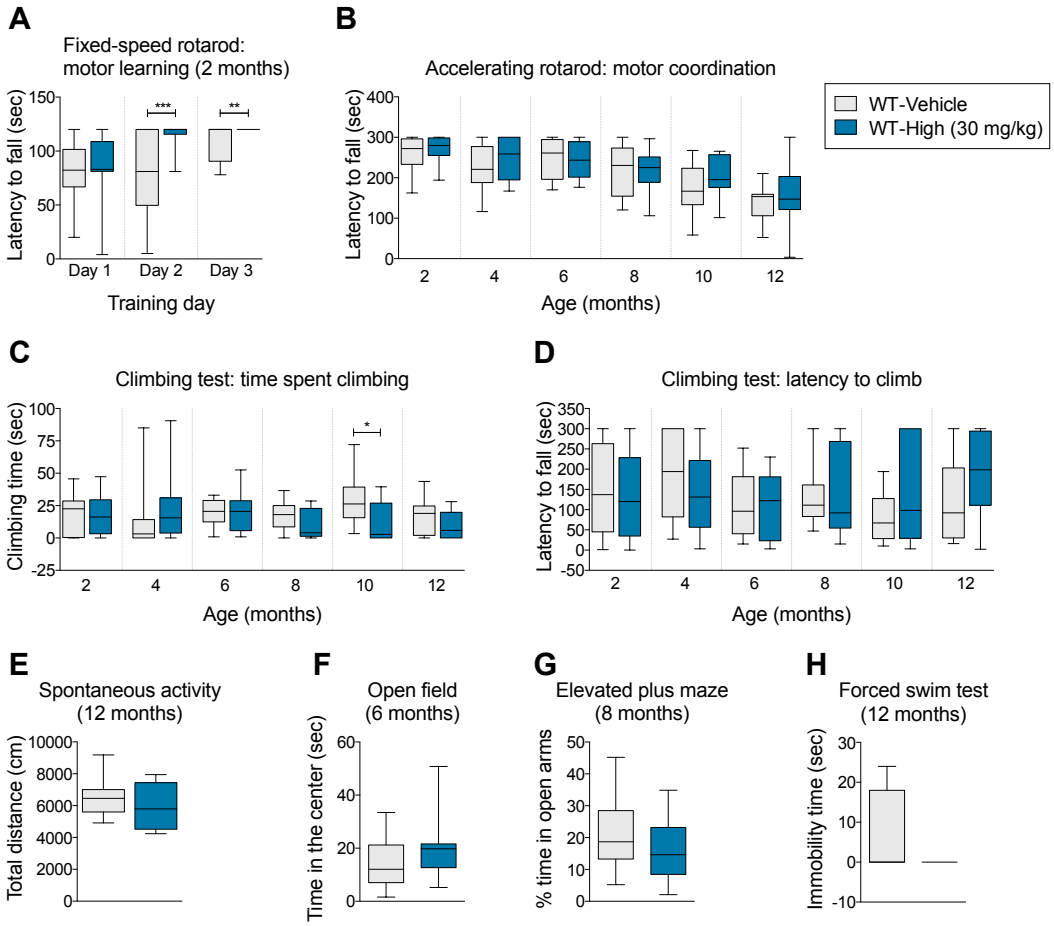
SUPPLEMENTARY INFORMATION

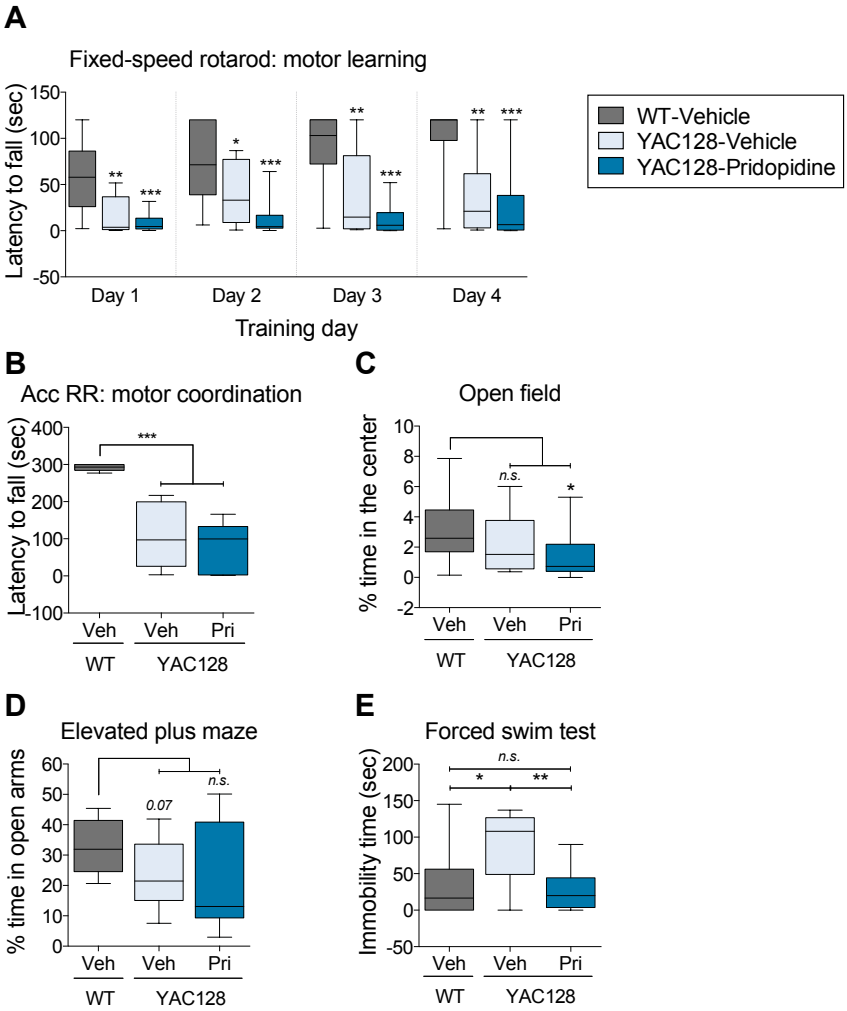


Supplementary Figure 1. **Effect of pridopidine treatment on wild-type.** (**A**) Pridopidine-treated WT mice displayed improved motor learning at 2 months of age compared with vehicle-treated WT mice. (**B,C**) Pridopidine treatment did not improve motor function in WT mice in the accelerating rotarod test (**B**), climbing test (**C**, **D**) or the spontaneous activity test (**E**). **(F-G**) The performance of pridopidine-treated WT mice was similar to that of vehicle-treated WT mice in the open field (**F**), elevated plus maze (**G**) and forced swim (**H**) tests of anxiety- and depressive-like phenotypes.

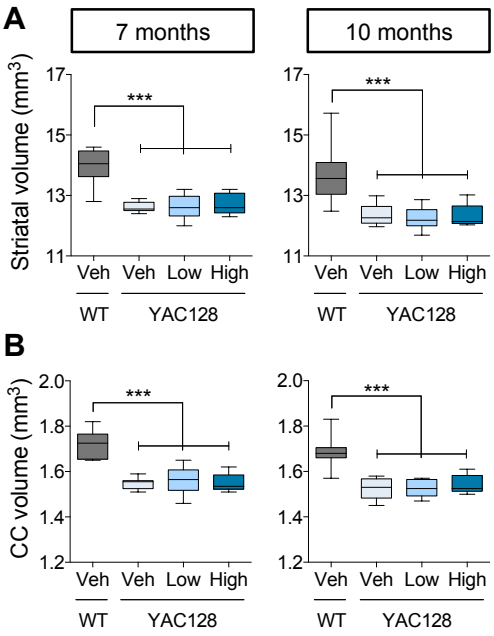
(**A-H**) Box-and-whiskers plots show median (line within box), 25th and 75th percentile (bounds of box), and minimum and maximum values (bars);

(**A-G**) n = 15-21 WT-vehicle, n = 11-19 WT-pridopidine (30 mg/kg); **p < 0.05, **p < 0.01, ***p < 0.001* by two-tailed student's t-test.

(**H**) n = 4 WT-vehicle and WT-pridopidine (30 mg/kg); *not significant* by two-tailed student's t-test.



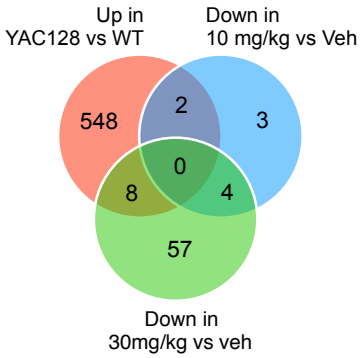
