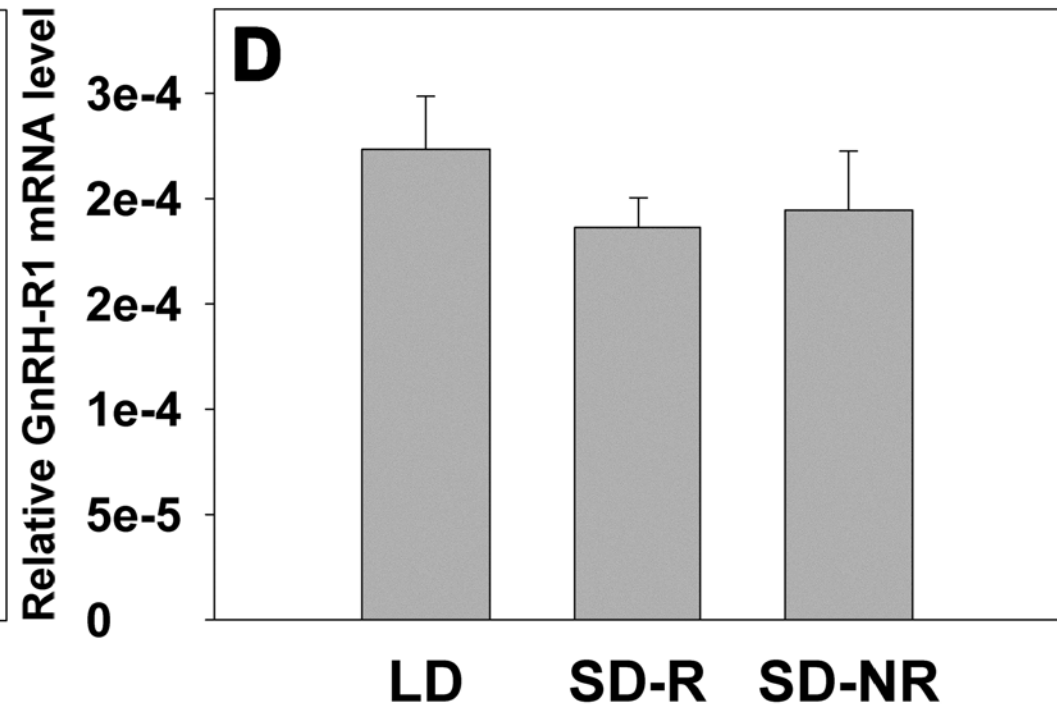
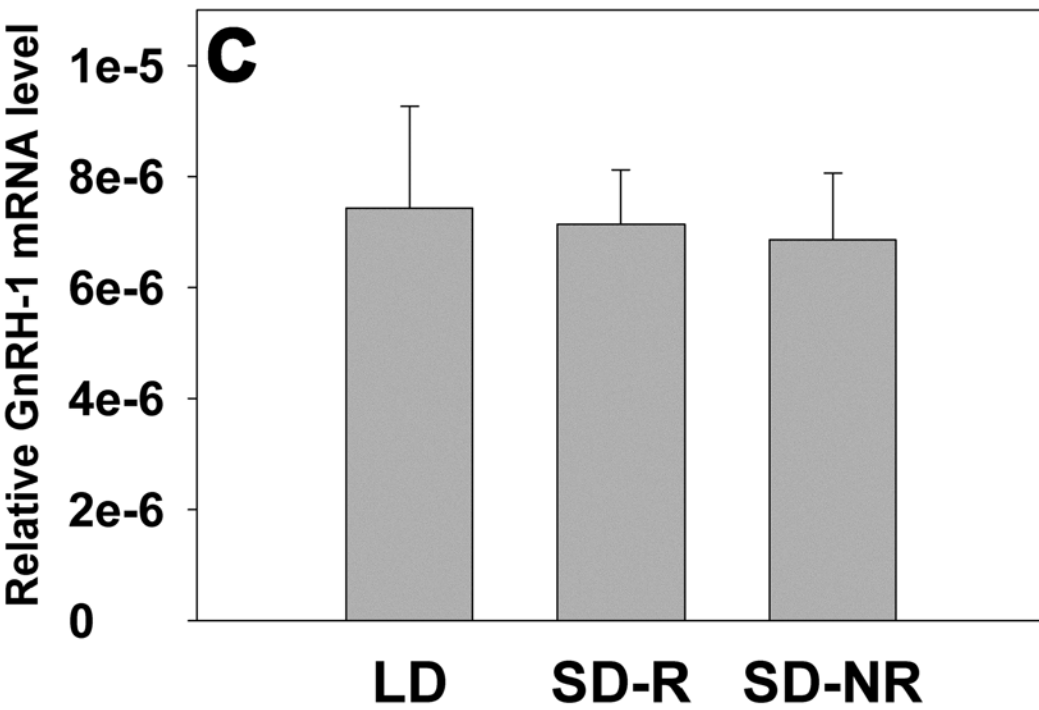
