

**Figure S3** Partial nucleotide alignment of *TYR* in feline and other species. *TYR* nucleotide sequences are aligned from wildtype cat (*Felis catus*), mocha colored cat, dog [*Canis familiaris*; NC\_006603.3 (CanFam3.1)], rabbit [*Oryctolagus cuniculus*; NC\_013669.1 (OryCun2.0)], cow [*Bos Taurus*; NC\_037356.1 (ARS-UCD1.2)], human [*Homo sapiens*; NC\_000011.10 (GRCh38.p12)], mouse [*Mus musculus*; NC\_000073.6 (GRCm38.p4)]. Intronic sequence is lowercase; exonic sequence is uppercase. Identical nucleotides to *Felis catus* are represented as dot (.). Nucleotides deleted in the mocha-coated cat are represented as a dash (-). Sequence is presented from the 3' portion of exon 1 to the 5' portion of exon 3. Green bars indicate additional intronic sequence. An asterisk (\*) indicates the Siamese 'pointed' mutation (p.Gly302Arg). The mocha-coated cat has a 39 amino acid deletion (yellow highlight) and two amino acid insertion (pink highlight) caused by the presence of the new splicing acceptor site (tag) followed by the intronic 6 bp 5' of the duplicated partial exon 2 (blue highlight). Therefore, the mocha-coated cat has a 117-bp deletion concurrent with a 6-bp alternative transcription resulting in the c.820\_936delinsAATCTC (p.Ile274\_Leu312delinsAsnLeu) altered transcript.

	Exon 1	Intron 1	Intron 1	Exon 2	
				I I C T R L E E Y N	
Felis catus (wildtype)	CTCTTGGCAG	gtaagacatc	ttttgtgtag	ATCATCTGTA CCCGATTGGA	GGAGTACAAT
Felis catus (mocha)	.....	.....	.....	.....	.....
Canis familiaris	.....	.....	.....	...G...C. ....C...	.....C
Oryctolagus cuniculus	.....tg.a	.....ac..	..T.....	G...G.....	.....
Bos Taurus	.....gtg.g	..C...c.	..G...C.	G.A..C....	.....C
Homo sapiens	.....t.g	.....ac..	..TG....	G.....	.....C
Mus musculus	..C.....	.....tgca	..tcac..	...T....	G.A...CA. A...T..
Consensus	ctcttggcag	gtaagatntn	TTTTGTNCAG	ATCNTCTGTA GCCGATTGGA	GGAGTACAAN 60
					*
	S R Q A L C	D G T P	E G P L L R	N P G N	
Felis catus (wildtype)	AGCCGTCAGG	CTTTATGTGA	TGGAACTCCA	GAGGGACCAT TACTGCGCAA	TCCCGGAAAC
Felis catus (mocha)	.....	.....	.....	.....	.....
Canis familiaris	....A...	.....C..	.....	.....G. ....	..T.G..
Oryctolagus cuniculus	....A...A	GC.....A.	..C...T.C	.....C. .G.....	..T.....
Bos Taurus	..T..C...	.....CA.	C..G..GT.T	.....	..T.....
Homo sapiens	....A...T	.....CA.	.....G..C	.....T. ....	..G..T..
Mus musculus	....A...T	.....C..	.....A..T	.....C ..T.A..T..	..T.....
Consensus	AGCCGTCAGG	CTTTATGCNA	TGGAACTCCN	GAGGGACCAT TACTGCGCAA	TCCTGGAAAC 120
	H D K A R T	P R L P	S S A D V E	F C L S	
Felis catus (wildtype)	CATGACAAAG	CCAGGACCCC	AAGGCTCCCC	TCCTCTGCTG ATGTGGAATT	TTGCCTAAGT
Felis catus (mocha)	.....	.....	.....	.....	.....
Canis familiaris	.....	.....	..A.....	.....	C....G..
Oryctolagus cuniculus	.....	.....T..	G.....	....AT.A.	.....
Bos Taurus	..C.....	.....A.G	G.....	.....G....	.....G..
Homo sapiens	.....T	..A.....	.....	..T.A....	.....A....
Mus musculus	.....	..AA.....	C.....A	..T.A..A.	.....T..G..
Consensus	CATGACAAAG	CCAGGACCCC	AAGGCTCCCC	TCCTCAGCTG ATGTGGAATT	TTGCCTGAGT 180
	L T Q Y E S	D S M D	K A A N F S	F R N T	
Felis catus (wildtype)	CTGACACAAT	ATGAATCGGA	TTCCATGGAT	AAAGCTGCCA ATTTACGCTT	TAGGAATACA
Felis catus (mocha)	.....	.....	.....	.....	.....
Canis familiaris	.....C..G.	.....	.....	.....	.....A.....
Oryctolagus cuniculus	.....C..G.	.....T.G	.....C	.....	.....A.....
Bos taurus	T....C..G.	.....A.G	.....	.....	.....A....C
Homo sapiens	T....C...	.....T.G	.....	.....	.....A.....
Mus musculus	T....C..G.	.....T.G	A..A.....	.G.A.....	.....A..C...
Consensus	NTGACCCAGT	ATGAATCTGG	TTCCATGGAT	AAAGCTGCCA ATTTACGCTT	TAGAAATACA 240
	L E				
Felis catus (wildtype)	CTGGAAGgta	actcccattt	atcaactcatt	taaaatttct tctgtttttc	tgaatcatgt
Felis catus (mocha)	.....	.....	.....	.....	.....
Canis familiaris	.....	..c...ccga	cctttat.c.	c.tttaaaa. .tct.c.g.t	.ttc.g.ac.
Oryctolagus cuniculus	.....	.g...tt.a	t.tcaactca.	atth...t. .t.tc.gaat	.tgtgtt.a.
Bos taurus	.....	.acg.tt..	c.ttt.tt..	.c.ctca.t. aaat..cct	.ttt..tgaa
Homo sapiens	.....	.tct.tt.c.	t.tcaact..	a.ttt...t. ctgaa..cat	attta.gtc
Mus musculus	.....	.tat..t.g.	g.tca.t.a.	.ttg...t. .t.aa...at	aatt..t.t.
Consensus	CTGGAAGgta	ancccntntn	nttcattatt	tatntntttt tttttttnat	tttttcntnt 300
	N I				
Felis catus (wildtype)	ttagaatctc	ttaccaacag	GATTTGCTAG		
Felis catus (mocha)	.....	.....	.....		
Canis familiaris	cct.tt.a.a	C.....	.....		
Oryctolagus cuniculus	aatctc.ta.	.....	.....A		
Bos taurus	..tatg.t.a	.g.....	.....GA		
Homo sapiens	.ctt.tc.aa	.a.tg....	.....		
Mus musculus	caga...tct	a.tt.....	.....C..		
Consensus	tntnnntta	ttaccaacag	GATTTGCTAG		330
	Intron 2	Intron 2	Exon 3		