

## Supplementary Materials

**Supplementary Table S1.** Mouse Ref-Seq sequences of mRNAs containing at least (CTG)<sub>7</sub> or (CAG)<sub>7</sub> repeat tract.

Repeat sequence	Gene name	Gene description
CTG	Angel1	angel homolog 1 ( <i>Drosophila</i> ) (Angel1), mRNA
CTG	Armxc6	armadillo repeat containing, X-linked 6 (Armxc6), mRNA
CTG	Cpd	carboxypeptidase D (Cpd), mRNA
CTG	Coch	coagulation factor C homolog ( <i>Limulus polyphemus</i> ) (Coch), mRNA
CTG	Crb2	crumbs homolog 2 ( <i>Drosophila</i> ) (Crb2), mRNA
CTG	Cyp2s1	cytochrome P450, family 2, subfamily s, polypeptide 1 (Cyp2s1), mRNA
CTG	Cpeb3	cytoplasmic polyadenylation element binding protein 3 (Cpeb3), mRNA
CTG	Ctu2	cytosolic thiouridylase subunit 2 homolog ( <i>S. pombe</i> ) (Ctu2), mRNA
CTG	Efna2	ephrin A2 (Efna2), mRNA
CTG	Efna3	ephrin A3 (Efna3), mRNA
CTG	Fbxo21	F-box protein 21 (Fbxo21), mRNA
CTG	Frem2	Fras1 related extracellular matrix protein 2 (Frem2), mRNA
CTG	Fuca1	fucosidase, alpha-L- 1, tissue (Fuca1), mRNA
CTG	<b>Fgd4</b>	FYVE, RhoGEF and PH domain containing 4 (Fgd4), transcript variant gamma, mRNA
CTG	Gpr3711	G protein-coupled receptor 37-like 1 (Gpr3711), mRNA
CTG	Greb1	gene regulated by estrogen in breast cancer protein (Greb1), mRNA
CTG	Heg1	HEG homolog 1 (zebrafish) (Heg1), mRNA
CTG	Hsd3b6	hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 6 (Hsd3b6), mRNA
CTG	Inhbe	inhibin beta E (Inhbe), mRNA
CTG	Itgav	integrin alpha V (Itgav), mRNA
CTG	Klc1	kinesin light chain 1 (Klc1), transcript variant d, mRNA
CTG	Mrpl1	mitochondrial ribosomal protein L1 (Mrpl1), nuclear gene encoding mitochondrial protein mRNA
CTG	<b>Mapkap1</b>	mitogen-activated protein kinase associated protein 1 (Mapkap1), mRNA
CTG	<b>Milt3</b>	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i> ); translocated to, 3 (Milt3) mRNA
CTG	Ngfr	nerve growth factor receptor (TNFR superfamily, member 16) (Ngfr), mRNA
CTG	Ndr3	N-myc downstream regulated gene 3 (Ndr3) mRNA
CTG	Ncapd3	non-SMC condensin II complex, subunit D3 (Ncapd3), mRNA
CTG	Pla2g15	phospholipase A2, group XV (Pla2g15), mRNA
CTG	Kcna6	potassium voltage-gated channel, shaker-related, subfamily, member 6 (Kcna6), mRNA
CTG	<b>Pcolce</b>	procollagen C-endopeptidase enhancer protein (Pcolce), mRNA
CTG	Pacsin2	protein kinase C and casein kinase substrate in neurons 2 (Pacsin2) mRNA
CTG	Ppp1cc	protein phosphatase 1, catalytic subunit, gamma isoform (Ppp1cc), mRNA
CTG	Ramp2	receptor (calcitonin) activity modifying protein 2 (Ramp2), mRNA
CTG	Arhgap28	Rho GTPase activating protein 28 (Arhgap28), mRNA
CTG	Scube2	signal peptide, CUB domain, EGF-like 2 (Scube2), mRNA
CTG	Sorcs2	sortilin-related VPS10 domain containing receptor 2 (Sorcs2), mRNA
CTG	Spsb4	splA/ryanodine receptor domain and SOCS box containing 4 (Spsb4), mRNA
CTG	<b>Txlnb</b>	taxilin beta (Txlnb), mRNA
CTG	Ttc7	tetratricopeptide repeat domain 7 (Ttc7), mRNA
CTG	Tacc1	transforming, acidic coiled-coil containing protein 1 (Tacc1) mRNA
CTG	Tmem28	transmembrane protein 28 (Tmem28), mRNA
CTG	<b>Tnfrsf22</b>	tumor necrosis factor receptor superfamily, member 22 (Tnfrsf22), mRNA
CTG	Tnfrsf25	tumor necrosis factor receptor superfamily, member 25 (Tnfrsf25), mRNA