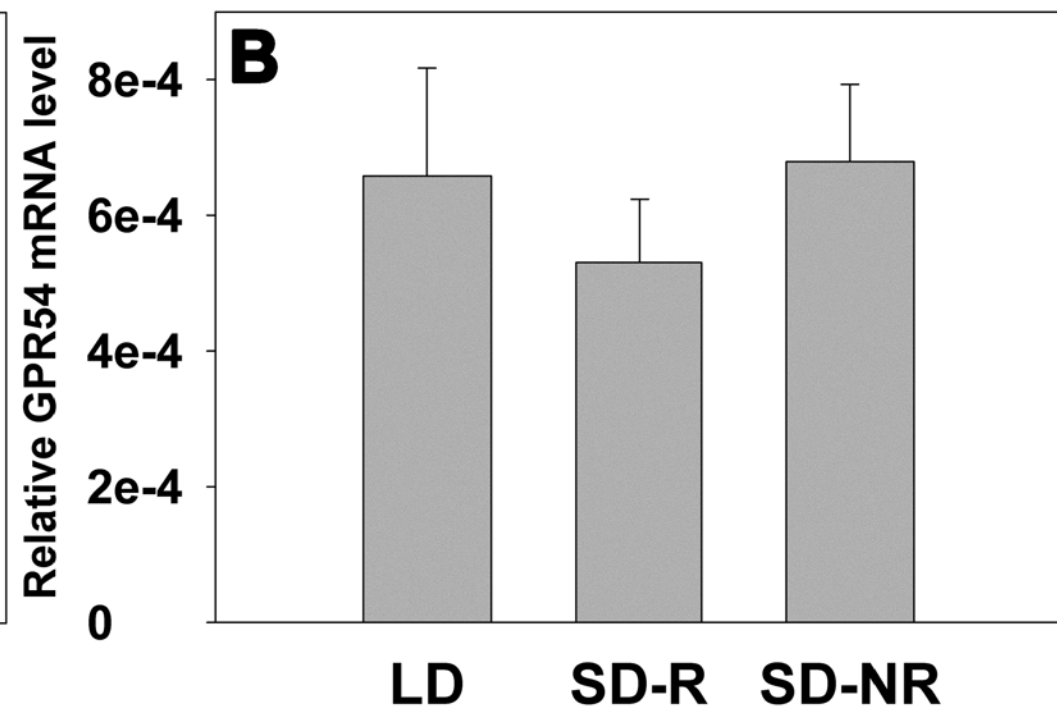
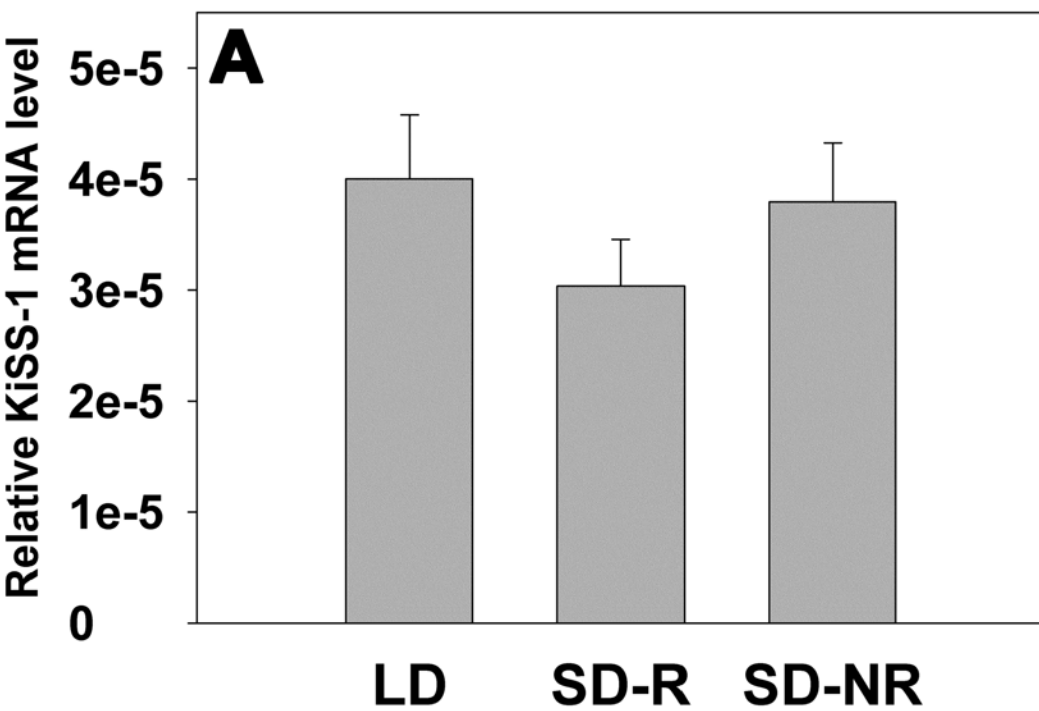


