Su	plemnStary	plemnStatFin	gntnatFin	uSlnsmSet1FAn1		BleCD	1eBEGHI2y.p32a4L	1eBEGHI2y.p32aEJ	lFmSeaseCtr
K	LKLKE5675E5KE5KKLKLK7□	pleBlFiinuasn11aunFmaDlemnSta□	pyHy□	HI2y.p32	pyHy□	temaset Sunlnu.AFsBleCtu			K
□	pELKLKE5LEHH3HH5KE	plemnF eina CACtSmaF1DEamDnEplemnF eina CACtSmaF1DEamDn	p2LE	HI2y.p32	p2LE	temaset Sunlnu.AFsBleCtu	K445EE□	K44KE	E
□	LKLK36262E62LKLK4LKLK46p	plemnStantFA1nuaeie1eB	L□	HI2y.p32	L□	temaset Sunlnu.AFsBleCtu		KK4K5	4
□	LKLK3gLKL47pp44ELKLKLKL	y mleDSt	yy□	HI2y.p32	yy□	temaset Sunlnu.AFsBleCtu			K
□	gKKE45LKLKKKKE4LKLKKKF	LiLeSuaAnmFaL5aDlnsCl elaDlemnStAStuStBaFiS1a3ainiAnla4	Lp334	HI2y.p32	Lp334	temaset Sunlnu.AFsBleCtu	KKKE5□		4
□	64464 4ELKLK2644644LKL4Eyr6	ISelnueStalnuCsmF na4asmeD1F iSs	Iy4	HI2y.p32	Iy4	temaset Sunlnu.AFsBleCtu	KKE4K□	KKE□	E
□	p5pELKLKErEpLKLKI4EEK5g	g1CmFmSetnaDnleSuF npeDe1SDSuauleDnleSunaB1CmFmSetnaDnleSuF naiSmesetulSFgp5	gp5	HI2y.p32	gp5	temaset Sunlnu.AFsBleCtu	KK54□	KE4E54□	E
44	LKLKyEHH5HLKLKI66766766	niAlFtnE esSFmnuaBCFt1FmnaStF naaFtuapy7aueiFStsetmFStStBaDlemnSta4	Lgr4	HI2y.p32	Lgr4	temaset Sunlnu.AFsBleCtu	KEK54□	K445□	E
4E	6IELKLKKLKLKIp5g5Ep5ELKI	LsIsentinaLamSen mnlF na4LsIsentinaLamSen mnlF naEaiSmesetulSF1	LHI4LHIE	HI2y.p32	LHI4	temaset Sunlnu.AFsBleCtu		K44KEK4	4
45	6HKLKELKLK344KLKLKIL46H	HetmFsmStE esSFmnuaDlemnStISna5	HILp5	HI2y.p32	HILp5	temaset Sunlnu.AFsBleCtu			K
4□	E4LKLKLKLKIr4E4Eg4	LyaunuleBntF naCASCStetnaSlet C1ClaDlemnStaaiSmesetulSF1	y2□	HI2y.p32	y2□	temaset Sunlnu.AFsBleCtu		KE5□	4
4□	64E4E64E4LKLKIKLKLKH□	nsnDmelmDnamle StnDlemnStaDeDEmF nanmFplemnStmle StnDeDEmF n	pIp□	HI2y.p32	pIp□	temaset Sunlnu.AFsBleCtu			K
4□	LKLK7LKLKLK2566LKLKI4656	eCtuFAeCmaeie1eBa4	34	HI2y.p32	34	temaset Sunlnu.AFsBleCtu			K
EK	6E5LKLKIpKKrK6K6□	FlaCD mlnFian1nintmAStuStBaDlemnStaE	2p	HI2y.p32	2p	temaset Sunlnu.AFsBleCtu			K
E4	65LKLKI6E6Er6Er6ErELKL3r15	yalnDnFmsetmFStStBaDlemnSta□	y□	HI2y.p32	y□	temaset Sunlnu.AFsBleCtu		4KE54□	4
E□	p445K6p445KELKLKI4KLEK35	pe1Eunt1FmnAStuStBaDlemnSta4pe1Eunt1FmnAStuStBaDlemnSt	pL3pH4	HI2y.p32	pL3pH4	temaset Sunlnu.AFsBleCtu	KK54□	KE5EEK45□	E
E□	p4p4K5LKLK4p4KLKLKLKI3p4	H1elSunasFttn1aDlemnStGJLH1GJansFtBnamlFt Delmnla□	HH□	HI2y.p32	HH□	temaset Sunlnu.AFsBleCtu			K
E□	LKLKgE2LKLKE63ELKLKEy□	2alSAe eiF1aDlemnSta5aiSmesetulSF1	p5□	HI2y.p32	p5□	temaset Sunlnu.AFsBleCtu			K
E□	64KKLKLKHprpK4p3KK5	2SBtF1aDnDmSuF naseiD1naCACtSmaE	2pH2E	HI2y.p32	2pH2E	temaset Sunlnu.AFsBleCtu	KK□	KKK4E□	E
4	4545ELKLKE45□	nmnleBntneC atCs1nFlalSAetCs1neDlemnStayISn	py□	HI2y.p32	py□	temaset Sunlnu.AFsBleCtu			K
E	6IgELKLK7g35y2pKLKLKE6IgLI	nmlemlFt De etunlSnuaDlemnStapg4K	pg4K	HI2y.p32	pg4K	temaset Sunlnu.AFsBleCtu			K
□	6LKLK6E6pKyppyEp6g□	E2aDlemnF einatetLIpF nalnBC1FmelaCACtSma4□	p2y4□	HI2y.p32	p2y4□	temaset Sunlnu.AFsBleCtu	KKE5E		4
5	pKEKLKLK6LKLE3□	g1CmFmSetnaDnleSuF na4g1CmFmSetnaDnleSuF n	gp4	HI2y.p32	gp4	temaset Sunlnu.AFsBleCtu	KEK5E□		4
□	HLKLKEE4rEpEH4EHEH6E43I	K2alSAe eiF1aDlemnSta4K	p4K	HI2y.p32	p4K	temaset Sunlnu.AFsBleCtu		K4K4□	4
□	pEK44LKLKE5pEK4437LKLKpI	LleiFmSsFiSteEsSuaunsFlAeLF n	yyH	HI2y.p32	yyH	temaset Sunlnu.AFsBleCtu	KE5E□	KK4K□	E
□	LKLK5633 7KE63E65K65E6L6L□	eteCtsmSetF1aH4nmnlFulee1Fmna tmE naiSmesetulSF1	Iy4□	HI2y.p32	Iy4□	temaset Sunlnu.AFsBleCtu	KE4□		4
□	6KK4KE6KK4KLKLK624 26E6E1	H1FmlStanFasESta4H1FmlStanFasESt	HIH	HI2y.p32	HIH	temaset Sunlnu.AFsBleCtu	KK444□	KEKKKK□	E
5K	LKLKE6pE6pE2LKLKEg□	SAe einAStuStBaDlemnSta4	3p4	HI2y.p32	3p4	temaset Sunlnu.AFsBleCtu	KK□	KK4EE	E
54	6464ELKLK5K64□	tueDS1St34	2g34	HI2y.p32	2g34	temaset Sunlnu.AFsBleCtu	KKK4□	K4K5E4E	E
5□	35ygKELKLKKEKEELKL7LLKI	LIpAStuStBasF nmmna CAFiS1a3ainiAnlaaiSmesetulSF1	L3H3□	HI2y.p32	L3H3□	temaset Sunlnu.AFsBleCtu	KEK□		4
55	65KE65KLKLKH H37H5	E2aDlemnF einatetLIpF nalnBC1FmelaCACtSma4	p2y4	HI2y.p32	p2y4	temaset Sunlnu.AFsBleCtu	K4545□	KEK□	E
5□	LKLK645	nmE1GEJaBSFtma1FlEnaDlemnStaeie1eBa4	g4	HI2y.p32	g4	temaset Sunlnu.AFsBleCtu			K
5□	LKLK254E54LKLKK	IlFSsStBaDlemnStaDFlmSs1naseiD1naCACtSma□	ILppH□	HI2y.p32	ILppH□	temaset Sunlnu.AFsBleCtu		KKK4K□	4
5□	KK6pEI4ELLKLK56pEI4K36pEI4	gpalnuCsmF ngpalnuCsmF naE	gpE	HI2y.p32	gpE	temaset Sunlnu.AFsBleCtu			K