Supplementary Figure 2. **Effect of late pridopidine treatment on manifest YAC128 HD mice. (A)** Vehicle-treated YAC128 HD mice displayed motor learning deficits in the rotarod training task at 10 months of age. Such deficits were not improved with late pridopidine treatment. **(B)** Vehicle-treated YAC128 HD mice exhibited motor deficits in the accelerating rotarod, which late pridopidine treatment could not improve. **(C, D)** Anxiety-like phenotypes were also evaluated in vehicle-treated YAC128 HD mice at 9.5 months of age; however, no differences in time spent in the centre in the OF (**C**) as well as time spent in the open arms in the EPM (**D**) were observed between genotypes. Also, no effect of pridopidine was observed in either test in treated YAC128 HD mice. **(E)** When depressive-like phenotypes were evaluated, vehicle-treated YAC128 HD mice spent more time immobile compared to vehicle-treated WT mice. Pridopidine treatment improved depressive-like phenotypes by reducing the time spent immobile in treated YAC128 HD mice.
(**A-E**) Box-and-whiskers plots show median (line within box), 25th and 75th percentile (bounds of box), and minimum and maximum values (bars); n = 7-12 WT-vehicle, n = 8 YAC128-vehicle, n = 7-10 YAC128-pridopidine; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ by one-way ANOVA with Fisher's LSD post hoc analysis.



