Supplementary Figure S1. Various control curves of CSF RT-QuIC. The averaged data of each control were calculated and presented as mean + SD. *X*-axis, reaction time; *Y*-axis, ThT fluorescence units.

Supplementary Table S1. Correlation of reactivity of CSF RT-QuIC with factors of genetic prion diseases

Factors	Grouped	Positive rate (%)		Positive time post-reaction (h)		Peak ThT fluorescence units (rfu)	
		Positive no./ grouped no.	*P*-value	Median (min, max)	*P*-value	Median (min, max)	*P*-value
Age (years)	< 50	13/35 (37.1)	0.376[a]	8.64 (2.88, 53.40)	0.369[b]	141,434 (30,882, 260,000)	0.455[b]
	50–70	22/74 (29.7)		7.56 (2.16, 21.60)		127,168 (52,188, 250,144)	
	> 70	1/8 (12.5)		20.16		62,818	
Gender	Male	18/58 (31.0)	0.951[a]	7.96 (2.88, 44.70)	0.254[c]	116,813 (51,161, 245,791)	0.569[c]
	Female	18/59 (30.5)		5.76 (2.16, 53.40)		143,248 (30,882, 260,000)	
Tau ELISA (pg/mL)	< 1,400	16/58 (27.6)	0.460[a]	6.12 (2.16, 44.70)	0.425[c]	118,388 (51,161, 250,144)	0.340[c]
	≥ 1,400	20/59 (33.9)		8.00 (2.16, 53.40)		132,739 (30,882, 260,000)	
14-3-3Western blot	Positive	22/71 (31.0)	0.950[a]	5.76 (2.16, 44.70)	0.172[c]	126,029 (51,161, 260,000)	0.559[c]
	Negative	14/46 (30.4)		9.04 (2.16, 53.40)		127,168 (30,882, 223,636)	
EEG	Positive	16/32 (50.0)	0.006[a]	4.32 (2.16, 12.24)	0.005[c]	151,876 (87,548, 260,000)	0.009[c]
	Negative	20/85 (23.5)		10.80 (2.16, 53.40)		91,822 (30,882, 242,450)	
MRI	Positive	25/77 (32.5)	0.581[a]	7.92 (2.16, 53.40)	0.503[c]	118,884 (30,882, 260,000)	0.850[c]
	Negative	11/40 (27.5)		8.00 (2.88, 44.70)		132,304 (51,161, 242,450)	
Disease duration (months)	≤ 8	16/44 (36.4)	0.433[a]	7.96 (2.16, 34.00)	0.797[c]	113,832 (52,188, 242,450)	0.268[c]
	> 8	15/52 (28.8)		7.92 (2.16, 53.40)		146,947 (30,882, 260,000)	

Note. [a]Chi-Square test was used for comparing the positive rate of each factor groups. [b]*Kruskal-Wallis H* test was used for comparing the positive time post-reaction and the peak ThT fluorescence units of each factor that more than two groups. [c]*Mann-Whitney U* test was used for comparing the positive time post-reaction and the peak ThT fluorescence units of each factor between two groups.

Supplementary Table S2. Difference between gCJD (T188K, E196A, E200K), FFI (D178N)
and GSS (P102L) in RT-QuIC

Grouped	Mutants	Positive rate (%)		Positive time post-reaction (h)		Peak ThT fluorescence units (rfu)	
		Positive no./grouped no.	*P*-value	Median (min, max)	*P*-value	Median (min, max)	*P*-value
FFI	D178N	6/37 (16.2)		27.80 (2.88, 53.40)		66,156 (30,881, 223,636)	
	T188K		0.048[a]		0.091[b]		0.087[b]
gCJD	E196A	24/70 (34.3)		7.71 (2.16, 20.16)		118,873 (52,188, 260,000)	
	E200K						
GSS	P102L	6/10 (60.0)		9.04 (3.72, 18.00)		148,689 (46,332, 184,010)	
	T188K		0.116[a]		0.364[b]		0.876[b]
gCJD	E196A	24/70 (34.3)		7.71 (2.16, 20.16)		118,873 (52,188, 260,000)	
	E200K						
GSS	P102L	6/10 (60.0)	0.005[a]	9.04 (3.72, 18.00)	0.337[b]	148,689 (46,332, 184,010)	0.310[b]
FFI	D178N	6/37 (16.2)		27.8 (2.88, 53.40)		66,156 (30,881, 223,636)	

Note. [a]Chi-Square test was used for comparing the positive rate between two groups of gPrDs. [b]*Mann-Whitney U* test was used for comparing the positive time post-reaction and the peak ThT fluorescence units between two groups of gPrDs.