5□	6H5ELKLK6H56H5K35gH5H5□	eCtuFAeCmaeie1eBaE	3E	HI2y.p32	3E	temaset Sunlnu.AFsBleCtu	455□		4
K	IH67467456746746746 74E674LKL	ule mnleSua44AnmFunuleBntF na4ISnaDlemnSt	2y4434□	HI2y.p32	2y4434□	temaset Sunlnu.AFsBleCtu			K
E	LKLKKEpKE35K64	2n1nteDlemnSta□	2p4	HI2y.p32	2p4	temaset Sunlnu.AFsBleCtu			K
□	6445LKLKELKLKKLKLKEKg4F	ILayLAStuStBaDlemnSta5□	ILy3pIyp5□	HI2y.p32	ILy3p	temaset Sunlnu.AFsBleCtu	KEKE	K5K□	E
□	ELKLKH27EEHEH4HE5643HK	LyaunuleBntF naCASCStetna4aF1DEa CAseiD1naCACtSma4KaiSmesetulSF1	yL4K	HI2y.p32	yL4K	temaset Sunlnu.AFsBleCtu	KKE□	KKE4K4	E
□	6LLKLKy4	2euSCi.uleBntansFtBnla2euSCi.uleBntansFtBnl	2HL□	HI2y.p32	2HL□	temaset Sunlnu.AFsBleCtu			K
□	LKLK66IEp4E4p4E4LKLKL3LK	K2alSAe eiF1aDlemnSta4□	p4p4H4elE	HI2y.p32	p4□	temaset Sunlnu.AFsBleCtu	KK5554□	K45EK4□	E
□	LKLKpK8□	3F F1asn11aFunSetaie1nsC1n	3HL□	HI2y.p32	3HL□	temaset Sunlnu.AFsBleCtu	K455KK4□	KKK4□	E
K	LKLK6p□	I224ISnaDlemnSt	I224□	HI2y.p32	I224□	temaset Sunlnu.AFsBleCtu		K4454	4
4	62ELKLKKLKLE5562□	nCSlnuaelainSemSsatCs1nFlauSS SetaDlemnSta4aeie1eB	y4	HI2y.p32	y4	temaset Sunlnu.AFsBleCtu		K4KEE□	4
E	LKL5r3r4LKgELKgLKLKLKgLK	mntunua tFDmemFBiStE	2IE	HI2y.p32	2IE	temaset Sunlnu.AFsBleCtu	K544□	K4K5□	E
□	65r4LKLKKK65r4g565r4E4626K	tsetntmSetF1aieStE	I□	HI2y.p32	I□	temaset Sunlnu.AFsBleCtu	KEK44	K□	E
5	6p7LKLKK□	IleiAe DetuStamDn4aueiFStsetmFStStBaDlemnStaL	I2yL	HI2y.p32	I2yL	temaset Sunlnu.AFsBleCtu	KK45□		4
□	LKLK6p6pE6IgK	EsCe1FlaDlemnSta elmStBE esSFmnuaDlemnStaIL4aeie1eB	IL4	HI2y.p32	IL4	temaset Sunlnu.AFsBleCtu	K454□	KE54E□	E
□	6H4ELKLK46H4pH5HyH5HpH	LpEaseiD1naCACtSmaiC	LpE4	HI2y.p32	LpE4	temaset Sunlnu.AFsBleCtu	KE55K□	KKK444	E
□	LKLK65LKLK□	rH2aseiD1naCACtSmarHE□	Lp□	HI2y.p32	Lp□	temaset Sunlnu.AFsBleCtu	K5E5□	K44□	E
□	6y6yELKLK6y6y6y6y53E3K66343	2nSClnaISnaDlemnStaE	27E	HI2y.p32	27E	temaset Sunlnu.AFsBleCtu	K4E44□	KKK45E	E
4	5E5555 5LKLK55LKLK74	ICielaDlemnStay5	IpyEE	HI2y.p32	IpyEE	temaset Sunlnu.AFsBleCtu	KK4	KEK44	E
E	644 6445644LKLKI35yyH644E	ple mFB1FtuStaa tmE na□	pIg2□	HI2y.p32	pIg2□	temaset Sunlnu.AFsBleCtu	KK45K□	K4EKK5□	E
□	624624LKLKE624 32624E33E6246	pKaDlemnStaH4el4□	H4el4□	HI2y.p32	H4el4□	temaset Sunlnu.AFsBleCtu			K
5	p4KLKLK4LKLKLKLKILE	2tFDmeEtStEAStuStBaDlemnSt	2E3p2E3pH4□	HI2y.p32	2E3p	temaset Sunlnu.AFsBleCtu		KK4K5□	4
□	66LKLK7ELKLK4LKLKI7LKLK	L1DE4EiFtte LmlFt nlF naLg□	Lg□	HI2y.p32	Lg□	temaset Sunlnu.AFsBleCtu			K
□	HKg5LKLK74E32□	CFlemSsamlFt 1FmSetaStSmSFmSetaEsmelaaCACtSma□	r□	HI2y.p32	r□	temaset Sunlnu.AFsBleCtu	KKKKK45	KK45□	E
□	5LKLK74LKLKE5E5LKLKy2g□	r esSmlFmnaunuleBntF naLyaCACtSmaAnmFaiSmesetulSF1r esSmlFmnaunuleBntF naLy	ry3	HI2y.p32	ry3	temaset Sunlnu.AFsBleCtu	KEE5E□	KEE44□	E
□	y35545E545LKLK7K6p46p46p46p	rte Sme1anFS DeDEmnaFtuauSDeDeSte Sme1DntmFS DeDEmnaStF naErte Sme1anFS	pprpEpprp4	HI2y.p32	pprpE	temaset Sunlnu.AFsBleCtu			K
K	65pLKLKK44p25HE□	Stn StISnaDlemnStarLStn StISnaDlemnSt	rL	HI2y.p32	rL	temaset Sunlnu.AFsBleCtu			K
E	6K44KLKLKH5y6K44K56K44KE	plemnSta2IplemnSta2I2rp	2I2I2rp	HI2y.p32	2I□	temaset Sunlnu.AFsBleCtu			K
□	35yr36pKELKLKKr6pKEE6pKE1	2nlStn.mlnetStnDlemnStaStF naL4	L4	HI2y.p32	L4	temaset Sunlnu.AFsBleCtu			K
5	64KKE64KKLKLKKLKKHH64K	SmesetulSF1aSttnlainiAlFtnaDlemnStaL4□	L4□	HI2y.p32	L4□	temaset Sunlnu.AFsBleCtu	KK4E□	K5KE□	E
□	LKLKKKKKKEHKK	nClF1asn11aFunSetaie1nsC1na4ISnaDlemnStplesn nuatnClF1asn11aFunSetaie1nsC1na4	H4	HI2y.p32	H4	temaset Sunlnu.AFsBleCtu	K5K5	KK4K55K5□	E
□	LKLKK6467LKLKKH256LELKL	IaueiFStsetmFStStBaFiS1aDlemnStaIaueiFStsetmFStStBaFiS1aDlemnStaEIaueiFStsetmF	IyIyEIy4	HI2y.p32	Iy□	temaset Sunlnu.AFsBleCtu			K
□	65654LKLKK65□	2elmStBatnSt4E	24E	HI2y.p32	24E	temaset Sunlnu.AFsBleCtu	KKK4□	K544E	E
□	LKLKK2p4E4K□	He11FBntaF1DE4GrJasESt	HL4	HI2y.p32	HL4	temaset Sunlnu.AFsBleCtu	K4E5□	KK4E55K□	E
□	LKLKKp5KKEp5KK2K6EK4Kp5	LiSteaFsSuamlFt DelmnlSSmFmelaFiSteaFsSuamlFt Delmnla4SSmFmelaFiSteaFsSuamlFt	2H4L2H4L□	HI2y.p32	2H4L□	temaset Sunlnu.AFsBleCtu			K
K	K66KKKK4KEIKpEEEEpEEELK	nmnleBntneC atCs1nFlalSAetCs1neDlemnSta□	p□	HI2y.p32	p□	temaset Sunlnu.AFsBleCtu			K
4	644LKLKgEELKLK44LKLKgEp1	euF1aieuC1Fmela4	4	HI2y.p32	4	temaset Sunlnu.AFsBleCtu	KK5E4E□	KK54EEE	E
