Supplementary material

Supplementary Table 1 Comparison of blood mRNA samples demographic data between the normal control and recent-onset schizophrenia groups

Characteristics	Recent-onset schizophrenia (*n* =19)	Normal control (*n* =38)	*P* value
Age (years) [a]	43.95±11.98	45.11±12.67	0.371
Education (years) [a]	9.74±3.43	11.08±4.07	0.100
BMI (body mass index) [a]	20.88±2.71	20.93±3.48	1.645
Gender (F/M) [b]	11/8	22/16	1.000
Smokers [c] (N, n%) [b]	6 (32%)	12 (32%)	1.000

Notes: All values are the means ± SDs unless otherwise indicated.

a: *P* values were calculated by the Mann-Whitney U test.

b: *P* values were calculated by the chi-square test.

c: In this study, Smokers represents the number of people who have a habit of smoking.

Supplementary Table 2 Comparison of serum samples demographic data between the normal control and recent-onset schizophrenia groups

Characteristics	Recent-onset schizophrenia (*n* =41)	Normal control (*n* =38)	*P* value
Age (years) [a]	41.78±11.67	45.11±12.67	0.116
Education (years) [a]	11.44±3.77	11.08±4.07	0.344
BMI (body mass index) [a]	21.44±2.69	20.93±3.48	0.236
Gender (F/M) [b]	16/25	22/16	0.093
Smokers [c] (N, n%) [b]	17 (42%)	12 (32%)	0.362

Notes: All values are the means ± SDs unless otherwise indicated.

a: *P* values were calculated by the Mann-Whitney U test.

b: *P* values were calculated by the chi-square test.

c: In this study, Smokers represents the number of people who have a habit of smoking.

Supplementary Table 3 polymerase chain reaction primers used for plasmid construction

	Oligo sequence (5' > 3')
pcDNA-3.1-CPEB1	F-CTAGCTAGCGCCACCATGGCGTTCCCGCTGGAA
	R-CCCAAGCTTCTAGCTGGAATCTCGGTTC
PCMV-NDUFV2P1	F-CCGGAATTCCTTCTCCGCGGCGCTCC
	R-CCGCTCGAGTTTATGTAGACTGGAAGTCC
pGL3-CPEB1-promoter-800/0	F-CGGGGTACCTGTCAGATGCTGCTTCGAG
	R-CCGCTCGAGGAGCCGTGCAATAGAGAGC
pGL3-CPEB1-promoter-600/0	F-CGGGGTACCGGAACAGCCCAGTGACT
	R-CCGCTCGAGGAGCCGTGCAATAGAGAG
pGL3-CPEB1-promoter-400/0	F-CGGGGTACCTTTGCTAGCAGGACTGTGAA
	R-CCGCTCGAGGAGCCGTGCAATAGAGAG
pGL3-CPEB1-promoter-200/0	F-CGGGGTACCCGTGCGTGAGGGCTGCTTG
	R-CCGCTCGAGGAGCCGTGCAATAGAGAG
pGL3-NDUFV2-promoter	F-CGGGGTACCTAAGGGCCAGACTGTCTTT
	R-CCCAAGCTTCGGGCCACACTGTTCAC
pGL3-NDUFV2P1-promoter	F- CTAGCTAGCTGTTGCGATGGCAGTGGTA
	R- CCCAAGCTT GCCTTTGGGTTTTTAAGTGG

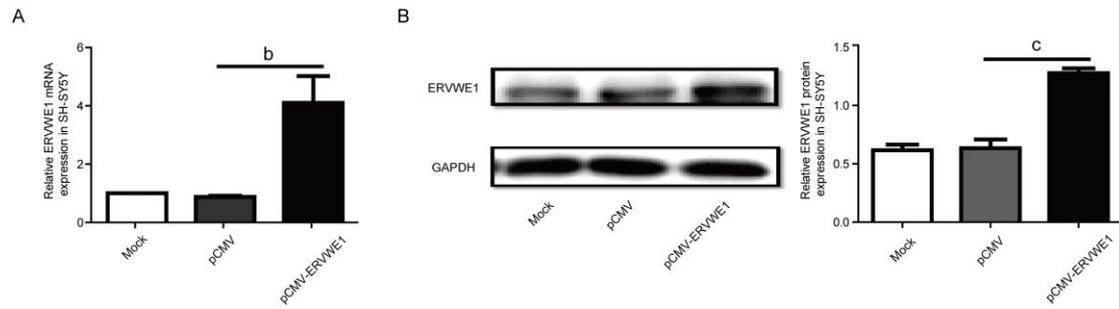**Supplementary Table 4 List of genes and primer sequences used for qPCR**