Supplemental Fig. 1. Mean (\pm SEM) KiSS-1 (A), GPR54 (B), GnRH-1 (C), and GnRH-R1 (D) mRNA levels in the testes of LD, SD-R, and SD-NR animals were quantified by real-time PCR. Data are presented relative to β -actin.

Supplemental Fig. 2. Alignments of the deduced amino acid sequences for the Syrian hamster RFRP precursor (A), GPR147 (B), and GPR74 (C) with mammalian orthologs from other species (i.e., mouse, rat, and human).



A

RFRP

Section 1

	(1)	1	10	20	30	49
M. auratus_DQ371799	(1)	-----	-----	-----	LMPHC	HSKEKDDKYSQPRG
M. musculus_BC116905	(1)	MEIISL	LKRFILLT	VATSSFLT	SNTFCTDE	FMMPHFHSKEGDGKYSQLRG
R. norvegicus_AB040288	(1)	MEIIS	SKRFILLT	LATSSFLT	SNTLCS	DELMMPHFHSKEGYGKYQLRG
H. sapiens_NM_022150	(1)	MEIIS	SKLFILLT	LATSSLL	LTSNIF	CADELVMSNLHSKENYDKYSEPRG
Consensus	(1)	MEIIS	SKRFILLT	LATSSFLT	SNTFCS	DELMMPHFHSKEGYGKYSQPRG

Section 2

	(50)	50	60	70	80	98
M. auratus_DQ371799	(21)	ITKGEKERSV	SFQELKDWG	AKNVIKMS	PAPAN	KVPHSAANLPLRFGRTL
M. musculus_BC116905	(50)	IPKGEKERSV	SFQELKDWG	AKNVIKMS	PAPAN	KVPHSAANLPLRFGRTI
R. norvegicus_AB040288	(50)	IPKGVKERSV	TFQELKDWG	AKKDIKMS	PAPAN	KVPHSAANLPLRFGRNI
H. sapiens_NM_022150	(50)	YPKG--	ERSLNF	EELKDWGP	KNVIKMS	TPAVNKMPHSAANLPLRFGRN
Consensus	(50)	IPKGEKERSV	SFQELKDWG	AKNVIKMS	PAPAN	KVPHSAANLPLRFGRTI

RFRP1

Section 3

	(99)	99	110	120	130	147
M. auratus_DQ371799	(70)	EEERSP	-----	RAW	SNMEAMIS	SRVPSLPQRFGRTTARS-IPKTPS
M. musculus_BC116905	(99)	DEKRS	-----	AARV	NMEAGTRS	HFPSPLPQRFGRTTAR--SPKTPA
R. norvegicus_AB040288	(99)	EDRRS	-----	RARA	NMEAGTMS	HFPSPLPQRFGRTTARR-ITKTLA
H. sapiens_NM_022150	(97)	QEERS	AGATANLPL	RSGR	NMEVSLV	RRVPSLPQRFGRTTTAKSVCRLMS
Consensus	(99)	EEERSP	-----	RARAN	NMEAGT	LSRVPSLPQRFGRTTARKIPKTPA