E	6HKLKLK4LKLK6HKELKLKK	2HaStF na SBtF1StBaStSASmela4	2Hr4	HI2y.p32	2Hr4	temaset Sunlnu.AFsBleCtu	KEKK4	KE55E4□	E
□	LKLK4L6KH	yeCA1nmlFtunuaLAStuStBaDlemnSta2mFCntaeie1eBa4	2IL4	HI2y.p32	2IL4	temaset Sunlnu.AFsBleCtu		K5KEK4	4
5	pEppLKLK45p□	LIFDmStE	LrpE	HI2y.p32	LrpE	temaset Sunlnu.AFsBleCtu		KK5554□	4
□	LKLK4g43yK644E644L2Hr7LKL	LyaunuleBntF naCASCStetna4aF1DEa CAseiD1naCACtSma□	yL□	HI2y.p32	yL□	temaset Sunlnu.AFsBleCtu	KE□	KK5E□	E
□	LKLK4gK4LKLKLKLKKK4ELK	4ayFa n1nteDlemnSt	2p4□	HI2y.p32	2p4□	temaset Sunlnu.AFsBleCtu			K
□	LKLK4gKKEK35yp55r□	Ls1DlemnStamSen mnlF na4	pL4	HI2y.p32	pL4	temaset Sunlnu.AFsBleCtu	K455□	K45EE4	E
□	LKLK4LKLKLKLI6363y626356 3LK	Hn11aFunSetaie1nsC1na4	HLy4	HI2y.p32	HLy4	temaset Sunlnu.AFsBleCtu	KEEKE□	KK45□	E
4KKKK	65LKLK47KE	plemnF einaFsmSEmelaseiD1naCACtSmaE	p2E	HI2y.p32	p2E	temaset Sunlnu.AFsBleCtu	K444□	KE4E5	E
4K4	4K3LKLKEg46E56E56E5E	LIpunDntuntmaLan1SsF nayy4	yy4	HI2y.p32	yy4	temaset Sunlnu.AFsBleCtu	KK5KEE	KE4K4E	E
4KEp	ELKLKEr4KHKK2KKI4	E2aDlemnF nalnBC1FmelaCACtSma4K3	p2H□	HI2y.p32	p2H□	temaset Sunlnu.AFsBleCtu	K4EEKK□	K4E□	E
4K□	LKLKLKL43KgIgLKL43KgpKEL	Lunt1e CssStFmna1E n	Ly2□	HI2y.p32	Ly2□	temaset Sunlnu.AFsBleCtu			K
4K5	H564KLKK64KLKLKp64KLKLK	HpaSBtF1e einaseiD1naCACtSma4	gp24	HI2y.p32	gp24	temaset Sunlnu.AFsBleCtu	KK4□		4
4K□	pKyprELKLK35EyLKLKprLKLK		HE4el□	HI2y.p32	HE4el□	temaset Sunlnu.AFsBleCtu	KK555E	KKE4KEEE5	E
4K□	LKLKLKI3KLpK5pK5EpK5LKL	nmSte1AStuStBaDlemnSta4	3p4	HI2y.p32	3p4	temaset Sunlnu.AFsBleCtu	K454□	K4KE	E
4K□	LKL766K5LKL3r2LKLKLK6□	2nlStn.mlnetStnDlemnStaStF naL□	I□	HI2y.p32	I□	temaset Sunlnu.AFsBleCtu			K
44K	E7p5p5ELKLKLK6pHp55p5□	FD4agIpF nEsmSEmStBaDlemnSta4	Lp4gLp	HI2y.p32	Lp4gLp	temaset Sunlnu.AFsBleCtu	KEEKEE□		4
445	656LKLKLK25LKLKLKH56E6LK	gDlemnSt SBtF1StBaieuC1Fmela4	gp24	HI2y.p32	gp24	temaset Sunlnu.AFsBleCtu			K
44□	LKLKLK46pIE35yK6p16p14LKLK	es maseiD1naseiDetntma□	H□	HI2y.p32	H□	temaset Sunlnu.AFsBleCtu			K
44□	6E6LKLKLKrEg□	2elmStBatnSt2elmStBatnStamnliStF11aDlesn nu	2□	HI2y.p32	2□	temaset Sunlnu.AFsBleCtu	K4EKKKE□	KEE□	E
44□	K6464645LKLKLK64E6464	nCletatFSBFmela4	L4	HI2y.p32	L4	temaset Sunlnu.AFsBleCtu		K444K4	4
4EK	pEEK4pEEK4ELKLELKLKLK2E	plemnStSeF DFlmFmnGyEDFlmFmnJainm LmlFt nlF nplemnStSeF DFlmFmnainm LmlFt	pHI4	HI2y.p32	pHI4	temaset Sunlnu.AFsBleCtu	K4KKK5K□	KKE4E	E
4EE	6r7pK4K6r7pK356r7pK6r7pKE6r7	LA1aStmnlFsmela4	L3r4	HI2y.p32	L3r4	temaset Sunlnu.AFsBleCtu	K444□	KEE5□	E
4E□	LKLKH5yyy5yy5LKLKy2LKLKL	LgaDaCAFiS1ainiAnlaE	ppE	HI2y.p32	ppE	temaset Sunlnu.AFsBleCtu	KEEK□	K4K4□	E
4E5	LKLKLK464EE64EEEH34645pE	LISnaDlemnStLISnaDlemnStaELISnaDlemnStaLISnaDlemnSta5	LELL5	HI2y.p32	LE	temaset Sunlnu.AFsBleCtu	KEK45EK□		4
4E□	LKLKLKE6E6□	yygaueiFStsetmFStStBaDlemnSta4	yyg4	HI2y.p32	yyg4	temaset Sunlnu.AFsBleCtu	KEKKE□	KKE4	E
4E□	LKLKLK2LLKLKH5yg5p444p444	pe1SeSIC alnsnDmel	p□	HI2y.p32	p□	temaset Sunlnu.AFsBleCtu	KK55455	KKEKK□	E
4E□	64LKLKLK2ELKLKy2pE6464Ep	uleEsIsentinaLaunuleBntF naiSmesetulSF1	Ly□	HI2y.p32	Ly□	temaset Sunlnu.AFsBleCtu	KEEEK□	KE4KE	E
4E□	3KK54LKLKLK2r□	es maseiD1naseiDetntma□	H□	HI2y.p32	H□	temaset Sunlnu.AFsBleCtu	K55E5□		4
4E□	6p44E4LKLKgE74LEL3KLKLKg	IFDF St	ILp3p	HI2y.p32	ILp3p	temaset Sunlnu.AFsBleCtu			K
4K	p5LKLKLK25p5Ep53333□	peDEmSu1Ste Sme1amlFt nlaDlemnStaAnmFaS eeli	prIp3	HI2y.p32	prIp3	temaset Sunlnu.AFsBleCtu			K
44	6K56K56K56K56K5ELKLKLK2LKL	DSmnISF1auS seSuStaueiFStsetmFStStBalnsnDmela4	yy4	HI2y.p32	yy4	temaset Sunlnu.AFsBleCtu	K54K4□		4
4E	LKLK2E75pE55KELKLKLKIpE5	r eE1nl1HeLaunuleBntF naiSmesetulSF1	ry	HI2y.p32	ry	temaset Sunlnu.AFsBleCtu	K4EK45□	KK4K□	E
4□	64EE64ELKLKLKIr4	yn1mFGE5J mnle1alnuCsmF n	yHE5	HI2y.p32	yHE5	temaset Sunlnu.AFsBleCtu			K
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4□	63636 35LKLKLKI65gEg5HE67□	nDC1 SnaBCSuFtsnaie1nsC1naL	gL	HI2y.p32	gL	temaset Sunlnu.AFsBleCtu	KEEK5KK5	K4KK4	E
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45K	6rELKLKLK6r□	IeieInBC1St4	I42LIyI4	HI2y.p32	I4	temaset Sunlnu.AFsBleCtu	KEK4EE	K4KK5□	E
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45□	LKLKH5y7Ep4Ep4EE	LlLC1EmF naLLlLC1EmF naLaseiDetntma3LlLC1EmF naLaseiDetntmaH	L2L	HI2y.p32	L2L	temaset Sunlnu.AFsBleCtu	K4K5E□	K45E	E