Target gene	PCR product size	Oligo sequence (5' > 3')
GAPDH(NM_002046.7)	177bp	F- ATGACATCAAGAAGGTGGTG
		R- CATACCAGGAAATGAGCTTG
CPEB1(NM_030594.5)	195bp	F-CTGCCCTTCCTGTCTCTGTC
		R-TATGCTGAAGGGGTCTTTGG
NDUFV2(NM_021074.5)	70bp	F-ATGTTCTTCTCCGCGGCGCT
		R-TCCTTACATGTCTTCCCCAG
NDUFV2P1(NC_000019.10:c5322 4879-53223909)	75bp	F-GGGTAAGGAGGCTCAAGCTG
		R-CCCAAAACTAAGGGAGACACG
ERVWE1 (NM_014590.4)	78bp	F-CCAATGCATCAGGTGGGTAAC
		R-GAGGTACCACAGACAAAAAATATTCCT

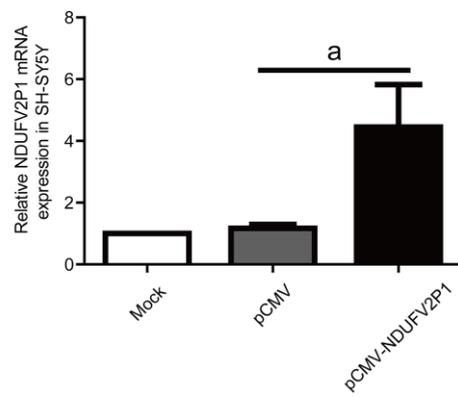**Supplementary Table 5 Univariate and multivariate analysis of risk factors for schizophrenia**

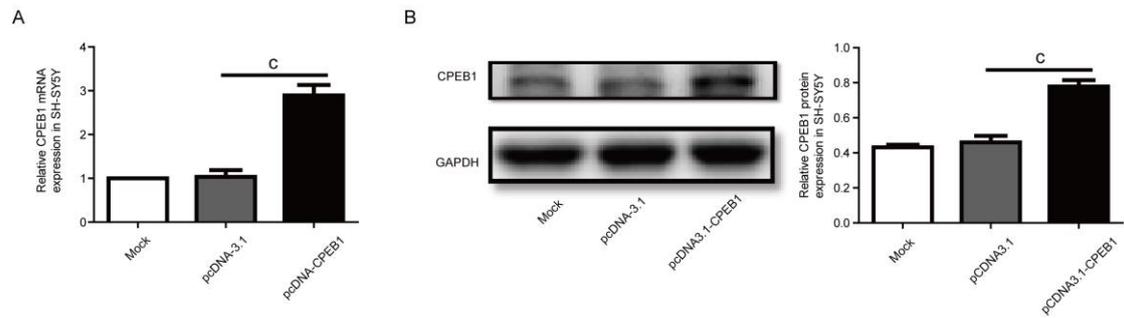| Characteristics	Univariate P	OR	Multivariate 95% CI Lower	Multivariate 95% CI Upper	P
Age (years)	0.234				NA
Education (years)	0.688				NA
BMI (body mass index)	0.470				NA
Gender (female vs. male)	0.096				NA
Smoking status (yes vs. no)	0.369				NA
CPEB1 level	< 0.001	1.890	1.199	2.980	0.006
NDUFV2 level	< 0.001	1.173	1.024	1.344	0.021
NDUFV2P1 level	0.045	0.986	0.958	1.015	0.341
ERVWE1 level	0.009	1.018	0.984	1.052	0.307

Notes: NA, not adopted.