RFRP2

RFRP3

Section 4

	(148)	148	160	170	180	196
M. auratus_DQ371799	(110)	HLLQRSLH	SLATSELL	YAMTCQH	QEIQSPG	-----
M. musculus_BC116905	(138)	DLPQKPLH	SLGSSELL	YVMICQH	QEIQSPG	GKRTRRGAFVETDDAERKP
R. norvegicus_AB040288	(139)	GLPQKSLH	SLASSELL	YAMTRQH	QEIQSPG	QEQPRKRVFTETDDAERKQ
H. sapiens_NM_022150	(146)	DLCQGS	MHSPCAN	DLFYSM	TCQH	QEIQNPDQKQSRRLLFKKIDDDELKQ
Consensus	(148)	DLPQKSLH	SLASSELL	YAMTCQH	QEIQSPG	QKQSRRLLFETDDAERKQ

Section 5

	(197)	197	213
M. auratus_DQ371799	(140)	-----	-----
M. musculus_BC116905	(187)	EK	-----
R. norvegicus_AB040288	(188)	EKIGNL	QPVLQGAMKL-
H. sapiens_NM_022150	(195)	EK	-----
Consensus	(197)	EK	-----

B**GPR147**

Section 1

	(1)	10	20	30	48
M. auratus_GU172168	(1)	-----	-----	-----	-----
M. musculus_XM_137119	(1)	MIRLEKDLN	SEPV	RKEKQRLSLVASV	VSAE
R. norvegicus_NM_022291	(1)	-----	-----	-----	-----
H. sapiens_NM_022146	(1)	-----	-----	-----	-----
Consensus	(1)			MEAEPSQPPNGSWPLSQNGSD	

Section 2

	(49)	60	70	80	96
M. auratus_GU172168	(1)	-----	-----	-----	-----
M. musculus_XM_137119	(49)	ETA	VA	SLTFSSYYQHSSPVAAMFIAAYALIFLLCMVGNTLVC	FIVLK
R. norvegicus_NM_022291	(23)	ET	SMATSLTFSSYYQHSSPVAAMFIAAYVLI	FLLCMVGNTLVC	FIVLK
H. sapiens_NM_022146	(23)	EAT	PATNLT	FSSYYQHSSPVAAMFIVAYALIFLLCMVGNTLVC	FIVLK
Consensus	(49)	ETSPATSLTFSSYYQHSSPVAAMFIAAYALIFLLCMVGNTLVC	FIVLK		

Section 3

	(97)	110	120	130	144
M. auratus_GU172168	(1)	-----	-----	-----	-----
M. musculus_XM_137119	(97)	NRHMRTVTNMFILNLAVSDLLVGI	FCMPTTLVDNLI	TGWPF	FDNATCKM
R. norvegicus_NM_022291	(71)	NRHMRTVTNMFILNLAVSDLLVGI	FCMPTTLVDNLI	TGWPF	FDNATCKM
H. sapiens_NM_022146	(71)	NRHM	HFTVTNMFILNLAVSDLLVGI	FCMPTTLVDNLI	TGWPF
Consensus	(97)	NRHMRTVTNMFILNLAVSDLLVGI	FCMPTTLVDNLI	TGWPF	FDNATCKM

Section 4

	(145)	145	150	160	170	180	192
M. auratus_GU172168	(1)	-----	-----	-----	-----	-----	-----
M. musculus_XM_137119	(145)	SGLVQGMSVSASVFTLVAIAVERFRCIVHPPREKLT	LRKAL	ETIAVIW			
R. norvegicus_NM_022291	(119)	SGLVQGMSVSASVFTLVAIAVERFRCIVHPPREKLT	LRKAL	ETIAVIW			
H. sapiens_NM_022146	(119)	SGLVQGMSVSASVFTLVAIAVERFRCIVHPPREKLT	LRKAL	ETIAVIW			
Consensus	(145)	SGLVQGMSVSASVFTLVAIAVERFRCIVHPPREKLT	LRKAL	ETIAVIW			