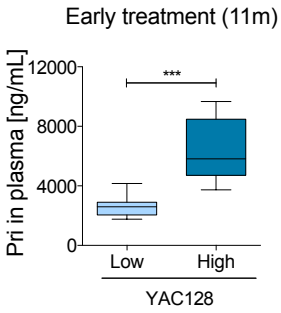
Supplementary Figure 3. Effect of early pridopidine treatment on striatal and CC volume in YAC128 HD mice at 7 and 10 months of age by MRI. (**A**) Vehicle-treated YAC128 HD mice displayed decreased striatal volumes at 7 and 10 months of age by structural MRI, which were not rescued by pridopidine treatment (10 and 30 mg/kg). **(B**) In addition, decreased CC volume was observed in vehicle-treated YAC28 HD mice at 7 and 10 months of age. Pridopidine treatment had no effect on CC volume in treated YAC128 HD mice.

(**A,B**) Box-and-whiskers plots show median (line within box), 25th and 75th percentile (bounds of box), and minimum and maximum values (bars); n = 8 WT-vehicle, n = 8 YAC128-vehicle, n = 8 YAC128-pridopidine (10 mg/kg), n = 8 YAC128-pridopidine (30 mg/kg); ***$p < 0.001$ by one-way ANOVA with Fisher's LSD post hoc analysis.

CC = corpus callosum; Pri = Pridopidine; Veh = Vehicle; Low = 10 mg/kg; High = 30 mg/kg.



Supplementary Figure 4. RNA-seq analysis of differentially expressed genes. Venn analysis of striatal genes upregulated in vehicle-treated YAC128 HD mice compared with vehicle-treated WT mice, and striatal genes downregulated in the striatum of pridopidine-treated YAC128 HD mice.



Supplementary Figure 5. Analysis of pridopidine concentration in plasma of early treated YAC128 HD mice. In the early pridopidine treatment cohort, mean pridopidine concentration in plasma was lower in YAC128 HD mice treated with the low dose of pridopidine than in YAC128 HD mice treated with the high dose of pridopidine.
Box-and-whiskers plots show median (line within box), 25th and 75th percentile (bounds of box), and minimum and maximum values (bars); n = 14 YAC128-pridopidine (10 mg/kg), n = 15 YAC128-pridopidine (30 mg/kg); ***$p < 0.001$ by one-way ANOVA with Fisher's LSD post hoc analysis.
Pri = Pridopidine; Low = 10 mg/kg; High = 30 mg/kg.

Supplementary Table 1. Early pridopidine treatment cohort sample size.

		Sample size																	
		2 months			4 months			6 months			8 months			10 months			12 months		
Genotype	Treatment	F	M	N	F	M	N	F	M	N	F	M	N	F	M	N	F	M	N
WT	Vehicle	11	10	21	11	9	20	10	8	18	9	8	17	8	8	16	7	7	14
YAC128	Vehicle	9	10	19	9	10	19	9	10	19	9	9	18	9	9	18	9	9	18
YAC128	Pri (10 mg/kg)	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20	10	9	19
YAC128	Pri (30 mg/kg)	10	9	19	10	9	19	10	9	19	10	9	19	10	8	18	10	8	18

Supplementary Table 2. Percentage of survival in all groups in early pridopidine treatment cohort.

Genotype	Treatment	Initial N	Final N	Survival (%)
WT	Vehicle	21	14	66.66
YAC128	Vehicle	19	18	94.73
YAC128	Pri (10 mg/kg)	20	19	95
YAC128	Pri (30 mg/kg)	19	18	94.73

Supplementary Table 3. Late pridopidine treatment cohort sample size for each behavioural test.

OF = open field; EPM = elevated plus maze; Acc. RR = accelerating rotarod; FST = forced swim test

		Initial sample size			OF sample size			EPM sample size			Acc. RR sample size			FST sample size		
		8 months			9.5 months			9.5 months			10 months			10 months		
Genotype	Treatment	F	M	N	F	M	N	F	M	N	F	M	N	F	M	N
WT	Vehicle	3	9	12	3	9	12	3	7	10	3	7	10	3	9	12
YAC128	Vehicle	3	5	8	3	5	8	3	5	8	3	5	9	3	5	8
YAC128	Pridopidine	3	7	10	3	7	10	2	5	7	3	7	10	3	7	10

Supplementary Table 4. Accelerating rotarod sample size at each analysis point for early pridopidine treatment cohort.

