**Supplementary Table 1. Primer sequences**

|  |  |
| --- | --- |
| HTRA1-full lenth-F  HTRA1-full lenth -R  p.Arg274Trp-R  p.Arg274Trp-F  p.Val279Met-R  p.Val279Met-F  p.Gln318His-R  p.Gln318His-F | TATAGGGAGACCCAAGCTGGCTAGCGCCACCATGCAGATCCCGCGCGCCGCTCTTCTCCCGCTG  CAGCGGGTTTAAACGGGCCCTCTAGCTATGGGTCAATTTCTTCGG  ACTCTCCCGGCCACAGCTCTGAGGAG  CTCCTCAGAGCTGTGGCCGGGAGAGT  GATGGCGACCATGAACTCTCCCG  CGGGAGAGTTCATGGTCGCCATC  ATGGCGTCGGTgTGGATGTAGTCCA  TGGACTACATCCAcACCGACGCCAT |

p.Arg274Trp-R, p.Val279Met-R and p.Gln318His-R: Reverse primer of anterior segment of mutation point; p.Arg274Trp-F, p.Val279Met-F and p.Gln318His-F: Forward primer of posterius segment of mutation point.

**Supplemental Table 2. Clinical and imaging features of asymptomatic carriers**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Carriers Identifications | | |
| F1-V-2 | F1-V-6 | F2-III-1 |
| Age at examination, y | 27 | 25 | 26 |
| Gender | Female | Male | Male |
| Mutation (nucleotide) | c.954G>C | c.954G>C | c.835G>A |
| Stroke/TIA | - | - | - |
| Cognitive decline | - | - | - |
| Mood disorders | - | - | - |
| Alopecia | - | + | - |
| Spondylosis lesions | - | - | - |
| White matter lesions | - | Mild/minimal | - |
| Lacunar infarcts | - | - | - |
| Microbleed (SWI) | - | - | - |
| Brain atrophy | - | - | - |
| Scores of scales |  |  |
| MMSE | 28 | 20 | 29 |
| MoCA | 28 | 19 | 26 |
| HAMA | 7 | 7 | 3 |
| HAMD | 10 | 11 | 5 |

**Supplemental Figure 1. Cerebral small vessels with CD34 Ab stain.**

