**Supplementary Table 1.** A description of the first cohort of patients.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Patient** | **Affected** | **Sex** | **Age** | **comments** |
| **UKERfRJO-X-001** | **PD** | **M** | **45** | **heterozygous missense mutation in the EIF4G1 gene** |
| **UKERfR66-X-001** | **PD** | **M** | **55** |  |
| **UKERfAY6-X-001** | **PD** | **M** | **37** |  |
| **UKERfO3H-X-001** | **Control** | **M** | **71** |  |
| **Hu.F4.17** | **a-Syn (triplication)** | **M** | **48** |  |
| **UKERf1JF-X-001** | **Control** | **M** | **43** |  |
| **UKERfM89-X-001** | **PD** | **M** | **65** |  |
| **UKERf33Q-X-001** | **Control** | **F** | **45** |  |

**Supplementary Table 2.** A description of the second cohort of patients.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample code** | **Family code** | **Mutation** | **Sex** | **Age at sampling** |
| **40102** | **12245** | **Control** | **M** | **53** |
| **38444** | **14605** | **LRRK2 HET G2019S** | **M** | **69** |
| **39840** | **14345** | **αSyn HET duplication** | **F** | **45** |
| **39720** | **8969** | **parkin ex2del/c.202-203delAG** | **M** | **65** |
| **39401** | **13738** | **parkin ex4del/c.255delA** | **F** | **45** |