		Accelerating rotarod test sample size																	
		2 months			4 months			6 months			8 months			10 months			12 months		
Genotype	Treatment	F	M	N	F	M	F	F	M	N	F	M	N	F	M	N	F	M	N
WT	Vehicle	11	10	21	10	8	18	9	8	17	10	7	17	8	6	14	7	4	11
YAC128	Vehicle	9	9	18	9	8	17	8	8	16	8	8	16	6	8	14	6	8	14
YAC128	Pri (10 mg/kg)	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20	10	8	18
YAC128	Pri (30 mg/kg)	10	6	16	10	9	19	10	9	19	10	9	19	10	8	18	10	7	17

Supplementary Table 5. Climbing test (latency to climb) sample size at each analysis point for early pridopidine treatment cohort.

		Climbing test sample size (latency to climb)																	
		2 months			4 months			6 months			8 months			10 months			12 months		
Genotype	Treatment	F	M	N	F	M	F	F	M	N	F	M	N	F	M	N	F	M	N
WT	Vehicle	11	8	19	10	8	18	8	9	17	8	9	16	7	7	14	7	4	11
YAC128	Vehicle	9	9	18	9	8	17	8	8	16	8	8	16	6	8	14	8	8	16
YAC128	Pri (10 mg/kg)	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20	10	9	19
YAC128	Pri (30 mg/kg)	10	9	19	10	9	19	10	9	19	10	9	19	10	8	18	10	7	17

Supplementary Table 6. Climbing test (climbing time) sample size at each analysis point for early pridopidine treatment cohort.

		Climbing test sample size (climbing time)																
		2 months			4 months			6 months			8 months			10 months			12 months		
Genotype	Treatment	F	M	N	F	M	F	F	M	N	F	M	N	F	M	N	F	M	N
WT	Vehicle	10	8	19	9	8	17	8	9	17	8	9	16	7	7	14	7	4	11
YAC128	Vehicle	9	9	18	9	9	18	8	8	16	8	8	16	6	8	14	8	8	16
YAC128	Pri (10 mg/kg)	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20	10	9	19
YAC128	Pri (30 mg/kg)	10	9	19	10	9	19	10	9	19	10	9	19	10	8	18	10	7	17

Supplementary Table 7. Spontaneous activity sample size in early pridopidine treatment cohort.

		Spontaneous activity sample size		
		12 months		
Genotype	Treatment	F	M	N
WT	Vehicle	5	5	10
YAC128	Vehicle	8	7	15
YAC128	Pri (10 mg/kg)	10	7	17
YAC128	Pri (30 mg/kg)	11	9	20

Supplementary Table 8. Psychiatric-like behaviour test sample sizes in early pridopidine treatment cohort.

		OF sample size			EPM sample size			FST sample size		
		6 months			8 months			12 months		
Genotype	Treatment	F	F	M	F	M	N	F	M	N
WT	Vehicle	9	8	17	9	7	16	0	4	4
YAC128	Vehicle	7	9	16	7	7	14	0	8	8
YAC128	Pri (10 mg/kg)	10	9	19	10	10	20	0	9	9
YAC128	Pri (30 mg/kg)	10	7	17	8	8	16	0	8	8

Supplementary Table 9. Functional enrichment for DEGs common to the 10 mg/kg and 30 mg/kg pridopidine YAC128 HD groups.

