Supplementary file 1: Codon optimized sequences used for the gene synthesis and cloning into the pcDNA3.1 vector for mammalian expression

>HumanGPR173\_SREB3\_GenEZ ORF Clone: GPR173\_OHu22489C\_pcDNA3.1(+)

GCCACCATGGCCAACACTACCGGAGAGCCTGAGGAGGTGAGCGGCGCTCTGTCCCCACCGTCCGCATCAGCTTATGTGAAGCTGGTACTGCTGGGACTGATTATGTGCGTGAGCCTGGCGGGTAACGCCATCTTGTCCCTGCTGGTGCTCAAGGAGCGTGCCCTGCACAAGGCTCCTTACTACTTCCTGCTGGACCTGTGCCTGGCCGATGGCATACGCTCTGCCGTCTGCTTCCCCTTTGTGCTGGCTTCTGTGCGCCACGGCTCTTCATGGACCTTCAGTGCACTCAGCTGCAAGATTGTGGCCTTTATGGCCGTGCTCTTTTGCTTCCATGCGGCCTTCATGCTGTTCTGCATCAGCGTCACCCGCTACATGGCCATCGCCCACCACCGCTTCTACGCCAAGCGCATGACACTCTGGACATGCGCGGCTGTCATCTGCATGGCCTGGACCCTGTCTGTGGCCATGGCCTTCCCACCTGTCTTTGACGTGGGCACCTACAAGTTTATTCGGGAGGAGGACCAGTGCATCTTTGAGCATCGCTACTTCAAGGCCAATGACACGCTGGGCTTCATGCTTATGTTGGCTGTGCTCATGGCAGCTACCCATGCTGTCTACGGCAAGCTGCTCCTCTTCGAGTATCGTCACCGCAAGATGAAGCCAGTGCAGATGGTGCCAGCCATCAGCCAGAACTGGACATTCCATGGTCCCGGGGCCACCGGCCAGGCTGCTGCCAACTGGATCGCCGGCTTTGGCCGTGGGCCCATGCCACCAACCCTGCTGGGTATCCGGCAGAATGGGCATGCAGCCAGCCGGCGGCTACTGGGCATGGACGAGGTCAAGGGTGAAAAGCAGCTGGGCCGCATGTTCTACGCGATCACACTGCTCTTTCTGCTCCTCTGGTCACCCTACATCGTGGCCTGCTACTGGCGAGTGTTTGTGAAAGCCTGTGCTGTGCCCCACCGCTACCTGGCCACTGCTGTTTGGATGAGCTTCGCCCAGGCTGCCGTCAACCCAATTGTCTGCTTCCTGCTCAACAAGGACCTCAAGAAGTGCCTGAGGACTCACGCCCCCTGCTGGGGCACAGGAGGTGCCCCGGCTCCCAGAGAACCCTACTGTGTCATGTGA

>OvulSREB\_pcDNA3.1(+)\_RXHP01028421.1 Octopus vulgaris isolate Ov12053 KQ416839, whole genome shotgun sequence

ACCATGCACACTGAAGTATACACACATGCGTCATATTCGTATTACTCGGAACCTCAGTATGTTCTTGCATTGAAGATCATTTCACTGGCTCTGATTATATTCACTGGTATTCTCGGCAACAGCATGGTTGTCTACACAATTATCAGAGACAAACGCTTACACCGGCCACCATTTTACTACCTGGTCAGTCTGGCCATGTCAGATTTAGCTAGATCAGTGTTTTGCCTGCCTTTTGTATTAACCACTGTAATCCAGGGTTATGTGTGGGTGTACGGCGAGAACGCATGTATCCTGGTCGGTTTCACAAACACTTTTTTTATCTACAGTTCTGCCGTAACTTTTCTCCTTATATCAGGCGACAGATATGTCGGGGTGGTACAGACTCGCTTCTATCGACGCAAATGTGGTGGTCTGCTGTCACTTGCGTTCATCGTGTTTGGATGGGGTGTGGCATTTTTAGTGTCTTTTCCACCTATCTTTGGGTTAGGTAGCTACACGTTTGTGCCAAGCGAAGCTCAATGTACTTATTCACACACACACTACAGGTCAAACGATACGCTCGTCTTTTTATTAGTGTTTACATTCATAATGAGTCTGTCCCTTCTTTATTATCGGATACTCATGTTTTTAAGAAACCATCGCAAAATGTACCCATTTTTCCATCAGCCTGCACGTAGTAACAACTGGACGTTTTTAGGGCCCGGCGCCAACGGACAGGCTTTAGTGAACTGGTTAAATGGTTTTACCGGGTTCAGACAAAACCCTTGGCTTAACCCTATAGCAGCTGGTTTTCAAATGCCCCCACGACAACTTGGACGGACAGTCAACTTAAAAGTTGTGAAAGGGGAACACCTCAGTCGACTGTTTTTCACCGTTACCCTTGTTTTCGACATCCTATGGGTCCCCTATTTGGTATTGTCTTACTGGCAGGTTTTCGAGGTTTCCCACCAGCTGTCGTCGACTTTCATTGGTGTGGCAGCATGGTGCAGCTATCTTGCAGTTGCGGTCAATCCGTTAGTGTATCTCTGCTGTAGTGGCACTTTGCGGAGAGCCTTTCGCCCGGAAATAGAAAGTTATTCAAAACGAGGTACCCTTAGAGAATAA