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4□	LKLKH5ygK67p567p67pK4K67pE	HyE aFtmSBnt	HyE□	HI2y.p32	HyE□	temaset Sunlnu.AFsBleCtu	K4EE5KKE	K45E4E□	E
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44	6ELKLKH5ygpK662□	HmeD1F iSsaDeDEmSu1Ste Sme1amlFt nlaDlemnSta4	prIpH4	HI2y.p32	prIpH4	temaset Sunlnu.AFsBleCtu	K4KK5□		4
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45	6rLKLKLKH5yg624	ynuleBntF n.lnuCsmF na2yaFiS1ainiAnla3	y23	HI2y.p32	y23	temaset Sunlnu.AFsBleCtu		KEK44K□	4
4□	LKLKH5yg24pppIE65	ye1SsIuSDeDee1SBe FssFlSunDlemnStaB1se LmlFt nlF na5ayFa CACtSm	yy2I	HI2y.p32	yy2I	temaset Sunlnu.AFsBleCtu	KKEKKE5	K4554K□	E
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4K	KLKLKy25KLKL43KgLKL43Kgy	nCsStnlSsaB1SeiFStFsmSEmnuaDlemnSta4	gr4	HI2y.p32	gr4	temaset Sunlnu.AFsBleCtu			K
44	LKLKy2g644E644LKLKy2564 4LK	2DnsmlStaF1DEasEStatetnlmlesmSsa4	2pIL4	HI2y.p32	2pIL4	temaset Sunlnu.AFsBleCtu	KEKE4	KKK5□	E

weights (kDa). The inactive proform of the CTSD enzyme (~52-kDa) contains a pro-peptide (orange) that is cleaved off during maturation, yielding in an active single chain form (~48-kDa). Additionally, mannose residues are attached at two asparagine residues, at position N134, and N263, respectively, through N-glycosylation. The active mature form of CTSD consists of a light chain (~14-kDa) and a heavy chain (~34-kDa). (**B**) Representative Coomassie Brilliant Blue (CBB)-stained SDS-PAGE-gel of recombinant proCTSD after purification and size exclusion chromatography in indicated elution fractions. (**C**) CTSD activity of recombinant proCTSD after combining all fractions positive for proCTSD. To measure enzymatic activity assay, the pH was adjusted to pH 4.5 and aspartyl protease inhibitor pepstatin A (PepA) was added to examine specificity of assay and enzymatic activity of recombinant enzyme (n = 3 independently purified rHsCTSD). (**D**) Representative immunoblot of *CTSD* deficient H4 cells treated with 20 µg/ml rHsCTSD from 30 min to 72 h showing pro- (~ 52-kDa), single chain (~ 48-kDa) and mature (~ 34-kDa) CTSD forms. Additionally, to show all bands that appear as mature CTSD, a higher exposed image is shown. An unspecific band detected by CTSD antibody was present in all samples and labeled with an asterisk (*). (**E**) Quantification of single chain and mature CTSD forms analyzed together as active CTSD in H4 cells deficient in CTSD (*CTSD* KO) treated with 20 µg/ml rHsCTSD for 24, 48 and 72 h. Active CTSD was normalized to TUBB3 and expressed as fold change (n = 3). (**F**) Representative western blot analysis of lysate and lysosomal-enriched fraction of H4 *CTSD* KO cells treated with 20 µg/mL rHsCTSD for 72 h. CTSD pro- and single chain forms (~52-kDa/48-kDa) as well as the mature CTSD (~34-kDa) are enriched in the lysosomal fraction. GAPDH and CBB-stained SDS-Page-gel were shown as loading controls. (**G**) Quantification of CTSD activity of H4 *CTSD* KO enriched lysosomal fractions incubated with 20 µg/mL rHsCTSD for 72 h. Data shows CTSD activity in relative fluorescence units (RFU) (n = 3 independent lysosome-enrichment fractionations) (**H**) ToxiLight cytotoxicity assay of H4 *CTSD* KO cells treated with 20, 40, 60, 80 and 100 µg/ml rHsCTSD for 72 h, expressed as fold change (measured in triplicates for three independent experiments, n = 3). (**I**) Representative immunofluorescence images of H4 *CTSD* KO cells treated with 20 and 100 µg/mL rHsCTSD for 72 h and stained for cleaved CASP3 (red) as an apoptotic marker. DAPI (blue) was used to stain the nucleus. As a positive control H4 *CTSD* KO cells were incubated with 500 µM H_2O_2 for 4 h. Scale bar: 20 µm. Data represent mean ± SEM. Statistical analyses were performed by using a two-tailed unpaired Student's t-test for (C and G) and a one-way ANOVA together with a Dunnett's multiple comparison test (E and H). Statistical differences are shown toward the PBS treatment (E) and toward positive control for ToxiLight cytotoxicity assay (H). ****$p < 0.0001$, ***$p < 0.001$, *$p < 0.05$.