Section 5

	(193)	193	200	210	220	230	240
M. auratus_GU172168	(1)	-----	-----	-----	-----	-----	-----
M. musculus_XM_137119	(193)	ALALLIMCPSAVTTLVTREEHF	MFLDARNRSYPLYS	CWEAWPEKGM	RK		
R. norvegicus_NM_022291	(167)	ALALLIMCPSAVTTLVTREEHF	MFLDARNRSYPLYS	CWEAWPEKGM	RK		
H. sapiens_NM_022146	(167)	ALALLIMCPSAVTTLVTREEHF	MFLDARNRSYPLYS	CWEAWPEKGM	RK		
Consensus	(193)	ALALLIMCPSAVTTLVTREEHF	MFLDARNRSYPLYS	CWEAWPEKGM	RK		

Section 6

	(241)	241	250	260	270	288
M. auratus_GU172168	(13)	VYTA	VLF	FAHIYLA	PLALIVVMYARIARKLCQAPGP	ARDTEEA
M. musculus_XM_137119	(241)	VYTA	VLF	FAHIYLA	PLALIVVMYARIARKLCQAPGP	ARDTEEA
R. norvegicus_NM_022291	(215)	VYTA	VLF	FAHIYLV	PLALIVVMYARIARKLCQAPGP	ARDTEEA
H. sapiens_NM_022146	(215)	VYTT	VLF	SHIYLA	PLALIVVMYARIARKLCQAPGPA	PGGEEA
Consensus	(241)	VYTA	VLF	FAHIYLA	PLALIVVMYARIARKLCQAPGP	ARDTEEA

Section 7

	(289)	289	300	310	320	336
M. auratus_GU172168	(61)	ASRRRARVVHMLVMVALFFTLSWLPLW	ALLLLIDYG	QLSE	ELQLHLLSV	
M. musculus_XM_137119	(289)	ASRRRARVVHMLVMVALFFTLSWLPLW	ALLLLIDYG	QLSE	ELQLHLLSV	
R. norvegicus_NM_022291	(263)	TSRRRARVVHMLVMVALFFTLSWLPLW	ALLLLIDYG	QLSE	ELQLHLLSV	
H. sapiens_NM_022146	(261)	ASRRRARVVHMLVMVALFFTLSWLPLW	ALLLLIDYG	QLSA	ELQLHL	VTV
Consensus	(289)	ASRRRARVVHMLVMVALFFTLSWLPLW	ALLLLIDYG	QLSE	ELQLHLLSV	

Section 8

	(337)	337	350	360	370	384
M. auratus_GU172168	(109)	YAFP	LAHWLAF	FHSSANPIIYG	YFNENF	
M. musculus_XM_137119	(337)	YAFP	LAHWLAF	FHSSANPIIYG	YFNENF	
R. norvegicus_NM_022291	(311)	YAFP	LAHWLAF	FHSSANPIIYG	YFNENF	
H. sapiens_NM_022146	(309)	YAFP	LAHWLAF	FHSSANPIIYG	YFNENF	
Consensus	(337)	YAFP	LAHWLAF	FHSSANPIIYG	YFNENF	

Section 9

	(385)	385	390	400	410	420	432
M. auratus_GU172168	(137)	-----	-----	-----	-----	-----	-----
M. musculus_XM_137119	(385)	KQAYSER	PGRL	LRRLRRVVVDVQPSD	SGLPSES	SGPSSGVP	GGNRLPLRNG
R. norvegicus_NM_022291	(359)	KQAYSER	PNRLL	LRRLRRVVVDVQPSD	SGLPSES	SGPSSGVP	GGPGRPLRNG
H. sapiens_NM_022146	(357)	KEAYSER	PGGLL	HRRV	FVVVRFPSD	SGLPSES	SGPSSGAPRPGRLPLRNG
Consensus	(385)	KQAYSER	PGRL	LRRLRRVVVDVQPSD	SGLPSES	SGPSSGVP	GGPGRPLRNG