>OvulCCK1\_pcDNA3.1(+)\_OctVul6B026355P2\_ alsoannotatedas\_GKAX01375903.1 TSA: Octopus vulgaris Cluster-58773.37908, transcribed RNA sequence

ACCATGAATCTCACTGGGCATGGAATACTGGACGACAATGAGGCTGAGTTTATTGACAGGGACCTAGGCAGTAATATTGTCTATAACAAAACTAGTAACTACACAGTGAAACGCATGCATCATGCAAGTTTCCAAAAAGAAATCCTTATCCCTCCATATATAGCTATTTTCCTTCTAGCTGTTGTCGGGAATTTACTTGTTATATTGACTCTCGTGCAAAACAAACGCATGCGCACTGTCACCAATGTTTTTCTATTGAACTTGTCAATCAGTGATCTACTTTTGGCAGTATTTTGTATGCCATTTACGCTGATACCAGTCTTATTGCGGAACTTTATCTTTGGAGCTACAATGTGTGTACTTATACGCTACCTGCAAGGTGTTTCCGTAGCTGTCAGCTGTTTTACATTGGTTGCAATGTCTCTAGAACGATACTTCGGTATTTGTCAACCGCTGCATTCGAGGCGATGGCAGACTCTATCCAGAGCTTACAAAATCATCACTGGTTGTTGGTTTTTAGCTGCTATGGTTGTCATTCCGATTGCCATAGTCACGCGAATGAAATCGTTCGACAAAGGCAAGACACATGTCTGCCGGGAGTTTTGGACTTCGAAGATTGCAGAGAAATGTTACACTGTTTTTTTAGACATGGCTTTTCTGCTGATTCCTGTTATAATCATGTCAGGATCATACGGATCCATTATGTGGACGCTGTGGATGGGAATAAAAATGGATAAAAAGATGCAAGATGGAGAGAACCAACGAAATCAACCTGGTAACTCCATGCGCATGTGTGTCTTTGAAGGAAGCCCTTCAAGAAACTCTGAAAACCGGCCCATCGTCACACCCAAGCGTCGACGCTATGACCTCCAGTCGGGTGTACGTCAATCGAACTTGGACAGGAACGTAGCGGCTAAGAAGAGAGTCATTAAAATGCTCGCTGTTGTAGTATTGGAGTTTTTCGTCTGCTGGACTCCGCTGTTCTTTGCACAAACCTGGCTGGCTTTTGACGCCCGCACTGCCCATTCACACATCTCGCCCGTTGGCTTAGCTTTCATACATCTTCTGTCGTACGTGTCATCCTGCTGTAACCCAATCACCTACTGCTTTATGAACCGGAAATTCCGTGAGTCTTTCTTGGGGGCTTTCTGCTGCCGACGCAGACGAAGCCAGGCACCTGACATCGCTCAGTCAACATCACAGATAAGACAGGGAGAAAGTATAGCCACTGTGAACGCCTCCCTCAACTCAATCCGAATCCAGTTTGAACCGCCATTGAAGCATCTTCAGGAAATGAAACCGAACTTCAGTAACATAACAGAATCAGATGATACGTCCGACTCATAG