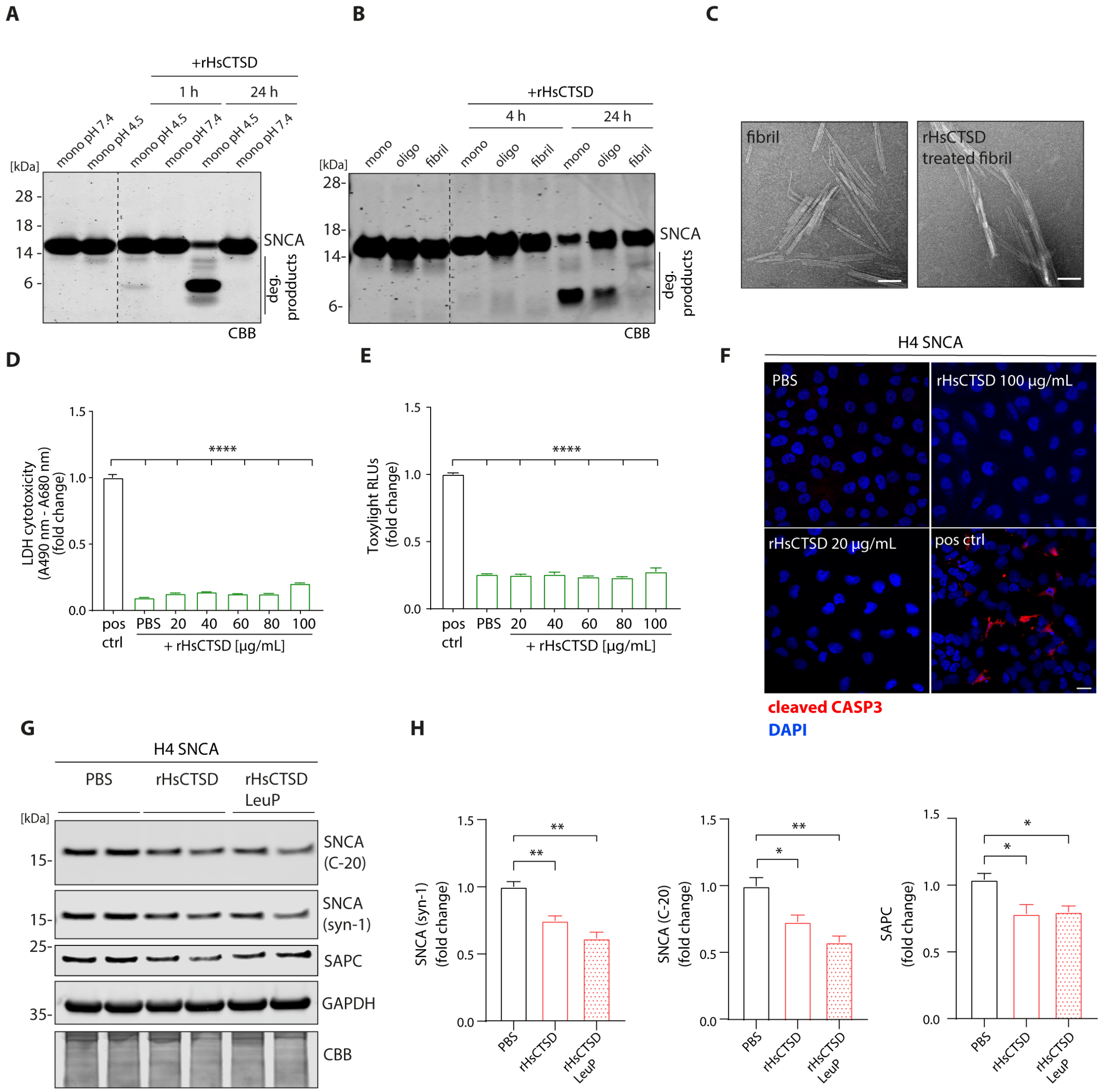

Figure S2. Functional analysis of rHsCTSD *in vitro* and in H4 cells overexpressing WT SNCA. (**A**) Representative CBB-stained SDS-PAGE-gel showing ability of purified enzyme to process recombinant monomeric SNCA. 20 µM SNCA was incubated with 0.3 µM rHsCTSD for 1 h and 24 h at pH 7.4 and pH 4.5 (lysosomal pH). (**B**) Representative CBB-stained SDS-PAGE gel illustrating the capacity of rHsCTSD to cleave and process monomeric as well as oligomeric forms (partly) after 24 h of digesting by rHsCTSD (0.3 µM). Fibrillary forms of SNCA were not processed by rHsCTSD after 24 h. (**C**) Representative negative stain TEM pictures of SNCA fibrils after incubation with and without rHsCTSD after 24 h. Scale bar: 100 nm. (**D**) LDH cytotoxicity assay and (**E**) ToxiLight cytotoxicity assay of H4 cells (SNCA overexpression) treated with different concentrations of rHsCTSD (20, 40, 60, 80, 100 µg/mL), expressed as fold change (measured in triplicates of three independent experiments, n = 3). (**F**) Immunofluorescence images of H4 cells (SNCA overexpression) incubated with 20 and 100 µg/mL rHsCTSD for 72 h and stained for cleaved CASP3 (red) as an apoptotic marker. DAPI (blue) was used to stain the nucleus. As a positive control, H4 cells were incubated with 500 µM H_2O_2 for 4h. Scale bar: 20 µm**.** (**G**) Representative western blot of H4 cells (SNCA overexpression) treated with PBS, 20 µg/mL rHsCTSD and 20 µg/mL rHsCTSD together with 5 µM Leupeptin (LeuP) for 72 h and stained for SNCA (C-20 and syn-1) and SAPC. GAPDH signal and CBB-stained SDS-gel were used as loading controls. (**H**) Quantification of SNCA (syn-1 and C-20) and SAPC signal were normalized to GAPDH and expressed as fold change (n = 3). All data represent mean ± SEM. Statistical analyses were performed by one-way ANOVA together with Dunnett's multiple comparison test with statistical differences toward the positive control (D and E) and PBS for (H). ****$p < 0.0001$, **$p < 0.01$, *$p < 0.05$.

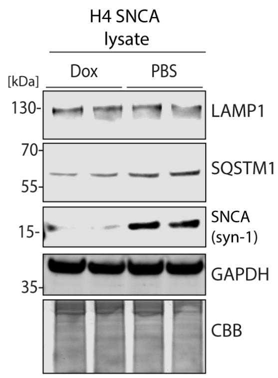

Figure S3. Effects of SNCA on endo-lysosomal and autophagic system in H4 cells overexpressing SNCA. Representative western blot of H4 cells incubated with Dox to decrease SNCA expression and PBS as an untreated control for 72 h. Signal for SNCA was detected by syn-1 and as autophagic markers, LAMP1 and SQSTM1 were used. Corresponding quantifications of LAMP1 and SQSTM1 are shown in Figure 3D. GAPDH and CBB stained SDS-PAGE were used as loading controls.