Enrichment category	Term	P-value	Adjusted P-value	Genes
Jensen COMPARTMENTS	Bcl-2_family_protein_complex	2.22466E-05	0.003001716	EGR1;EGR2;DUSP1;TIPARP;PLK2;LMO2;IRS2;FOS;DUSP6;GADD45G;NR4A1;BCL6;ALDH1A1
Jensen COMPARTMENTS	NF-kappaB_complex	1.92116E-05	0.003001716	EGR1;NR4A1;BCL6;DUSP1;PELI1;CREM;FOSB;FOS;JUNB;FOSL2;GADD45G
Jensen COMPARTMENTS	IgM_B_cell_receptor_complex	2.87934E-05	0.003001716	EGR1;NR4A1;DUSP5;PER1;BCL6
Jensen COMPARTMENTS	NELF_complex	8.46348E-06	0.003001716	EGR1;ARC;DUSP1;FOS;DUSP6
Jensen COMPARTMENTS	IgM_immunoglobulin_complex	0.00043676	0.036425777	EGR1;NR4A1;DUSP5;PER1
Jensen COMPARTMENTS	BCL-2_complex	0.000637208	0.037959417	EGR1;NR4A1;BCL6;DUSP1;TIPARP;LMO2;ALDH1A1;IRS2;FOS;GADD45G
Jensen COMPARTMENTS	Calcitonin_family_receptor_complex	0.000573657	0.037959417	DUSP5;CREM;FOS
Jensen COMPARTMENTS	Neuron_projection	0.000947523	0.04390188	RGS2;ARC;TENM2;PLK2;AKAP9;DNER;KCNA4;HTR1B;FOS
Jensen COMPARTMENTS	calcium-_and_calmodulin-dependent_protein_kinase_complex	0.000934817	0.04390188	EGR1;ARC;FZD5;FOS
Jensen COMPARTMENTS	Dendrite	0.001549023	0.053828564	ARC;TENM2;PLK2;AKAP9;DNER;HTR1B
Jensen COMPARTMENTS	GO:0005667	0.001363622	0.053828564	NR4A3;LMO2;CREM;FOS;JUNB
Jensen COMPARTMENTS	C-fiber	0.001422541	0.053828564	EGR1;HTR1B;FOSB;FOS
Jensen COMPARTMENTS	Female_germ_cell_nucleus	0.001992273	0.05934127	EGR4;DUSP1;GPR3;MEST;DUSP6
Jensen COMPARTMENTS	Germinal_vesicle	0.001992273	0.05934127	EGR4;DUSP1;GPR3;MEST;DUSP6
Jensen COMPARTMENTS	interleukin-9_receptor_complex	0.002139002	0.059464246	EGR1;IRS2
Jensen COMPARTMENTS	Aryl_hydrocarbon_receptor_complex	0.003559934	0.092780788	TIPARP;LMO2;ALDH1A1;GADD45G
Jensen COMPARTMENTS	Activin_AB_complex	0.005861412	0.14377698	EGR4;DUSP6;GADD45G

Jensen COMPARTMENTS	Fatty_acid_synthase_complex	0.006262702	0.145085932	EGR1;NR4A1;BCL6;DUSP1;IRS2;FOS
Jensen COMPARTMENTS	gamma-secretase_complex	0.007147581	0.156870596	FAM184B;LMO2;ALDH1A1;GPR3
Jensen COMPARTMENTS	Neuron_part	0.008004064	0.162012006	RGS2;ARC;TENM2;PLK2;AKAP9;DNER;KCNA4;HTR1B;FOS
Jensen COMPARTMENTS	Somatodendritic_compartment	0.008158878	0.162012006	ARC;TENM2;PLK2;AKAP9;DNER;HTR1B
Jensen COMPARTMENTS	HIR_complex	0.009725295	0.174526625	FNDC5;EGR4;IRS2
Jensen COMPARTMENTS	SMAD2_protein_complex	0.009696402	0.174526625	RGS2;FOSB
Jensen COMPARTMENTS	CGRP_receptor_complex	0.010044698	0.174526625	CREM;FOS
Jensen COMPARTMENTS	interleukin-6_receptor_complex	0.01075778	0.179439769	RND3;JUNB
Jensen COMPARTMENTS	BAX_complex	0.011317859	0.181521044	EGR1;NR4A1;BCL6;DUSP1;ALDH1A1;FOS
Jensen COMPARTMENTS	cyclic-nucleotide_phosphodiesterase_complex	0.011868153	0.183297034	AKAP9;CREM
Jensen COMPARTMENTS	IgD_immunoglobulin_complex	0.013423402	0.193019267	DUSP5;EGR1
Jensen COMPARTMENTS	IgD_B_cell_receptor_complex	0.013423402	0.193019267	DUSP5;EGR1
Jensen COMPARTMENTS	Cell_projection	0.021483301	0.227193986	TENM2;RGS2;ARC;PLK2;DNER;AKAP9;KCNA4;HTR1B;FOS;IQGAP2
Jensen COMPARTMENTS	Calyx_of_Held	0.020461217	0.227193986	EGR2;HTR1B
Jensen COMPARTMENTS	Heparanase_complex	0.021428904	0.227193986	DUSP5;EGR1
Jensen COMPARTMENTS	DSIF_complex	0.017673088	0.227193986	DUSP1;LMO2
Jensen COMPARTMENTS	Microneme	0.019984485	0.227193986	PDP1;EGR2
Jensen COMPARTMENTS	Glutamate_decarboxylase_complex	0.021428904	0.227193986	FNDC5;FOS
Jensen COMPARTMENTS	voltage-gated_potassium_channel_complex	0.019512531	0.227193986	AKAP9;KCNA4