  

Repeat sequence	Gene name	Gene description
CAG	Atrx	alpha thalassemia/mental retardation syndrome X-linked homolog (human) (Atrx), mRNA
CAG	Ankhd1	ankyrin repeat and KH domain containing 1 (Ankhd1), mRNA
CAG	Aak1	AP2 associated kinase 1 (Aak1) mRNA
CAG	Arid3b	AT rich interactive domain 3B (BRIGHT-like) (Arid3b), mRNA
CAG	Bmp6	bone morphogenetic protein 6 (Bmp6), mRNA
CAG	Brf2	BRF2, subunit of RNA polymerase III transcription initiation factor, BRF1-like (Brf2), mRNA
CAG	Brpf1	bromodomain and PHD finger containing, 1 (Brpf1), mRNA

CAG	Brd4	bromodomain containing 4 (Brd4) mRNA
CAG	Brdt	bromodomain, testis-specific (Brdt) mRNA
CAG	Capn6	calpain 6 (Capn6), mRNA
CAG	Cpd	CD74 antigen (invariant polypeptide of major histocompatibility complex, class II antigen-associated) (Cd74) mRNA
CAG	Chga	chromogranin A (Chga), mRNA
CAG	Clock	circadian locomotor output cycles kaput (Clock), mRNA
CAG	Cpsf4	cleavage and polyadenylation specific factor 4 (Cpsf4), mRNA
CAG	Cxxc1	CXXC finger 1 (PHD domain) (Cxxc1), mRNA
CAG	<b>Dap</b>	death-associated protein (Dap), mRNA
CAG	Dner	delta/notch-like EGF-related receptor (Dner), mRNA
CAG	Dennd4b	DENN/MADD domain containing 4B (Dennd4b), mRNA
CAG	Dusp8	dual specificity phosphatase 8 (Dusp8), mRNA
CAG	Ep300	E1A binding protein p300 (Ep300), mRNA
CAG	Ep400	E1A binding protein p400 (Ep400) mRNA
CAG	E2f4	E2F transcription factor 4 (E2f4), mRNA
CAG	Ecsr	endothelial cell-specific chemotaxis regulator (Ecsr), mRNA
CAG	Edc4	enhancer of mRNA decapping 4 (Edc4), mRNA
CAG	Fam155a	family with sequence similarity 155, member A (Fam155a), mRNA
CAG	Fam168b	family with sequence similarity 168, member B (Fam168b) mRNA
CAG	Fam170b	family with sequence similarity 170, member B (Fam170b), mRNA
CAG	Fam171b	family with sequence similarity 171, member B (Fam171b), mRNA
CAG	Fam53b	family with sequence similarity 53, member B (Fam53b), mRNA
CAG	Fbxo38	F-box protein 38 (Fbxo38), mRNA
CAG	Fgfr2	fibroblast growth factor receptor 2 (Fgfr2) mRNA
CAG	Foxp1	forkhead box P1 (Foxp1), mRNA
CAG	Gpr137b	G protein-coupled receptor 137B (Gpr137b), mRNA
CAG	Gls	glutaminase (Gls), nuclear gene encoding mitochondrial protein mRNA