Section 10

	(433)	433	440	459
M. auratus_GU172168	(137)	-----	-----	-----
M. musculus_XM_137119	(433)	RV	AHQD	GPREGPGCNHMPLTI
R. norvegicus_NM_022291	(407)	RV	AHQD	GPREGPGCNHMPLTI
H. sapiens_NM_022146	(405)	RV	AHQD	GPREGPGCSHPLTI
Consensus	(433)	RV	AHQD	GPREGPGCNHMPLTI

C**GPR74**

Section 1

	(1)	1	10	20	30	48																																										
M. auratus_GU172169	(1)	-----					-----																																									
M. musculus_NM_133192	(1)	M	S	E	K	W	D	S	N	S	S	E	S	W	N	H	I	W	S	G	N	D	T	Q	H	H	W	S	D	I	N	I	T	Y	V	N	Y	L	H	Q	P	Q	V	A	A	V	F	
R. norvegicus_NM_023980	(1)	M	G	K	F	W	D	S	N	S	S	G	S	W	D	H	I	W	S	G	N	D	T	Q	H	P	W	S	D	I	N	I	T	Y	N	Y	L	H	Q	H	V	T	A	V	F			
H. sapiens_NM_053036	(1)	M	N	E	K	W	D	S	N	S	S	E	N	W	H	P	I	W	N	V	N	D	T	K	H	H	L	Y	S	D	I	N	I	T	Y	V	N	Y	L	H	Q	P	Q	V	A	A	T	F
Consensus	(1)	M	E	K	W	D	S	N	S	S	E	S	W	H	I	W	S	G	N	D	T	Q	H	H	W	S	D	I	N	I	T	Y	V	N	Y	L	H	Q	P	Q	V	A	A	V	F			

Section 2

	(49)	49	60	70	80	96																																											
M. auratus_GU172169	(1)	-----					HTVTNFFILNLAISDLLVGI																																										
M. musculus_NM_133192	(49)	I	S	S	Y	L	L	I	F	V	L	C	M	V	G	N	T	V	V	C	F	I	V	I	R	N	R	H	M	H	T	V	T	N	F	F	I	L	N	L	A	I	S	D	L	L	V	G	I
R. norvegicus_NM_023980	(49)	I	S	S	Y	F	L	I	F	F	L	C	M	V	G	N	T	V	V	C	F	V	I	R	N	R	Y	M	H	T	V	T	N	F	F	I	F	N	L	A	I	S	D	L	L	V	G	I	
H. sapiens_NM_053036	(49)	I	I	S	Y	F	L	I	F	F	L	C	M	G	N	T	V	V	C	F	I	V	M	R	N	K	H	M	H	T	V	T	N	L	F	I	L	N	L	A	I	S	D	L	L	V	G	I	
Consensus	(49)	I	S	S	Y	F	L	I	F	F	L	C	M	V	G	N	T	V	V	C	F	I	V	I	R	N	R	H	M	H	T	V	T	N	F	F	I	L	N	L	A	I	S	D	L	L	V	G	I

Section 3

	(97)	97	110	120	130	144																																											
M. auratus_GU172169	(21)	F	C	M	P	I	T	L	L	D	N	I	I	A	G	W	P	F	G	S	N	M	C	K	I	S	G	L	V	Q	G	I	S	V	A	S	V	F	T	L	V	A	I	A	V	D	S	E	
M. musculus_NM_133192	(97)	F	C	M	P	I	T	L	L	D	N	I	I	A	G	W	P	F	G	S	S	M	C	K	I	S	G	L	V	Q	G	I	S	V	A	A	S	V	F	T	L	V	A	I	A	V	D	R	E
R. norvegicus_NM_023980	(97)	F	C	M	P	I	T	L	L	D	N	I	I	A	G	W	P	F	G	S	S	M	C	K	I	S	G	L	V	Q	G	I	S	V	A	A	S	V	F	T	L	V	A	I	A	V	D	R	E
H. sapiens_NM_053036	(97)	F	C	M	P	I	T	L	L	D	N	I	I	A	G	W	P	F	G	N	T	M	C	K	I	S	G	L	V	Q	G	I	S	V	A	A	S	V	F	T	L	V	A	I	A	V	D	R	E
Consensus	(97)	F	C	M	P	I	T	L	L	D	N	I	I	A	G	W	P	F	G	S	S	M	C	K	I	S	G	L	V	Q	G	I	S	V	A	A	S	V	F	T	L	V	A	I	A	V	D	R	E

