

The A53T Mutation is Key in Defining the Differences in the Aggregation Kinetics of Human and Mouse α -synuclein

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Supporting Information

Complete reference 8:

- (8) Polymeropoulos, M. H.; Lavedan, C.; Leroy, E.; Ide, S. E.; Dehejia, A.; Dutra, A.; Pike, B.; Root, H.; Rubenstein, J.; Boyer, R.; Stenroos, E. S.; Chandrasekharappa, S.; Athanassiadou, A.; Papapetropoulos, T.; Johnson, W. G.; Lazzarini, A. M.; Duvoisin, R. C.; Di Iorio, G.; Golbe, L. I.; Nussbaum, R. L. *Science* 1997, 276, 2045.

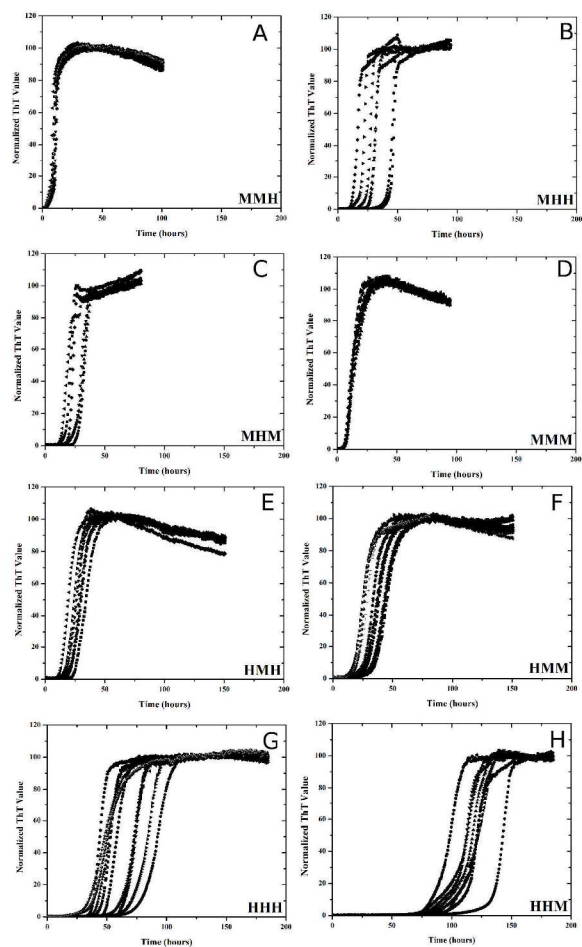


Figure S1. The normalized time course fibril growth curves for all the α Syn variants. MMH (A), MHH (B), MHM (C), MMM (D), HMH (E), HMM (F), HHH (G) and HHM (H) are shown in each panel.

Table S1. The alignment of 27 complete α Syn sequences generated by BLAST and aligned with ClustalW2. The common name and primary access number of each sequence is shown in the first column. Human and mouse α Syn are highlighted with blue and yellow separately. The seven different residues between human and mouse α Syn are marked in red.

Zebra Finch (Q4JHT6)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Zebra Finch (B5G014)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Zebra Finch (B5G015)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Island canary (Q91448)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Chicken (Q9I9H1)	1	-----MDVFMKGLNKAKEGVVAAAEK	21
Rat (P37377)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Mouse (O55042)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Common woolly monkey (P61141)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Black-handed spider monkey (P61138)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Red-chested mustached tamarin (P61147)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Common squirrel monkey (D0FH84)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Rhesus macaque (P61143)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Crab-eating macaque (P61142)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Red guenon (P61139)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Lowland gorilla (P61140)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Human (P37840-3)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Human (P37840)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Pygmy chimpanzee (P61144)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Chimpanzee (P61145)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Sumatran orangutan (P61146)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Pig (Q3I5G7)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Bovin (Q3T0G8)	1	-----MDVFMKGLSKAKEGVVAAAEK	21