>ArubSREB\_pcDNA3.1(+)\_ArubXM\_033791678.1

GCCACCATGTCTCACATTATTACCACCAGGATCCGTCCTCCACCAGCCCGCCTGTCATTCGCACCGACTGGGATGAGCGAATTATCCACCGCGATGTCGACCCTACTGGATCTAGGATTTACGAACGGTAGTACGGGTTTGAATTCCTCTGCCGGGGACTCCATATCGGTGACTGCGAGGACGGTCCTCCATGCCGGGGTGCGGCCCGGGGAGGAGGGTGGAGGTGATGCCGACCTCCTCGCAGACGACCATGGTCCAAGAGTGCTATGGTGCGCCTCCCTCATCGTCGTGATTATCCTAAGTGTGGTTGGTAACGGCATCTTGGCACTCGTAGTGTTCGGAAACTCCAGACTTCGCAGGCCATCCTACTTCTTCCTCTTCAACTGCGCCCTGGCCGACTTCGTGCGCTCCCTGCTATGTTTCCCGTTCGTAGTCTCGGCCGTTGTCTCGCGGGATTGGATATATAGCAACTCACTGTGCGAGATTCTTGCCTTCTTCAACGTATACCTTACGTATGGGGTTTTATACACGCTGTTCCTGATCAGTATAGAACGGTATGTTGTACTGCGCTTTCACAGATTCCACCGGCAGAAGCTAAAAGGACCGGCTTGCCTACTACTAGTGCTTGCTTCATGGGCACTTGCCGTGTCCATGGCGTTCCCGCCTGTTTTTAACACGAGGACCTACTCCTTCATAGAGATTGAAAACCAGTGTACATTTAAGCACCAGGAATACAAGTCCAATGAGACTCTGTGCTTCCTCTTGTTCTTCGTTGCCGTCATTGCTTTCACACACTTCGCTTACTTTCGAGTTTTTCTCTTCATGCGCGCCCACCGCAAGATGCGACCTATGCAGTTCGTTCCTGCCGTCTCCAACAACTGGACCTTCTACGGGCCCGGTTCCACGGGACAGGCAGCCGCCAATTGGTTCCTTGGGTACCGCCAAGGTCCCACGCCGCCGCCCCTAATAGGGTTGGCGCCCCCTGCGAACGGCAACAGCACCTCGCTCTCCAAATCGGATTTCGAGCGGGAAGAGAAATTTAGCAAGCTGTCCTTGACCATCACGATTTCTTTTAGTGTGCTATGGCTGCCGTACACTGTGTACTGTTTCTGGCAGGTGTTCCAGCATAACAACCCTCTCCCGTATACCTACGTGTCCATAGCCACGTGGTTGACTTTTTTCCAGGCTTGCATCAACCCTATTCTGTGCTTCGTGGTAAGCAAGGAGTTCCGACAGATCGCACTGCAGCACGTGTTCGGTGCGTCGGCGTTCCAGCAGGAAGGACACAACGTGCAGTTGTGA

>ArubCCKR\_pcDNA3.1(+)

GCCACCATGGCGACTGCGACCACCGCCTACCCGTACTCGCTTATAGATAGCAGCCTTCCACCGGTCAATTCTACTTTCTTAGTGACCAGTATTGTGGATGTAAACTCGACGAACTCTTCGTTGATCACGGAGGATTTTGACGATGACCGTAACAGGGGCGTCCGGATCGGGTTCGGGTTGAATATCTACCTGACCGCTACGCTGTACGGTATCGTCTTCGTGCTGGCCATCGTGGGCAACATCTTGGTTCTCGTCACGCTGGCCCAGGATAAGAGGATGCGTACGGTGACCAACATGTTCCTGCTGAGTCTGGCCTTTAGCGATCTCCTCTTTGGTATATTCTGCATGCCGTTTACGGTGGTTGGGAACATGCTTGGACGATTCGTCTTCGGAGCTGTTATTTGCAAAATCGTACCGTACATTCAAGGTATATCAGTCACAGTGTCCGTATGGACCATGGTCGTCATATCACTGGAGAGGTATCATGCTATCTGCAACCCTCTGTCGTCACGTGTCTGGCAGACAAAAGCGCATGCGTACAAGGCCATAGTCGGGGTGTGGATGGTGGCTTTGTTTCTCAATCTACCAGCGGTAATCTTCAGCAAGTTATTCTCGTTCAACAGCGGCACCGTATTCAGATGCGATGAGATTTGGCCTGCTACACTCTATCGAACAATTTATAGGATGTGTTTGTTTGTGATTCTAATGGTGGCTCCACTCTTCACGATGCTCACTGCTTATGGCCTTATCATCCGAGAGCTACGTAGAGGCATGAAGCTTGAACAATGTGGAGCTGATAATGAGAAAAGGGAGAACGGAATAGCAATGAAGAACATGGGAGACGAAGCCTCCTGTAGCCTCAATGAGAAAAAAACTAAGAAATCCGACAAAAAGCCGGCACAAGCTACGATGCGGAGCACCTCAACCAGCGGGGCCAAGAAACGCGTCGTCAAGATGCTCATCGTCATCGTGGCGCTGTTCTTTGTCTGCTGGACACCATCTTGGGTCGGCAACATCTGGATCATGATCTCTGAGAAGAGCGCCAGCGAGCACTTCGGCCGGGCCGAGGTGACCATCTTCAAGCTGATGACGTACGCCTCGGCATGTGTCAACCCCATCGTCTACTGCTTCATGAATAAGCGTTTCCGACAGGGCTTCCTCAACGCGTTCTCATGCGGCCGGAGAGGACGCGCGGGGGACCGAGCCACGGCGAGCGGTGACGTCAGCCGATTTCAGTCGACACGGCGCACAAATGTGCCGCGACCTAGCCCAACGAATTACACTAACGTCTCGTCGGACTCTTCGGTGTAGCTTGGCGTCGGGAGAGGCTAACTAGCAGTCCTGGAACTTCATCTTTTGACCTTGTTCAAAAGGCATCGCCAGTTTCATTTTTGCAAAGGGCATTTC