Jensen COMPARTMENTS	Potassium_channel_complex	0.019984485	0.227193986	AKAP9;KCNA4
Jensen COMPARTMENTS	serotonin-activated_cation-selective_channel_complex	0.019512531	0.227193986	HTR1B;FOS
Jensen COMPARTMENTS	Ciliary_necklace	0.021793188	0.227193986	FOS
Jensen COMPARTMENTS	Postsynaptic_actin_cytoskeleton	0.019094754	0.227193986	POU3F4
Jensen COMPARTMENTS	Filopodium	0.025485098	0.259202093	TENM2;IQGAP2
Jensen COMPARTMENTS	Myb_complex	0.02695452	0.264919806	EGR1;LMO2;FOS;RREB1
Jensen COMPARTMENTS	Set3_complex	0.028642582	0.264919806	ALDH1A1;FOS;DUSP14
Jensen COMPARTMENTS	Pituitary_gonadotropin_complex	0.030494366	0.264919806	EGR1;CREM;DUSP6
Jensen COMPARTMENTS	Survivin_complex	0.030177355	0.264919806	EGR1;NR4A1;ALDH1A1;RND3
Jensen COMPARTMENTS	NMS_complex	0.028166347	0.264919806	TENM2;HTR1B
Jensen COMPARTMENTS	TRAMP_complex	0.028946894	0.264919806	EGR1;EGR4;TIPARP
Jensen COMPARTMENTS	ATP-sensitive_potassium_channel_complex	0.030389479	0.264919806	FNDC5;PDP1
Jensen COMPARTMENTS	pre-B_cell_receptor_complex	0.031526496	0.268296917	EGR2;BCL6
Jensen COMPARTMENTS	MIS_complex	0.032680198	0.271975904	NR4A3;CREM
Jensen COMPARTMENTS	Dendritic_spine	0.03326324	0.271975904	ARC;TENM2
Jensen COMPARTMENTS	Neuron_spine	0.034441575	0.276194937	ARC;TENM2
Jensen COMPARTMENTS	Pairing_center	0.035176413	0.276765362	PLK2
Jensen COMPARTMENTS	platelet-derived_growth_factor_complex	0.037462778	0.289295897	EGR1;FOSB;FOS
Jensen COMPARTMENTS	Synaptic_membrane	0.038165679	0.289365242	ARC;TENM2;AKAP9

Jensen COMPARTMENTS	Enhanceosome	0.041205827	0.306836248	GADD45G;FOSL2
Jensen COMPARTMENTS	Mitochondrial_permeability_transition_pore_complex	0.043274876	0.316589886	FOSB;HTR1B;FOS
Jensen COMPARTMENTS	mRNA_editing_complex	0.046413166	0.328038821	NR4A3;CREM
Jensen COMPARTMENTS	Adrenomedullin_receptor_complex	0.04575341	0.328038821	DUSP5
GO Cellular Component	transcription factor complex (GO:0005667)	0.006293839	0.274204614	NR4A1;LMO2;CREM;FOS
GO Cellular Component	filopodium (GO:0030175)	0.007724074	0.274204614	TENM2;IQGAP2
GO Cellular Component	potassium channel complex (GO:0034705)	0.016345114	0.290125779	AKAP9;KCNA4
GO Cellular Component	voltage-gated potassium channel complex (GO:0008076)	0.015912445	0.290125779	AKAP9;KCNA4
GO Cellular Component	dendrite (GO:0030425)	0.027146969	0.385486965	TENM2;PLK2;DNER
GO Cellular Component	microtubule organizing center part (GO:0044450)	0.033850374	0.400562763	PLK2;AKAP9

Supplementary Table 10. Functional enrichment for DEGs specific to 30 mg/kg pridopidine YAC128 HD group.