Human (P37840-2)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
African clawed frog (Q7SZ02)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Zebra finch (B5G012)	1	-----MDVFMKGLSKAKEGVVAAAEK	21
Japanese pufferfish (Q3LU31)	1	-----MDAFMKGF SKAKDGVVAAAEK	21
Northern pike (C1BYT3)	1	MGTGYQVLQGADCIAGFEISRKAVNWAVMDALMKGF SKAKDGVVAAAEK	50
Zebra Finch (Q4JHT6)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Zebra Finch (B5G014)	22	TKQGVAAEAGKTKEGGVYVGSRTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Zebra Finch (B5G015)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVFFVPPAVV	71
Island canary (Q91448)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Chicken (Q9I9H1)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Rat (P37377)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTNVGGAVV	71
Mouse (O55042)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTNVGGAVV	71
Common woolly monkey (P61141)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTSVGGAVV	71
Black-handed spider monkey (P61138)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTSVGGAVV	71
Red-chested mustached tamarin (P61147)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTNVGGAVV	71
Common squirrel monkey (D0FH84)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Rhesus macaque (P61143)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Crab-eating macaque (P61142)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Red guenon (P61139)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Lowland gorilla (P61140)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Human (P37840-3)	22	TKQGVAAEAGKTKEGVLYV-----VAEKTKEQVTNVGGAVV	57
Human (P37840)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Pygmy chimpanzee (P61144)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Chimpanzee (P61145)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Sumatran orangutan (P61146)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
Pig (Q3I5G7)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVTNVGEAVV	71

Bovin (Q3T0G8)	22	TKQGVAAEAGRTKEGVLYVGSKTKEGVVHGVTTVAEKTKEQVTNVGEAVV	71
Human (P37840-2)	22	TKQGVAAEAGKTKEGVLYVGSKTKEGVVHGVATVAEKTKEQVTNVGGAVV	71
African clawed frog (Q7SZ02)	22	TKQGVAAEAGKTKEGVLYVGSKTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Zebra finch (B5G012)	22	TKQGVAAEAGKTKEGVLYVGSRTKEGVVHGVTTVAEKTKEQVSNVGGAVV	71
Japanese pufferfish (Q3LU31)	22	TKQGVGTAAEMTKDGVMFVGTKTKDG----VTVVAGKTVSGVSQVGGAMV	67
Northern pike (C1BYT3)	51	TKQGVGTAAEMTKDGVIFVGNKTKDG----VTVVAGKTVSGVSHVGGAMV	96
Zebra Finch (Q4JHT6)	72	TGVTAVAQKTVEGAGNIAAATGLVKKDQLAKQNEEGFLQEGMVNNTG-VA	120
Zebra Finch (B5G014)	72	TGVTAVAQKTVEGAGNIAAATGLVKKDQLAKQNEEGFLQEGMVNNTG-VA	120
Zebra Finch (B5G015)	72	TGVTAKTQKTVEGAGNIAAATGLAKKDQLAKQNEEGFLQEGMVNNTG-VA	120
Island canary (Q91448)	72	TGVTAVAQKTVEGAGNIAAATGLVKKDQLAKQNEEGFLQEGMVNNTG-AA	120
Chicken (Q9I9H1)	72	TGVTAVAQKTVEGAGNIAAATGLVKKDQLAKQNEEGFLQEGMVNNTD-IP	120
Rat (P37377)	72	TGVTAVAQKTVEGAGNIAAATGFVKKDQMGKG-EEGYPQEGILEDM---P	117
Mouse (O55042)	72	TGVTAVAQKTVEGAGNIAAATGFVKKDQMGKG-EEGYPQEGILEDM---P	117
Common woolly monkey (P61141)	72	TGVTAVAQKTVEGAGNIAAATGFVKKDHSKGK-EEGAPQEGILEDM---P	117
Black-handed spider monkey (P61138)	72	TGVTAVAQKTVEGAGNIAAATGFVKKDHSKGK-EEGAPQEGILEDM---P	117
Red-chested mustached tamarin (P61147)	72	TGVTAVAQKTVEGAGNIAAATGFVRKDHLGKS-EEGAPQEGILEDM---P	117
Common squirrel monkey (D0FH84)	72	TGVTAVAQKTVEGAGNIAAATGFVKKDHLGKS-EEGAPQEGILEDM---P	117
Rhesus macaque (P61143)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILQDM---P	117
Crab-eating macaque (P61142)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILQDM---P	117
Red guenon (P61139)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILQDM---P	117
Lowland gorilla (P61140)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILEDM---P	117
Human (P37840-3)	58	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILEDM---P	103
Human (P37840)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILEDM---P	117
Pygmy chimpanzee (P61144)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILEDM---P	117
Chimpanzee (P61145)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGAPQEGILEDM---P	117
Sumatran orangutan (P61146)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGKN-EEGATQEGILEDM---P	117

