**Supplementary table 1.** Primers using for plasmids construction and mutagenesis

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| Primer IDs | Sequence (5’-3’) |
| PANK2-F | AGGATCCCCGGGTACCGGTCGCCACCATGAGGAGGCTC |
| PANK2-R | ATAAGCTTGATATCGAATTCTCACGGGATCTTCAACAGCT |
| PKAN2-445-F | GGCTGCAGGTCGACTCTAGAGCCACCATGAGGAGGCTCGG |
| PANK2-445-R | GCTCGAGATCTGAGTCCGGACCCAGCCGACGAGACGGA |
| PANK2-833-F | GACCTGACTCTGTGTGGACACAAAGGCAATCTGCACTTT |
| PANK2-833-R | AAAGTGCAGATTGCCTTTGTGTCCACACAGAGTCAGGTC |
| PANK2-970-F | GAGCGTACAAATTTGAGCAGTATTTTCTCACAATAGGTG |
| PANK2-970-R | CACCTATTGTGAGAAAATACTGCTCAAATTTGTACGCTC |
| PANK2-1103-F | TACTTTGAAAACCCTGCTGGTTCTGAAAAGTGTCAGAAG |
| PANK2-1103-R | CTTCTGACACTTTTCAGAACCAGCAGGGTTTTCAAAGTA |
| PANK2-1133-F | GTGTCAGAAGTTACCATTTGGTTTGAAAAATCCGTATCC |
| PANK2-1133-R | GGATACGGATTTTTCAAACCAAATGGTAACTTCTGACAC |
| PANK2-1355-F | GTGGATAAACTAGTACGAGGTATTTATGGAGGGGACTATG |
| PANK2-1355-R | CATAGTCCCCTCCATAAATACCTCGTACTAGTTTATCCAC |
| PANK2-1470-F | GTCAGTAAAGAGGACCTGGCAGAGCGACTTTGATCACC |
| PANK2-1470-R | GCTCGAGATCTGAGTCCGGACAGGTCCTCTTTACTGACAGCCTC |
| PANK2-1499-F | CTTTGATCACCATCACCAACATCATTGGCTCAATAGCAAGAATG |
| PANK2-1499-R | CATTCTTGCTATTGAGCCAATGATGTTGGTGATGGTGATCAAAG |
| PANK2-1696-R | ATAAGCTTGATATCGAATTCTCACGGGATCTTCAACACCTCAAGGAG |