Section 4

	(145)	145	150	160	170	180	192																																									
M. auratus_GU172169	(69)	W	C	V	V	Y	P	F	K	P	K	L	T	V	K	T	A	F	V	T	I	V	I	I	W	G	L	A	G	A	I	M	S	P	S	A	V	M	L	H	V	Q	E	E	K	Y	C	V
M. musculus_NM_133192	(145)	R	C	V	V	Y	P	F	K	P	K	L	T	V	K	T	A	F	V	T	I	V	I	I	W	G	L	A	I	A	I	M	T	P	S	A	I	M	L	H	V	Q	E	E	K	Y	R	V
R. norvegicus_NM_023980	(145)	R	C	V	V	Y	P	F	K	P	K	L	T	V	K	T	A	F	V	M	I	V	I	I	W	G	L	A	I	T	I	M	T	P	S	A	I	M	L	H	V	Q	E	E	K	Y	R	V
H. sapiens_NM_053036	(145)	Q	C	V	V	Y	P	F	K	P	K	L	T	V	K	T	A	F	V	I	I	V	I	I	W	V	L	A	I	T	I	M	S	P	S	A	V	M	L	H	V	Q	E	E	K	Y	R	V
Consensus	(145)	R	C	V	V	Y	P	F	K	P	K	L	T	V	K	T	A	F	V	T	I	V	I	I	W	G	L	A	I	T	I	M	S	P	S	A	I	M	L	H	V	Q	E	E	K	Y	R	V

Section 5

	(193)	193	200	210	220	230	240																																										
M. auratus_GU172169	(117)	R	L	S	S	H	N	K	T	S	T	V	Y	W	C	R	E	D	W	P	K	Q	E	M	R	R	I	Y	T	T	V	L	F	A	T	I	Y	L	A	P	L	S	L	I	V	M	Y	A	
M. musculus_NM_133192	(193)	R	L	S	S	H	N	K	T	S	T	V	Y	W	C	R	E	D	W	P	R	H	E	M	R	R	I	Y	T	T	V	L	F	A	T	I	Y	L	A	P	L	S	L	I	V	I	M	Y	A
R. norvegicus_NM_023980	(193)	R	L	S	S	H	N	K	T	S	T	V	Y	W	C	R	E	D	W	P	N	Q	E	M	R	R	I	Y	T	T	V	L	F	A	T	I	Y	L	A	P	L	S	L	I	V	I	M	Y	A
H. sapiens_NM_053036	(193)	R	L	N	S	Q	N	K	T	S	P	V	Y	W	C	R	E	D	W	P	N	Q	E	M	R	K	I	Y	T	T	V	L	F	A	N	I	Y	L	A	P	L	S	L	I	V	I	M	Y	G
Consensus	(193)	R	L	S	S	H	N	K	T	S	T	V	Y	W	C	R	E	D	W	P	N	Q	E	M	R	R	I	Y	T	T	V	L	F	A	T	I	Y	L	A	P	L	S	L	I	V	I	M	Y	A

Section 6

	(241)	241	250	260	270	288																																										
M. auratus_GU172169	(165)	R	I	G	A	S	L	F	K	T	S	A	H	C	M	G	K	Q	R	Q	E	Q	W	H	V	S	-	K	K	Q	K	V	I	K	M	L	L	I	V	A	--	F	--	L	S	W	L	
M. musculus_NM_133192	(241)	R	I	G	A	S	L	F	K	T	A	A	H	C	T	G	K	Q	R	P	V	Q	W	H	V	S	-	K	K	Q	K	V	I	K	M	L	L	T	V	A	L	L	F	I	L	S	W	L
R. norvegicus_NM_023980	(241)	R	I	G	A	S	L	F	K	T	S	A	H	S	T	G	K	Q	R	L	E	Q	W	H	V	S	-	K	K	Q	K	V	I	K	M	L	L	T	V	A	L	L	F	I	L	S	W	L
H. sapiens_NM_053036	(241)	R	I	G	I	S	L	F	R	A	A	V	P	H	T	G	R	K	N	Q	E	Q	W	H	V	S	-	K	K	Q	K	I	K	M	L	L	I	V	A	L	L	F	I	L	S	W	L	
Consensus	(241)	R	I	G	A	S	L	F	K	T	A	A	H	C	T	G	K	Q	R	Q	E	Q	W	H	V	S	-	K	K	Q	K	V	I	K	M	L	L	T	V	A	L	L	F	I	L	S	W	L