Pig (Q3I5G7)	72	TGVTAVAQKTVEGAGSIAAATGFGKKDQLGKN-EEGAPQEGILEDM---P	117
Bovin (Q3T0G8)	72	TGVTAVAQKTVEGAGSIAAATGFGKKDHMGKG-EEGASQEGILEDM---P	117
Human (P37840-2)	72	TGVTAVAQKTVEGAGSIAAATGFVKKDQLGK-----	102
African clawed frog (Q7SZ02)	72	TGVTAVAHKTVEGAGNFAAATGLVKKDQKNES---GFGPEGTMENSENMP	118
Zebra finch (B5G012)	72	TGVTAVAQKTVEGAGNIAASHWLGEEGPVGQT-----E-----	104
Japanese pufferfish (Q3LU31)	68	TGVTAVAQKTVESAGSIAAATGLVKKKEPGKQG-DDAAPEN-MAES----	111
Northern pike (C1BYT3)	97	TGVTAVAHKTVEGAGNIAAATGLVKKDPAKQE-EDTLKSDSPVKES----	141

Zebra Finch (Q4JHT6)	121	VDPENEAYEMPPEEEYQDYEPEA	143
Zebra Finch (B5G014)	121	VDPENEAYEMPPEEEYQDYEPEA	143
Zebra Finch (B5G015)	121	VDPENEAYEMPPEEEYQDYEPEA	143
Island canary (Q91448)	121	VDPDNEAYEMPPEEEYQDYEPEA	143
Chicken (Q9I9H1)	121	VDPENEAYEMPPEEEYQDYEPEA	143
Rat (P37377)	118	VDPSEAYEMPSEEGYQDYEPEA	140
Mouse (O55042)	118	VDPGSEAYEMPSEEGYQDYEPEA	140
Common woolly monkey (P61141)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Black-handed spider monkey (P61138)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Red-chested mustached tamarin (P61147)	118	VDP-----	120
Common squirrel monkey (D0FH84)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Rhesus macaque (P61143)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Crab-eating macaque (P61142)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Red guenon (P61139)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Lowland gorilla (P61140)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Human (P37840-3)	104	VDPDNEAYEMPSEEGYQDYEPEA	126
Human (P37840)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Pygmy chimpanzee (P61144)	118	VDPDNEAYEMPSEEGYQDYEPEA	140
Chimpanzee (P61145)	118	VDPDNEAYEMPSEEGYQDYEPEA	140

Sumatran orangutan (P61146)	118	VDPDNEAYEMPSEEGYQDYEP	140
Pig (Q3I5G7)	118	VDPDNEAYEMPSEEGYQDYEP	140
Bovin (Q3T0G8)	118	VDPDNEAYEMPSEEGYQDYEP	140
Human (P37840-2)	103	-----EGYQDYEP	112
African clawed frog (Q7SZ02)	119	VNPNNETYEMPPEEEYQDYDP	141
Zebra finch (B5G012)	105	-----	
Japanese pufferfish (Q3LU31)	112	--PDVTDPAEATEEDADD----	127
Northern pike (C1BYT3)	142	--PVDTEGGNTTAEGHSDGY---	159