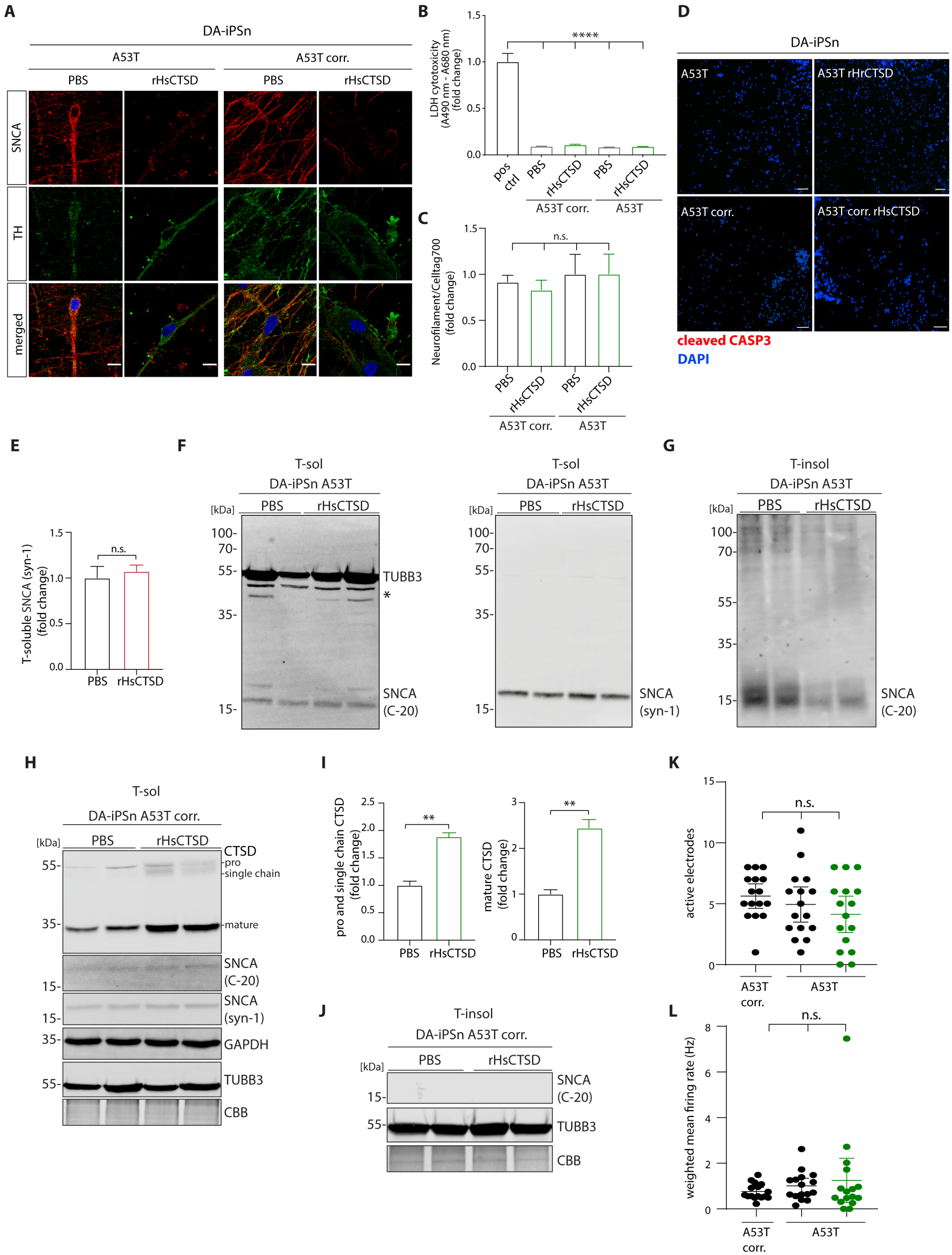
A
DA-iPSn
A53T
A53T corr.
PBS
rHsCTSD
SNCA
TH
merged
B
LDH cytotoxicity (A490 nm - A680 nm) (fold change)
****
pos ctrl
A53T corr.
A53T
C
Neurofilament/Celltag700 (fold change)
n.s.
D
A53T
A53T rHrCTSD
A53T corr.
A53T corr. rHsCTSD
cleaved CASP3
DAPI
E
T-soluble SNCA (syn-1) (fold change)
F
T-sol
DA-iPSn A53T
[kDa]
TUBB3
*
SNCA (C-20)
SNCA (syn-1)
G
T-insol
H
DA-iPSn A53T corr.
CTSD
pro
single chain
mature
GAPDH
CBB
I
pro and single chain CTSD (fold change)
mature CTSD (fold change)
**
J
K
active electrodes
L
weighted mean firing rate (Hz)

Figure S4. Characterization and functional analyses of DA-iPSn A53T mutant and isogenic control (A53T corr.) lines. (**A**) Representative immunofluorescence images of DA-iPSn A53T and A53T corr. using SNCA antibody LB509 (red) and dopaminergic marker tyrosine hydroxylase (TH; green) (n = 7 individual neurons per group). Scale bar: 10 µm. (**B**) LDH cytotoxicity assay of A53T corr. and mutant treated with and without rHsCTSD for 25 days (measured in triplicates of five independent treatments, n = 5), shown as fold change compared to the positive control. Positive control was provided by the Kit. (**C**) Quantification of neurofilament release to determine neuronal viability and early cell death in DA neurons performed by an in-cell western. Signals were normalized to cell stain (Celltag700) and are displayed as fold change compared to A53T PBS (measured in triplicates of four independent experiments, n = 4). (**D**) Representative immunofluorescence pictures of DA-iPSn A53T corr. and A53T mutant with and without rHsCTSD stained for cleaved CASP3. Scale bar: 100 µm. (**E**) Quantification of soluble SNCA by syn-1 antibody (corresponding western blot is shown in Figure 4D), normalized to GAPDH and expressed as fold change (n = 3). (**F**) Full size western blot membrane from T-sol (Triton-soluble) lysates of DA-iPSn A53T PBS and rHsCTSD treated cells. Left, Membrane was stained with the SNCA C-20 antibody, which was detected by the infrared channel 800. TUBB3 and its unspecific protein signal, which is marked with an asterisk (*), is also shown. Right, the same full size western blot stained with SNCA antibody syn-1 and detected by the infrared channel 680. (**G**) Full western blot membrane from T-insol (Triton-insoluble) lysates of DA-iPSn A53T treated with PBS or rHsCTSD stained with SNCA antibody C-20. (**H**) Representative immunoblot of T-sol lysates of A53T corr. DA-iPSn, stained for CTSD (pro- and single chain forms and mature forms) and SNCA (C-20 and syn-1 antibody). GAPDH, TUBB3 and CBB-stained SDS-gels were used as loading control. (**I**) Quantification of pro-/single chain form and mature CTSD signal intensities, normalized to GAPDH and expressed as fold change (n=3) (**J**) Representative immunoblot of T-insol lysates of A53T corr. DA-iPSn, indicating the absence of SNCA signal in the corrected line. TUBB3 and CBB-stained SDS-gels were used to control for equal protein loading (n = 3). (**K**) Quantification of active electrodes and (**L**) weighted mean firing rate (Hz) in A53T corr. and A53T before treatment (n = 16, each point represents one active well of a 48-well MEA plate). Green labeled graphs were exposed to rHsCTSD at day 44 of DA neuronal differentiation (Figure 4 J and K). Data represent mean ± SEM. Statistical analyses were performed by one-way ANOVA together with Dunnett's multiple comparison test (A and B). Statistical differences are shown in (B) toward positive control and in (C) towards A53T mutant line with PBS. A two-tailed unpaired Student's t-test was used for (E) and (I) and one-way ANOVA together with a Tukey's comparison test for (K and L). $^{****}p < 0.0001$, $^{**}p < 0.01$; n.s., not significant.