Enrichment category	Term	P-value	Adjusted P-value	Genes
Jensen COMPARTMENTS	Synapse	3.3178E-06	0.00282013	CAMK2D;CXADR;HOMER2;CTTNBP2;IQSEC3;CIB2;TMEM163;ELFN1;SYT6;NPAS4;GRIN3A;SV2C;VAMP7;SYT12;FLRT3;DOK7;VWC2L;VAMP1;STRN;GRASP
Jensen COMPARTMENTS	Neuron_part	2.20127E-05	0.009355383	CAMK2D;TENM3;CTTNBP2;PDE1A;CIB2;ELFN1;TMEM163;CYGB;SV2C;FLRT3;RGS8;TAC1;TRPC5;CXADR;HOMER2;LIMK1;HTR1A;SYT6;SLC4A8;GRIN3A;VAMP7;SYT12;MAK;VAMP1;STRN;GNB5
Jensen COMPARTMENTS	Synaptic_vesicle_membrane	0.000119105	0.025309874	SV2C;SYT12;VAMP1;TMEM163;SYT6
Jensen COMPARTMENTS	Exocytic_vesicle_membrane	0.000119105	0.025309874	SV2C;SYT12;VAMP1;TMEM163;SYT6
Jensen COMPARTMENTS	Transport_vesicle_membrane	0.000220588	0.037499897	SV2C;VAMP7;SYT12;VAMP1;TGFA;TMEM163;SYT6
Jensen COMPARTMENTS	Neuron_projection	0.000291598	0.037509505	TRPC5;CAMK2D;TENM3;CXADR;HOMER2;CTTNBP2;LIMK1;HTR1A;ELFN1;CYGB;SLC4A8;GRIN3A;VAMP7;SV2C;FLRT3;VAMP1;STRN;RGS8;TAC1
Jensen COMPARTMENTS	Cell_projection	0.000308902	0.037509505	CAMK2D;TENM3;CTTNBP2;DNAH6;CIB2;ELFN1;CYGB;SV2C;FLRT3;TBC1D30;PIP5K1A;DRD1;RGS8;TAC1;TRPC5;CXADR;HOMER2;TPM1;LIMK1;HTR1A;SLC4A8;GRIN3A;VAMP7;MAK;ARMC4;VAMP1;SPRY2;STRN;GNB5
Jensen COMPARTMENTS	Synaptic_vesicle	0.000545944	0.058006499	SV2C;SYT12;CTTNBP2;VAMP1;TMEM163;SYT6
Jensen COMPARTMENTS	Exocytic_vesicle	0.000928897	0.087729181	SV2C;SYT12;CTTNBP2;VAMP1;TMEM163;SYT6
Jensen COMPARTMENTS	Synapse_part	0.001403056	0.101102445	HOMER2;CTTNBP2;IQSEC3;TMEM163;SYT6;NPAS4;GRIN3A;SV2C;SYT12;FLRT3;VAMP1;STRN;GRASP
Jensen COMPARTMENTS	Cell_body	0.001723092	0.101102445	SLC4A8;TRPC5;CAMK2D;GRIN3A;CXADR;HOMER2;PDE1A;STRN;RGS8;TAC1;CYGB
Jensen COMPARTMENTS	Transport_vesicle	0.001903105	0.101102445	SV2C;VAMP7;SYT12;CTTNBP2;CAV2;VAMP1;TGFA;TMEM163;SYT6
Jensen COMPARTMENTS	Ion_channel_complex	0.001512188	0.101102445	TRPC5;CAMK2D;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
Jensen COMPARTMENTS	Cation_channel_complex	0.001885922	0.101102445	TRPC5;CAMK2D;PDE4D;KCNMB4;KCNJ16;KCNA5
Jensen COMPARTMENTS	monolayer-surrounded_lipid_storage_body	0.001460324	0.101102445	DGAT2;AGPAT9;FGF10;HBEGF
Jensen COMPARTMENTS	Protein_phosphatase_type_1_complex	0.001855452	0.101102445	PPP1R15A;PPP1R15B

Jensen COMPARTMENTS	Neuronal_cell_body	0.002026457	0.101322845	SLC4A8;TRPC5;CAMK2D;GRIN3A;HOMER2;PDE1A;STRN;RGS8;TAC1;CYGB
Jensen COMPARTMENTS	ARC_complex	0.002211036	0.104410037	SLC25A3;EGR3;ARPP21;HBEGF
Jensen COMPARTMENTS	Plasma_membrane_part	0.00266312	0.117547608	SLC25A3;CAMK2D;TENM3;TGFA;KCNA5;SLCO5A1;SNTG2;GNG4;FLRT3;VWC2L;PIP5K1A;KCNMB4;DRD1;RGS8;GRASP;TRPC5;CXADR;TRPC3;CAV2;HOMER2;PDE4D;TPM1;IQSEC3;HTR1A;KCNJ16;SLC4A8;GRIN3A;NLRP10;VAMP1;SPRY2;STRN;MDGA1;GPR19;HBEGF
Jensen COMPARTMENTS	Somatodendritic_compartment	0.002765826	0.117547608	TRPC5;CAMK2D;HOMER2;CTTNBP2;PDE1A;HTR1A;ELFN1;CYGB;SLC4A8;GRIN3A;STRN;RGS8;TAC1
Jensen COMPARTMENTS	Plasma_membrane_region	0.003920688	0.127587509	CXADR;CAV2;HOMER2;PDE4D;IQSEC3;TPM1;TGFA;KCNJ16;KCNA5;GRIN3A;FLRT3;PIP5K1A;SPRY2;STRN;DRD1;GRASP
Jensen COMPARTMENTS	Cell_projection_part	0.003920688	0.127587509	TRPC5;CAMK2D;CXADR;HOMER2;CTTNBP2;DNAH6;TPM1;FLRT3;MAK;TBC1D30;ARMC4;VAMP1;PIP5K1A;SPRY2;STRN;DRD1
Jensen COMPARTMENTS	Transmembrane_transporter_complex	0.003301144	0.127587509	TRPC5;CAMK2D;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
Jensen COMPARTMENTS	Transporter_complex	0.003802566	0.127587509	TRPC5;CAMK2D;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
Jensen COMPARTMENTS	Axon_collateral	0.003776356	0.127587509	NRP2;ARPP21;VAMP1;GFRA1;TAC1
Jensen COMPARTMENTS	Photoreceptor_inner_segment	0.003546901	0.127587509	MAK;CIB2;GNB5
Jensen COMPARTMENTS	serotonin-activated_cation-selective_channel_complex	0.00405278	0.127587509	HTR1A;DRD1;TAC1;SCRT1
Jensen COMPARTMENTS	Secretory_vesicle	0.004510583	0.136928417	SV2C;VAMP7;CXADR;SYT12;CTTNBP2;CAV2;VAMP1;TMEM163;CKAP4;SYT6
Jensen COMPARTMENTS	Extrinsic_component_of_membrane	0.004953867	0.143285906	NLRP10;GNG4;CAV2;PIK3R3;GFRA1;RGS8;SYT6
GO Cellular Component	synapse (GO:0045202)	6.12018E-06	0.001315838	CAMK2D;CXADR;GRIN3A;VAMP7;SYT12;DOK7;IQSEC3;VWC2L;CIB2;VAMP1;ELFN1
GO Cellular Component	neuromuscular junction (GO:0031594)	0.000618184	0.061954212	CAMK2D;CXADR;DOK7;CIB2
GO Cellular Component	cell body (GO:0044297)	0.001300853	0.061954212	CAMK2D;GRIN3A;CXADR;RHEB;HOMER2;PDE1A;STRN;TAC1;CYGB
GO Cellular Component	ion channel complex (GO:0034702)	0.00144025	0.061954212	CAMK2D;TRPC5;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
GO Cellular Component	cation channel complex (GO:0034703)	0.001440796	0.061954212	CAMK2D;TRPC5;PDE4D;KCNMB4;KCNJ16;KCNA5
GO Cellular Component	neuronal cell body	0.001915818	0.068650144	CAMK2D;GRIN3A;HOMER2;RHEB;PDE1A;STRN;TAC1;CYGB

