa	Q9DDU9 P51128	UniPROTKB/TrEI UniPROTKB/TrEI
			RXRα RXRβ	XenLaeRXRa XenLaeRXRb	P51128 Q91840	UniPROTKB/TrEI
			RXRy	XenLaeRXRg	P51129	
Xenopus tropicalis	clawed toad	Vertebrata, Anura			P51129 Q6W5G9 Q6W5G8	UniPROTKB/TrEM UniPROTKB/TrEM UniPROTKB/TrEM