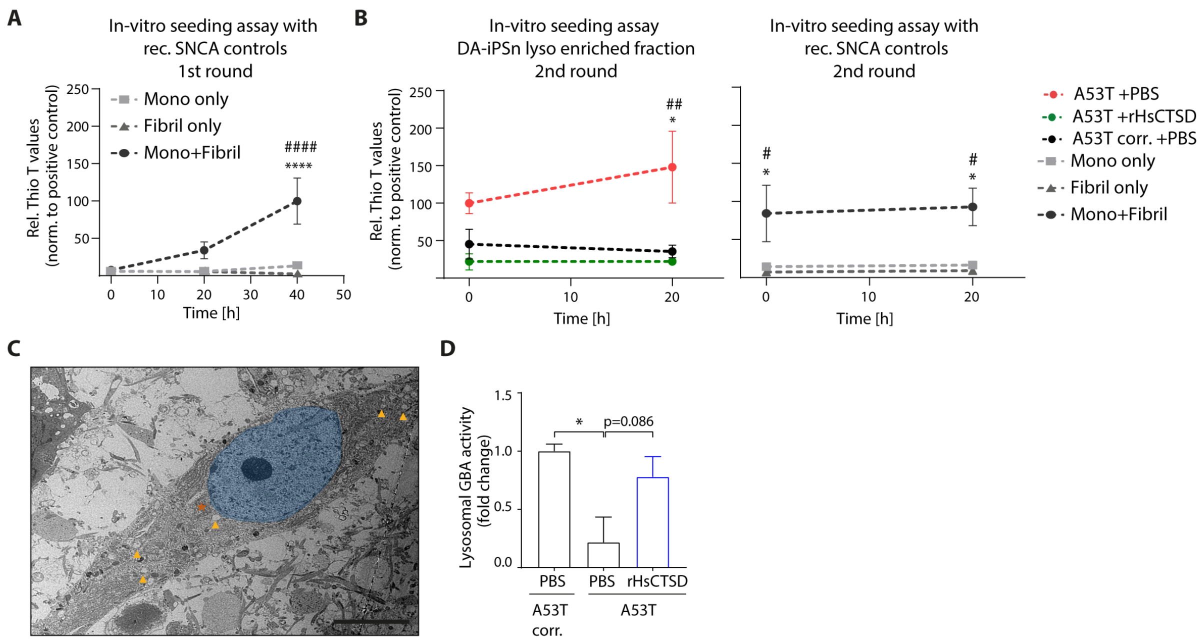

Figure S5. Characterization of lysosomes and autophagic vesicles from DA-iPSn harboring SNCA mutation (A53T). (**A**) Corresponding recombinant controls of first round *in vitro* SNCA seeding assay of DA-iPSn-derived lysosomal enriched fraction shown in Figure 5A. As negative controls purified recombinant SNCA monomers were incubated alone (mono only) and with SNCA fibril alone (fibril only) and as a positive control SNCA monomer was incubated together with SNCA fibril (fibril+mono). Graph shows relative Thio T signal normalized to positive control (fibril+ a-syn mono) (n = 3). (**B**) Analyses of two rounds of *in vitro* SNCA seeding assay of DA-iPSn A53T corr. and A43T mutant with rHsCTSD and without (PBS)-derived lysosomal enriched fraction and corresponding controls (n = 3). (**C**) TEM pictures of ultrastructural analysis of DA iPSn A53T corr. corresponding to Figure 5H. Blue: nucleus, yellow arrows: intracellular vesicles. Exemplary mitochondria is depicted as an orange star. Scale bars: 25 µm. (**D**) Quantification of lysosomal GBA activity in DA-iPSn A53T corr., A53T mutant and mutant treated with rHsCTSD for 21 days expressed as fold change (n = 3). Data represent mean ± SEM. Statistical analyses were performed by using two-way ANOVA with a Tukey's multiple comparison test (A and B). To highlight statistical differences asterisks (*) were used for A53T corr. vs. A53T and mono only vs. fibril+mono. Diamonds (#) were used for A53T vs. A53T +rHsCTSD and fibril+mono vs. fibril only. For (D) statistical analysis were performed by one-way ANOVA together with a Dunnett's multiple comparison test with statistical differences toward A53T corr.. ****/####$p < 0.0001$, **/##$p < 0.01$, */#$p < 0.05$; n.s., not significant.

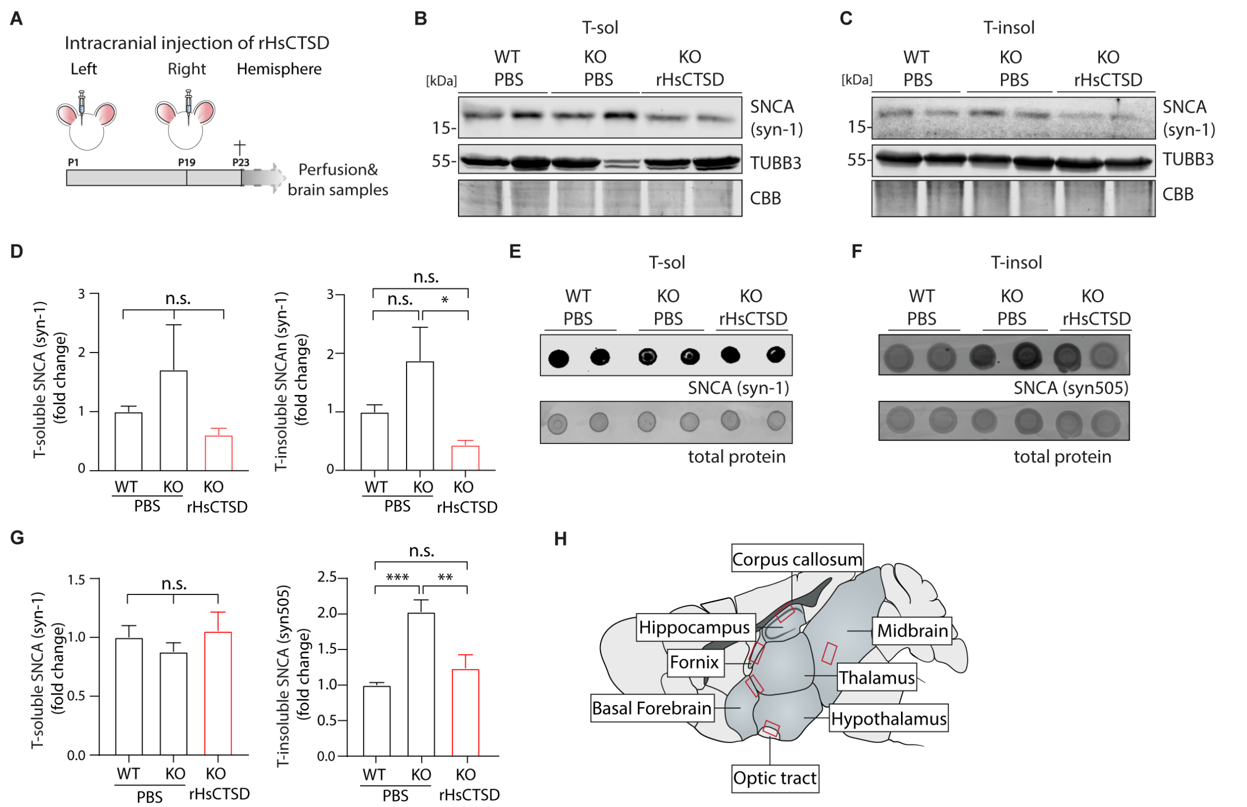

Figure S6. Analysis of SNCA levels within *ctsd* KO animals after treatment with rHsCTSD. (**A**) Cartoon illustrating the time line of intracranial injection (i.c.) time points of 100 µg rHsCTSD (P1 and P19) as well as time point of mice perfusion and sample acquisition (P23). (**B**) Representative immunoblot of T-sol and (**C**) T-insol from whole brain lysates extracted from wildtype (WT) and *ctsd* KO and *ctsd* KO mice i.c. injected with rHsCTSD (KO +rHsCTSD). (**D**) Respective quantification of T-sol (left) and T-insol (right) SNCA levels detected by syn-1 antibody, normalized to TUBB3 and expressed as fold change (n = 4 mice per group). (**E**) Representative dot blot from T-sol whole brain lysates of WT, *ctsd* KO and *ctsd* KO mice i.c. injected with rHsCTSD. Total SNCA was detected by syn-1 antibody and total protein stain (DirectBue71) was used to ensure equal protein load. (**F**) Representative dot blot of T-insol fraction of whole brain lysates of WT, *ctsd* KO and *ctsd* KO mice treated with rHsCTSD. SNCA was detected by syn505 antibody and total protein staining was used as loading control. (**G**) Respective quantification of T-sol SNCA by syn-1 (left) and pathological T-insol SNCA by syn505 (right). SNCA signals were normalized to total protein and expressed as fold change (n = 4 mice per group), compared to WT. (**H**) Schematic representation of the mouse brain in a sagittal cut. The region marked by the red square shows where the confocal images were taken. Data represent mean ± SEM. Statistical analyses were performed by one-way ANOVA together with Tukey's multiple comparison test. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, n.s., not significant.

