

1 **Supplementary Table 1. Antibodies used in this study**

Antigen	clone/ID	Host	Dilution			Source	Order nr.
			IF	WB	IP		
Akt	-	rabbit	-	1:1000	-	Cell signalling	9272
Amphiphysin1	Amphy#3	mouse	-	1:1000	-	DeCamilli's lab	-
AP-1 gamma adaptn	88	mouse	-	1:1000	-	BD Transduction	610386
AP-2 alpha adaptn	8	mouse	1:200	1:1000	-	BD Transduction	610502
AP-2 alpha adaptn	AC1M11	mouse	-	1:1000	-	Life Sciences	MA3-061
AP-2 alpha adaptn	AP-6	mouse	1:400	-	-	Haucke's lab	-
AP-2 beta adaptn	-	goat	-	-	10µg/ sample	Santa Cruz Biotechnology	SC6425
AP-2 beta adaptn	H-300	rabbit	-	1:1000	-	Santa Cruz Biotechnology	SC10762 (lot # E1304)
AP-3 µ3	p47	mouse	-	1:500	-	BD Transduction	discontinued
AP180	LP2D11	mouse	-	1:3333	-	Zhang/De Camilli's lab	-
BDNF	N-20	rabbit	-	1:200	-	Santa Cruz	sc-546
cleaved Caspase (Asp175)3	-	rabbit	-	1:1000	-	Cell Signalling	9661
CHC	TD1	mouse	-	1:500	-	Haucke's Lab	-
c-Myc	9E10	mouse	1:400	-	-	Sigma	M5546
Dynamin1	Dynamin1 #5	mouse	-	1:500	-	De Camilli lab	-
GFP	-	rabbit	1:10000	-	-	Abcam	ab6556

GFP	-	rabbit	1:1000	1:1000	-	MBL	598
Grb2	3F2	mouse	1:200	-	-	MBL	MS-20-3
HA	-	rabbit	1:400	-	-	Cayman	162200
His- tag	27E8	mouse	-	1:1000	-	Cell Signaling Technology	2366S
HSC70	-	mouse	-	1:5000	-	Affinity bioreagents	-
Hsc70	-	rat	-	1:5000	-	Enzo	SPA-815 (lot# 42)
IgG	-	goat	-	-	10µg/ sample	Sigma-Aldrich	15256
ITSN1	mAC+ linker	rabbit	-	1:1000	-	Shupliakov's lab	-
KCC2	-	rabbit	1:250	-	-	Jentsch's lab	-
LC3b	4E12	mouse	1:100	-	-	MBL	M152-3
LC3b	-	rabbit	1:250	1:500	-	Novus biochemical	NB600- 1384
mTOR	7C10	rabbit	-	1:1000	-	Cell Signalling	2983
p75NGF	-	rabbit	1:500	-	-	Abcam	ab8874
p150 ^{Glued}	-	goat	1:100	-	-	Abcam	ab11806
p150 ^{Glued}	1	mouse	-	1:1000	-	BD Transduction	610474 (lot# 07312)
pmTOR Ser2448	D9C2	rabbit	-	1:1000	-		5536
pRaptor Ser792	-	rabbit	-	1:1000	-	Cell Signalling	2083
pS6 Ser235/236	-	rabbit	-	1:1000	-	Cell Signalling	4856
pTrkB816	-	rabbit	1:500	-	-	Abcam	75173
p75NGF	-	rabbit	1:500	1:1000		Abcam	8874
p62	-	Guinea- pig	1:250	-	-	Progen	GP62-C
Rab7	-	goat	1:250	-	-	GeneTex	discontinued
S6	-		-	1:1000	-	Cell Signalling	2217

Stonin2	2424.5	rabbit	-	1:800	-	Haucke's Lab	-
Synaptophysin	7.2	mouse	-	1:2000	-	Synaptic Systems	101011
Synaptotagmin 1	41.1	mouse	-	1:500	-	Jahn's lab	-
TrkB	extracell. domain	rabbit	1:100- 1:200	1:500- 1:1000	-	Alomone Labs	ANT-019
Tubulin	B-5-1-2	mouse		1:5000	-	Sigma	T5168
Tubb3	-	rabbit	1:2000	-	-	Covance	PRB-435P

