

## **SUPPLEMENTARY MATERIAL**

The WES dataset was first queried for 200 neurodegenerative disease-related genes which included FTD- and PSP-related genes (*GRN*, *MAPT*, *TBK1*, *TARDBP*, *VCP*, *SQSTM1*, and *CHMP2B*). Subsequently, other genes associated with PSP were also queried (*STX6*, *EIF2AK3*, *MOBP*, *DCTN1*, *SYNJ1*, *FUS*, *VCP*, *CHMP2B*, *APP*, *PSEN1*, *PSEN2*, *ATP13A2*, *ATN1*, *NPC1/2*, *PRKN*, *DUSP10*, *SLCO1A2*, *CXCR4*, *BSN*, *LRP10*, *KANK2*, *DDR2*, *STOM*, *CLU*, *KANSL1*, and *C4A*).