Supplementary Figure 1 Transfection efficiency of ERVWE1 in SH-SY5Y cells. A: The mRNA levels of ERVWE1 in ERVWE1-transfected SH-SY5Y cells using qPCR; B: Representative western blots for ERVWE1 and GAPDH in ERVWE1-transfected SH-SY5Y cells. Each bar represented the mean ± standard deviation of three independent experiments. [b]$P < 0.01$; [c]$P < 0.001$.
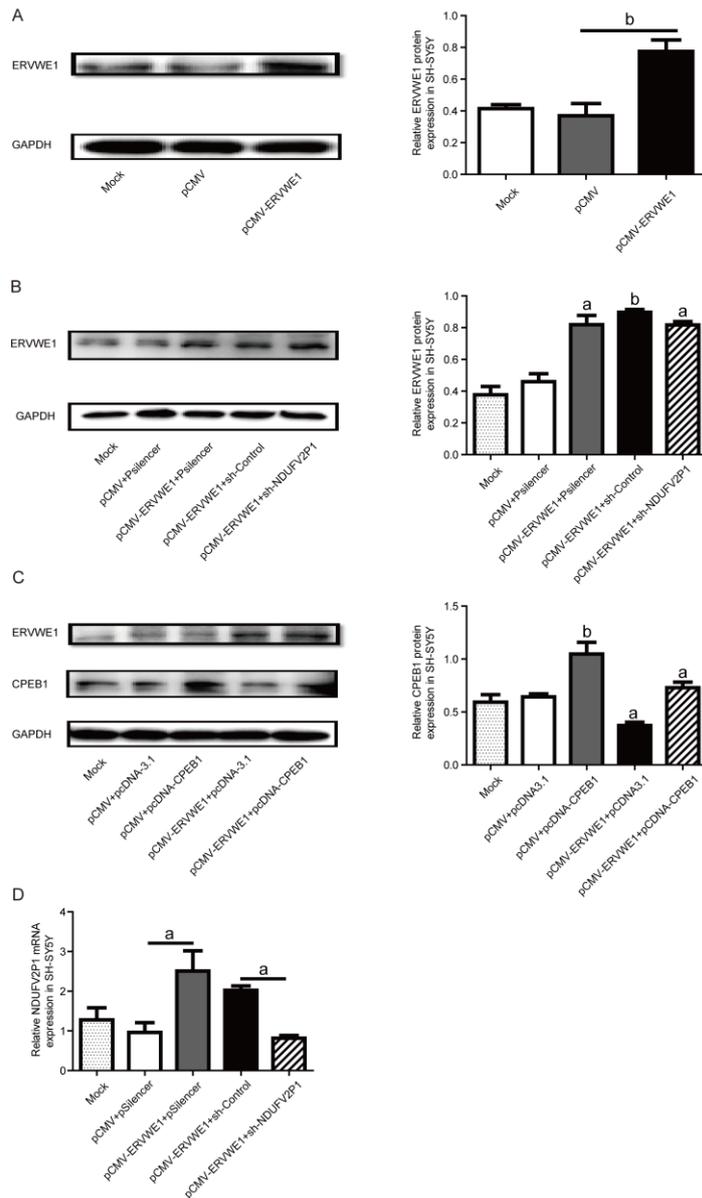
A

Supplementary Figure 2 Transfection efficiency of NDUFV2P1 in SH-SY5Y cells. A: The mRNA levels of NDUFV2P1 in NDUFV2P1-transfected SH-SY5Y cells using qPCR. Each bar represented the mean ± standard deviation of three independent experiments. [a]$P < 0.05$.
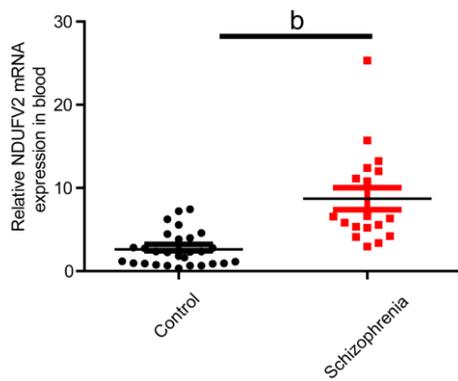
Supplementary Figure 3 Transfection efficiency of CPEB1 in SH-SY5Y cells.
A: The mRNA levels of CPEB1 in CPEB1-transfected SH-SY5Y cells using qPCR; B: Representative western blots for CPEB1 and GAPDH in CPEB1-transfected SH-SY5Y cells. Each bar represented the mean ± standard deviation of three independent experiments. [c]$P < 0.001$.

Supplementary Figure 4 Expression levels of ERVWE1, CPEB1 and NDUFV2P1 in complex I activity samples. A: Representative western blots for ERVWE1 and GAPDH in ERVWE1-transfected SH-SY5Y cells; B: Representative western blots for ERVWE1 and GAPDH in SH-SY5Y cells after co-transfected with ERVWE1 and shNDUFV2P1; C: Representative western blots for ERVWE1, CPEB1, and GAPDH in SH-SY5Y cells after co-transfected with ERVWE1 and CPEB1; D: Represent mRNA levels of NDUFV2P1 in SH-SY5Y cells after co-transfected with ERVWE1 and shNDUFV2P1. Each bar represented the mean ± standard deviation of three independent experiments. [a]$P < 0.05$; [b]$P < 0.01$.

Supplementary Figure 5 NDUFV2 mRNA expression levels in schizophrenia blood samples. A: Represent the mRNA levels of NDUFV2 in the schizophrenia patients (n = 18) and the control groups (n = 28) using qPCR. Primers were as follows: forward: 5'-AGTCCTGGATTTAGCCCAA AGG-3' and reverse: 5'-GCAGGGTGTAGTAGTGCAGAC-3', which can detect not only NDUFV2 but also NDUFV2P1. [b]P < 0.01.