	(GO:0043025)			
GO Cellular Component	transporter complex (GO:1990351)	0.003038671	0.081664281	CAMK2D;TRPC5;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
GO Cellular Component	transmembrane transporter complex (GO:1902495)	0.002733791	0.081664281	CAMK2D;TRPC5;GRIN3A;PDE4D;VWC2L;KCNMB4;KCNJ16;KCNA5
GO Cellular Component	intercalated disc (GO:0014704)	0.003546901	0.084731534	CAMK2D;CXADR;KCNA5
GO Cellular Component	synapse part (GO:0044456)	0.005840079	0.106989791	SV2C;GRIN3A;CTTNBP2;HOMER2;IQSEC3;STRN;TMEM163;GRASP;SYT6
GO Cellular Component	apical part of cell (GO:0045177)	0.005971523	0.106989791	VAMP7;HOMER2;DCHS1;FAT4
GO Cellular Component	cell-cell contact zone (GO:0044291)	0.00579521	0.106989791	CAMK2D;CXADR;KCNA5
GO Cellular Component	lipid particle (GO:0005811)	0.010218973	0.169006089	DGAT2;CAV2;CKAP4
GO Cellular Component	calcium channel complex (GO:0034704)	0.011839446	0.169073476	TRPC5;CAMK2D;PDE4D
GO Cellular Component	occluding junction (GO:0070160)	0.012582212	0.169073476	CXADR;CLDN23;FRMD4A;STRN
GO Cellular Component	tight junction (GO:0005923)	0.012582212	0.169073476	CXADR;CLDN23;STRN;FRMD4A
GO Cellular Component	extrinsic component of membrane (GO:0019898)	0.015528333	0.196387739	NLRP10;CAV2;GFRA1;SYT6
GO Cellular Component	photoreceptor inner segment (GO:0001917)	0.019531156	0.228621017	MAK;CIB2
GO Cellular Component	potassium channel complex (GO:0034705)	0.021267071	0.228621017	KCNMB4;KCNJ16;KCNA5
GO Cellular Component	voltage-gated potassium channel complex (GO:0008076)	0.020490445	0.228621017	KCNJ16;KCNMB4;KCNA5
GO Cellular Component	postsynaptic membrane (GO:0045211)	0.023505428	0.235780597	GRIN3A;HOMER2;IQSEC3;STRN;GRASP
GO Cellular Component	extracellular space (GO:0005615)	0.024126387	0.235780597	TLE2;CXADR;USPL1;SEMA3C;RALGAPA2;TGFA;LAMB1;SFRP1;FLRT3;VWC2L;SPARCL1;TAC1;MDGA1;HIST1H2BC;HBEGF;FGF10
GO Cellular Component	synaptic vesicle (GO:0008021)	0.034828535	0.321405714	SV2C;CTTNBP2;SYT6
GO Cellular Component	contractile fiber (GO:0043292)	0.035877847	0.321405714	TPM1;MYH11
GO Cellular Component	synaptic membrane (GO:0097060)	0.041794148	0.359429669	GRIN3A;HOMER2;IQSEC3;STRN;GRASP