CAG	Glrp1	glutamine repeat protein 1 (Glrp1), mRNA
CAG	Glyctk	glycerate kinase (Glyctk) mRNA
CAG	Gigyf1	GRB10 interacting GYF protein 1 (Gigyf1), mRNA
CAG	Gigyf2	GRB10 interacting GYF protein 2 (Gigyf2) mRNA
CAG	Gas2	growth arrest specific 2 (Gas2), mRNA
CAG	Gab3	growth factor receptor bound protein 2-associated protein 3 (Gab3), mRNA
CAG	Bat2l	HLA-B associated transcript 2-like (Bat2l) mRNA
CAG	Bat2l2	HLA-B associated transcript 2-like 2 (Bat2l2), mRNA
CAG	Hcn1	hyperpolarization-activated, cyclic nucleotide-gated K+ 1 (Hcn1), mRNA
CAG	Igsf10	immunoglobulin superfamily, member 10 (Igsf10), mRNA
CAG	Ing2	inhibitor of growth family, member 2 (Ing2), mRNA
CAG	Irs1	insulin receptor substrate 1 (Irs1), mRNA
CAG	Il2	interleukin 2 (Il2), mRNA
CAG	Ivl	involucrin (Ivl), mRNA
CAG	Kdm6b	KDM1 lysine (K)-specific demethylase 6B (Kdm6b), mRNA
CAG	Krt76	keratin 76 (Krt76), mRNA
CAG	Maml2	mastermind like 2 (Drosophila) (Maml2) mRNA
CAG	Maml3	mastermind like 3 (Drosophila) (Maml3), mRNA
CAG	Mamld1	mastermind-like domain containing 1 (Mamld1), mRNA
CAG	Med15	mediator complex subunit 15 (Med15) mRNA
CAG	Med12l	mediator of RNA polymerase II transcription, subunit 12 homolog (yeast)-like (Med12l), mRNA
CAG	Mn1	meningioma 1 (Mn1), mRNA
CAG	Mblac2	metallo-beta-lactamase domain containing 2 (Mblac2), mRNA
CAG	Mink1	misshapen-like kinase 1 (zebrafish) (Mink1) mRNA
CAG	Mkl1	MKL (megakaryoblastic leukemia)/myocardin-like 1 (Mkl1) mRNA
CAG	Megf10	multiple EGF-like-domains 10 (Megf10), mRNA
CAG	Mll2	myeloid/lymphoid or mixed-lineage leukemia 2 (Mll2), mRNA
CAG	Mll3	myeloid/lymphoid or mixed-lineage leukemia 3 (Mll3), mRNA
CAG	Myocd	myocardin (Myocd), transcript variant A, mRNA
CAG	Nrg2	neuregulin 2 (Nrg2), mRNA
CAG	Nav2	neuron navigator 2 (Nav2) mRNA
CAG	Nrk	Nik related kinase (Nrk), mRNA
CAG	Nufip2	nuclear fragile X mental retardation protein interacting protein 2 (Nufip2), mRNA
CAG	Ncor1	nuclear receptor co-repressor 1 (Ncor1), mRNA
CAG	<b>Nr3c1</b>	nuclear receptor subfamily 3, group C, member 1 (Nr3c1), mRNA
CAG	Nolc1	nucleolar and coiled-body phosphoprotein 1 (Nolc1) mRNA
CAG	Nup54	nucleoporin 54 (Nup54), mRNA