Section 7

	(289)	289	300	310	320	336																																											
M. auratus_GU172169	(209)	P	L	W	T	L	M	M	L	S	D	Y	A	D	L	S	P	N	K	L	R	V	I	N	I	Y	I	Y	P	F	A	H	W	L	A	I	C	N	S	S	V	N	P	I	I	Y	G	F	F
M. musculus_NM_133192	(288)	P	L	W	T	L	M	M	L	S	D	Y	T	D	L	S	P	N	K	L	R	I	N	I	Y	I	Y	P	F	A	H	W	L	A	F	C	N	S	S	V	N	P	I	I	Y	G	F	F	
R. norvegicus_NM_023980	(288)	P	L	W	T	L	M	M	L	S	D	Y	A	D	L	S	P	N	K	L	R	V	I	N	I	Y	Y	P	F	A	H	W	L	A	F	C	N	S	S	V	N	P	I	I	Y	G	F	F	
H. sapiens_NM_053036	(289)	P	L	W	T	L	M	M	L	S	D	Y	A	D	L	S	P	N	E	L	Q	I	N	I	Y	I	Y	P	F	A	H	W	L	A	F	G	N	S	S	V	N	P	I	I	Y	G	F	F	
Consensus	(289)	P	L	W	T	L	M	M	L	S	D	Y	A	D	L	S	P	N	K	L	R	I	N	I	Y	I	Y	P	F	A	H	W	L	A	F	C	N	S	S	V	N	P	I	I	Y	G	F	F	

Section 8

	(337)	337	350	360	370	384																																										
M. auratus_GU172169	(257)	N	E	N	F	R	S	G	F	Q	A	F	Q	P	--	A	-----																															
M. musculus_NM_133192	(336)	N	E	N	F	R	N	G	F	Q	A	F	Q	Q	--	I	C	Q	K	K	A	K	P	Q	E	A	Y	S	L	R	A	K	R	N	I	V	I	N	T	S	G	L	L	V	Q	E	P	V
R. norvegicus_NM_023980	(336)	N	E	N	F	R	S	G	F	Q	A	F	Q	Q	--	F	C	Q	K	K	V	K	P	Q	E	A	Y	G	L	R	A	K	R	N	I	D	I	N	T	S	G	L	L	V	H	E	P	A
H. sapiens_NM_053036	(337)	N	E	N	F	R	R	G	F	Q	A	F	Q	L	Q	--	I	C	Q	K	R	A	K	E	M	E	A	Y	A	L	K	A	K	S	H	V	I	N	T	S	N	Q	L	V	Q	E	S	T
Consensus	(337)	N	E	N	F	R	S	G	F	Q	A	F	Q	Q	--	I	C	Q	K	K	A	K	P	Q	E	A	Y	A	L	R	A	K	R	N	I	L	I	N	T	S	G	L	L	V	Q	E	P	

Section 9

	(385)	385	390	400	410	421																																
M. auratus_GU172169	(271)	-----					-----																															
M. musculus_NM_133192	(382)	S	Q	N	P	G	G	E	N	L	G	C	G	K	S	A	D	N	P	T	Q	E	S	L	E	E	M	G	E	A	T	N	S	T	V	A	--	
R. norvegicus_NM_023980	(382)	S	Q	N	P	S	G	E	N	L	G	C	R	K	S	A	D	N	P	T	Q	E	S	L	M	E	E	T	G	E	A	T	N	S	T	E	T	--
H. sapiens_NM_053036	(385)	F	Q	N	P	H	G	E	T	L	L	Y	R	K	S	A	E	K	E	Q	E	L	V	M	E	E	T	K	E	T	N	S	S	E	I	--		
Consensus	(385)	S	Q	N	P	G	E	N	L	G	C	R	K	S	A																							