**> dCTNS (CG17119) cDNA (3R)** sgRNA

 **Exon1 (not included)**

 **GGCTTCATTGAAGAAGATGCCAG Exon2**

**CAGGACTGGATGCTCATGCATGAATAAGTTGAACGTTGAACGCAAGCAGA**

**ATGGATTTCAGCACACACCGCCTGACCACTTTGCTGCTCCTCCTCCTGGC Primer pair 2 (gRNA2)**

**CACAGTTGCCCTGGGAAATGCCCAAAGCAGTCAGCTCACCGTCGATTCCC Exon3 GGTGATGTCATGGGAATCGACGG**

**ATGACATCACCGTTCTGCTGAACAGCAACGAGACTTTTCTGGTGTTCGCC (Strand + to genome annot)**

**AACGGATTGCTAGACAGCGACGTGGAAGTTGCGCTGGGAACAGATTCGGA Exon4 Primer pair 3 (gRNA3)**

**GGATCATTTGCTCCTCGATCCCGCAACGTTTGTGTATCCAGCGGGCAGTA GGGCAGTACTCGAAATCAGTCGG**

**CTCGAAATCAGTCGGTGGTGATAACTGGCCTCAAAGCCGGCAACGTCAAA (Strand – to genome annot)**

**GTGGTCGCAGATAGCGATGATGCGAACAAAGAGATTGTGAAGGATGTGTT Exon5 Primer pair 1 (gRNA1)**

**CGTACGCGTGACTGTGGCCAAATCGAGAGCTTTGATCTACACCTCCATCA GAACAGCAACGAGACTTTTCTGG**

**TCTTTGGCTGGGTTTACTTTGTGGCCTGGTCGGTGTCCTTCTATCCGCAG (Strand – to genome annot)**

**ATCTGGAGCAACTATCGCCGCAAGTCCGTCGAGGGACTGAACTTTGATTT**

**CCTGGCCCTCAATATCGTGGGCTTCACCCTGTACAGCATGTTCAACTGCG**

**GCCTCTATTTCATCGAGGATCTGCAGAACGAGTACGAGGTGCGATATCCG**

**CTGGGAGTGAATCCTGTGATGCTCAACGACGTGGTCTTCTCACTGCATGC**

**CATGTTCGCCACCTGCATTACGATCCTTCAGTGCTTTTTCTATCAGAGAG Exon6**

**CACAGCAAAGGGTGTCGTTCATTGCCTACGGAATATTGGCCATCTTCGCC**

**GTGGTGGTCGTCGTGTCTGCCGGTTTGGCCGGAGGATCCGTCATCCATTG**

**GCTGGACTTTCTGTACTACTGCAGTTACGTCAAGCTAACCATTACCATCA**

**TCAAGTACGTGCCGCAAGCTCTGATGAACTATCGCCGGAAGAGCACCTCC**

**GGCTGGAGCATCGGCAACATTCTGCTGGATTTCACGGGAGGAACGCTGAG**

**CATGCTGCAAATGATTCTGAATGCTCATAATTACGATGATTGGGTGTCGA Exon7**

**TTTTCGGTGATCCCACCAAATTCGGACTGGGTCTGTTTTCCGTGCTCTTC**

**GATGTGTTCTTCATGCTGCAGCACTATGTGTTTTACAGGCATTCGAGGGA Exon8**

**ATCCTCGAGCTCTGACCTCACCACCGTGACCGATGTTCAAAATCGAACAA**

**ATGAGTCGCCGCCGCCGAGCGAAGTGACGACTGAGAAATATTAGAGCTGC**

**ATTATCATATGTCTGCTGTAGAGAAAGACTTTTGTGCCAGTAGCGCTTTA**

**TGTACATTTTTAGAATTGTAAATATATCCGTATGCCGTAGCTGCCTAAGC**

**TTTGTATAGTCGCGCTTTGATACTCGAGAAGAATCGACGCGCCGGCCAGA Exon9**

**ACCAGAACCAAAACCAGTGACCCGGTGACCAG**

WT:

**ATG.**GAT.TTC.AGC.ACA.CAC.CGC.CTG.ACC.ACT.TTG.CTG.CTC.CTC.CTC.CTG.GC

C.ACA.GTT.GCC.CTG.GGA.AAT.GCC.CAA.AGC.AGT.CAG.CTC.ACC.GTC.GAT.TCC.C

AT.GAC.ATC.ACC.GTT.CTG.CTG.AAC.AGC.AAC.GAG.ACT.TTT.CTG.GTG.TTC.GCC.

AAC.GGA.TTG.CTA.GAC.AGC.GAC.GTG.GAA.GTT.GCG.CTG.GGA.ACA.GAT.TCG.GA

G.GAT.CAT.TTG.CTC.CTC.GAT.CCC.GCA.ACG.TTT.GTG.TAT.CCA.GCG.GGC.AGT.A

CT.CGA.AAT.CAG.TCG.GTG.GTG.ATA.ACT.GGC.CTC.AAA.GCC.GGC.AAC.GTC.AAA.

GTG.GTC.GCA.GAT.AGC.GAT.GAT.GCG.AAC.AAA.GAG.ATT.GTG.AAG.GAT.GTG.TT

WT:

**ATG**GATTTCAGCACACACCGCCTGACCACTTTGCTGCTCCTCCTCCTGGCCACAGTTGCCCTGGGAAATGCCCAAAGCAGTCAGCTCACCGTCGATTCCCATGACATCACCGTTCTGCTGAACAGCAACGAGACTTTTCTGGTGTTCGCCAACGGATTGCTAGACAGCGACGTGGAAGTTGCGCTGGGAACAGATTCGGAGGATCATTTGCTCCTCGATCCCGCAACGTTTGTGTATCCAGCGGGCAGTACTCGAAATCAGTCGGTGGTGATAACTGGCCTCAAAGCCGGCAACGTCAAAGTGGTCGCAGATAGCGATGATGCGAACAAAGAGATTGTGAAGGATGTGTT

MDFSTHRLTTLLLLLLATVALGNAQSSQLTVDSHDITVLLNSNETFLVFANGLLDSDVEVALGTDSEDHLLLDPATFVYPAGSTRNQSVVITGLKAGNVKVVADSDDANKEIVKDV

dCTNS MUTANT:

**ATG**GATTTCAGCACACACCGCCTGACCACTTTGCTGCTCCTCCTCCTGGCCACAGTTGCCCTGGGAAATGCCCAAAGCAGTCAGCTCACCGTCGATTCCCATGACATCACCGTTCTGCTGAACAGCAACGAGACTTTTCTGGTGTTCGCCAACGGATTGCTAGACAGCGACGTGGAAGTTGCGCTGGGAACAGATTCGGAGGATCATTTGCTCCTCGATCCCGCAACGTTTGTGTATCCAGCGGGCAGTACacCAGTCGGTGGTGATAACTGGCCTCAAAGCCGGCAACGTCAAAGTGGTCGCAGA*TAG*\*CGA*TGA*\*TGCGAACAAAGAGATTGTGAAGGATGTGTT

MDFSTHRLTTLLLLLLATVALGNAQSSQLTVDSHDITVLLNSNETFLVFANGLLDSDVEVALGTDSEDHLLLDPATFVYPAGST*PVGGDNWPQSRQRQSGRR*\*R\*CEQRDCEGCV