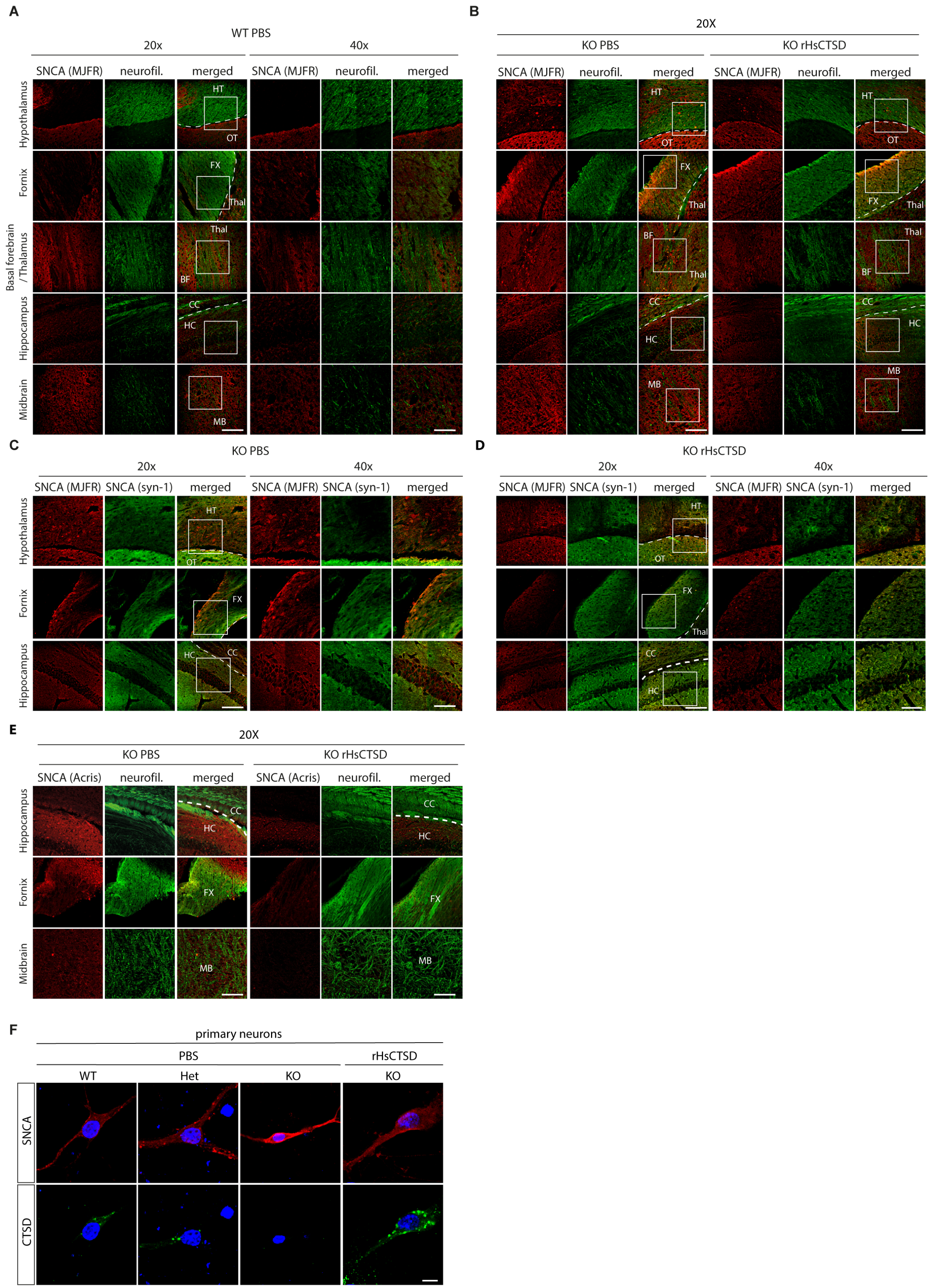
A
WT PBS
20x
40x
SNCA (MJFR)
neurofil.
merged
Hypothalamus
Fornix
Basal forebrain / Thalamus
Hippocampus
Midbrain
HT
OT
FX
Thal
BF
CC
HC
MB
B
20X
KO PBS
KO rHsCTSD
C
KO PBS
SNCA (syn-1)
D
KO rHsCTSD
E
20X
SNCA (Acris)
F
primary neurons
PBS
rHsCTSD
WT
Het
KO
SNCA
CTSD

Figure S7. Immunofluorescence images of WT mouse brain and *ctsd* KO mouse brain treated with PBS or rHsCTSD and stained for SNCA. (**A**) Representative confocal microscopy images of WT mouse brain treated with PBS. Pathology-associated SNCA was detected by the conformation-specific antibody MJFR-14-6-4-2 (red) and co-stained for neurofilament (green). The following brain regions are shown: Hypothalamus (HT), fornix (FX), basal forebrain/thalamus (BF/Thal), hippocampus (HC) and midbrain (MB). OT indicate the optical tract and CC the corpus callosum. The white dotted line indicates boundary between regions. The region marked by the white square in 20x is magnified in 40x. Images were taken with the 20x (scale bar: 100 µm) and 40x (scale bar: 50 µm) magnifications. (**B**) Representative confocal microscopy images of mouse brain from *ctsd* KO treated with PBS or 100 µg of rHsCTSD. The corresponding higher magnified (40x) images were marked by the white square and are shown in Figure 6F. Images were taken with the 20x (scale bar: 100 µm). The same antibodies and brain regions were used as shown in Figure 6F and S7A. (**C**) Representative immunofluorescence images *ctsd* KO mice treated with PBS and (**D**) with rHsCTSD stained with MJFR-14-6-4-2 (red) and co-stained for syn-1 (green). The images are 20x magnified (scale bar: 100 µm) and the marked white square indicate the 40x magnification (scale bar: 50 µm). Immunofluorescence images show the hypothalamus (HT), fornix (FX) and hippocampus (HC) of the mouse brain. The white dotted line indicates boundary between regions and OT stands for optical tract whereas CC for the corpus callosum. (**E**) Representative immunofluorescence microscopy images of *ctsd* KO hippocampus (HC), fornix (FX) and midbrain (MB) mouse brain areas i.c. injected with PBS or rHsCTSD. Brain areas are stained for SNCA by Acris antibody (red) and neurofil. (green). Mouse brain images were taken with a 20x magnification (scale bar: 100 µm). (**F**) Corresponding immunofluorescence stainings of primary neurons from WT, Het, KO and KO +rHsCTSD animals are shown in Figure 6L (merged). SNCA (syn-1) is shown in red, CTSD in green and nucleus in blue. Scale bar: 10 µm.