CAG	Nap1l3	nucleosome assembly protein 1-like 3 (Nap1l3), mRNA
CAG	Otx2os1	Otx2 opposite strand transcript 1 (Otx2os1), non-coding RNA
CAG	Paxip1	PAX interacting (with transcription-activation domain) protein 1 (Paxip1), mRNA
CAG	Pprc1	peroxisome proliferative activated receptor, gamma, coactivator-related 1 (Pprc1), mRNA
CAG	Phlpp1	PH domain and leucine rich repeat protein phosphatase 1 (Phlpp1), mRNA
CAG	Phf21a	PHD finger protein 21A (Phf21a) mRNA
CAG	Plekhm3	pleckstrin homology domain containing, family M, member 3 (Plekhm3), mRNA
CAG	Kcnn3	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 3 (Kcnn3), mRNA
CAG	Kcnh3	potassium voltage-gated channel, subfamily H (eag-related), member 3 (Kcnh3), mRNA
CAG	Pou3f2	POU domain, class 3, transcription factor 2 (Pou3f2), mRNA
CAG	Pou4f1	POU domain, class 4, transcription factor 1 (Pou4f1), mRNA
CAG	Pum2	pumilio 2 (Drosophila) (Pum2) mRNA
CAG	Rpa1	replication protein A1 (Rpa1) mRNA
CAG	Rbm33	RNA binding motif protein 33 (Rbm33), mRNA
CAG	Runx2	runt related transcription factor 2 (Runx2) mRNA
CAG	Sec24b	Sec24 related gene family, member B ( <i>S. cerevisiae</i> ) (Sec24b), mRNA
CAG	Sel1l3	sel-1 suppressor of lin-12-like 3 ( <i>C. elegans</i> ) (Sel1l3), mRNA
CAG	Srrm4	serine/arginine repetitive matrix 4 (Srrm4), mRNA
CAG	Siah1b	seven in absentia 1B (Siah1b), mRNA
CAG	Sry	sex determining region of Chr Y (Sry), mRNA
CAG	Sik3	SIK family kinase 3 (Sik3), mRNA
CAG	Slc43a3	solute carrier family 43, member 3 (Slc43a3), mRNA
CAG	Spnb5	spectrin beta 5 (Spnb5), mRNA
CAG	Speg	SPEG complex locus (Speg) mRNA
CAG	Spn	SPEN homolog, transcriptional regulator ( <i>Drosophila</i> ) (Spn), mRNA
CAG	Sf1	splicing factor 1 (Sf1) mRNA
CAG	Sfrs15	splicing factor, arginine/serine-rich 15 (Sfrs15), mRNA
CAG	St6galnac5	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 5 (St6galnac5), mRNA
CAG	Smarca2	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 2 (Smarca2) mRNA
CAG	Tet2	tet oncogene family member 2 (Tet2), mRNA
CAG	Tanc2	tetratricopeptide repeat, ankyrin repeat and coiled-coil containing 2 (Tanc2), mRNA
CAG	Trappc9	trafficking protein particle complex 9 (Trappc9) mRNA
CAG	Tcf20	transcription factor 20 (Tcf20) mRNA
CAG	Tcf7	transcription factor EB (Tcf7) mRNA
CAG	Tob1	transducer of ErbB-2.1 (Tob1), mRNA
CAG	Trp63	transformation related protein 63 (Trp63) mRNA
CAG	Tnrc18	trinucleotide repeat containing 18 (Tnrc18), transcript variant A, mRNA
CAG	Tnrc6b	trinucleotide repeat containing 6b (Tnrc6b) mRNA
CAG	Tsc22d1	TSC22 domain family, member 1 (Tsc22d1) mRNA
CAG	Tusc5	tumor suppressor candidate 5 (Tusc5), mRNA
CAG	Usp7	ubiquitin specific peptidase 7 (Usp7), mRNA
CAG	Vezf1	vascular endothelial zinc finger 1 (Vezf1), mRNA
CAG	Celf3	VCUGBP, Elav-like family member 3 (Celf3), mRNA
CAG	Zfhx3	zinc finger homeobox 3 (Zfhx3), mRNA
CAG	Zfp295	zinc finger protein 295 (Zfp295) mRNA
CAG	Zfp384	zinc finger protein 384 (Zfp384), mRNA
CAG	Zfp609	zinc finger protein 609 (Zfp609), mRNA
CAG	Zfp773	zinc finger protein 773 (Zfp773), mRNA
CAG	Zfc3h1	zinc finger, C3H1-type containing (Zfc3h1), mRNA
CAG	Zcchc10	zinc finger, CCHC domain containing 10 (Zcchc10), mRNA

yellow, transcripts with CAG repeats analyzed in this study

orange, transcripts with CUG repeats analyzed in this study

blue, genes with medium and high level of expression in mouse skeletal muscles