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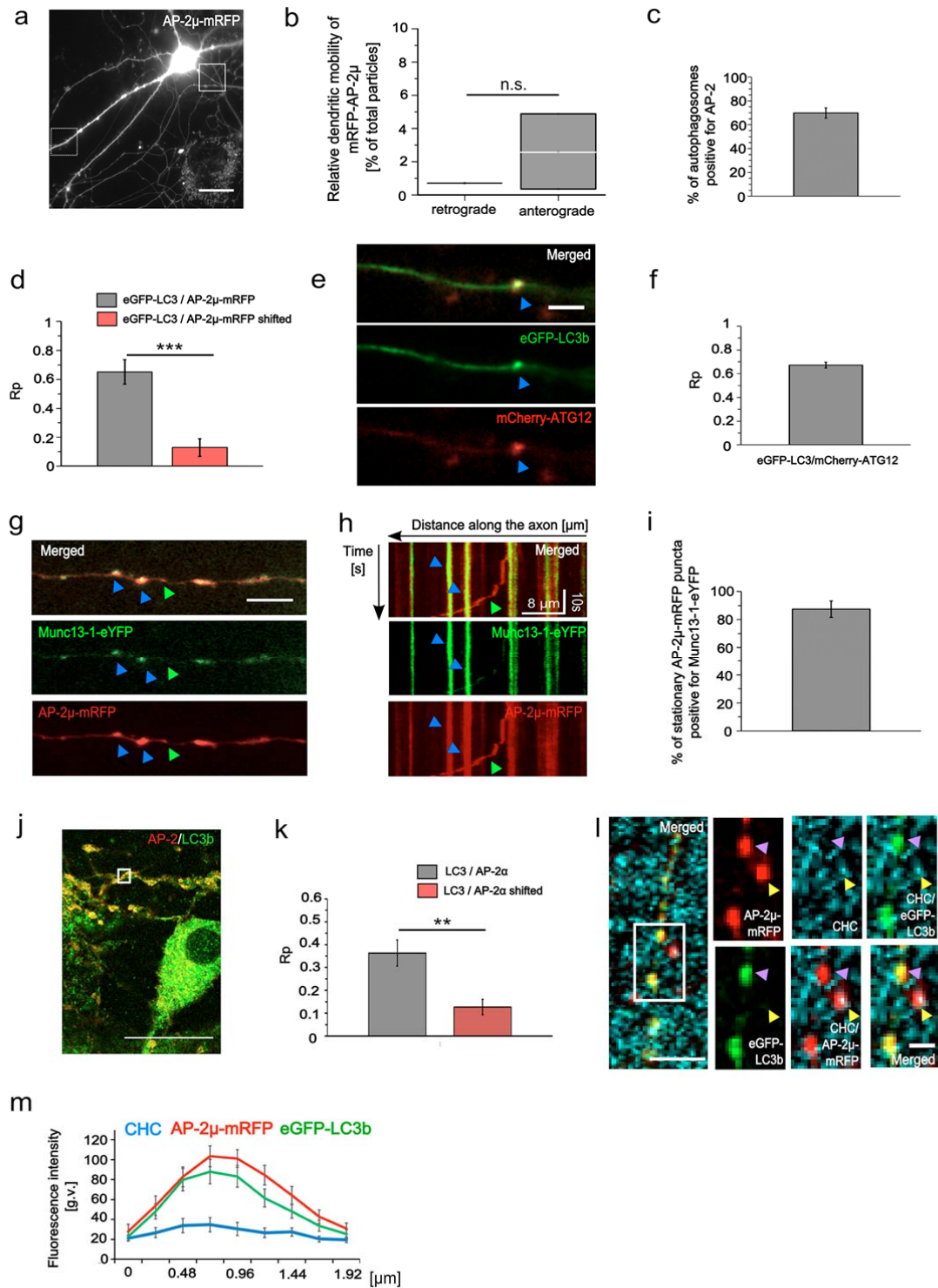
4 **Supplementary Table 2. Primers used in qPCR.**

Gene description	forward primer	reverse primer
BDNF	TCATACTTCGGTTGCATGAAGG	AGACCTCTCGAACCTGCCC
GAPDH	AACTTTGGCATTGTGGAAGG	ACACATTGGGGGTAGGAACA

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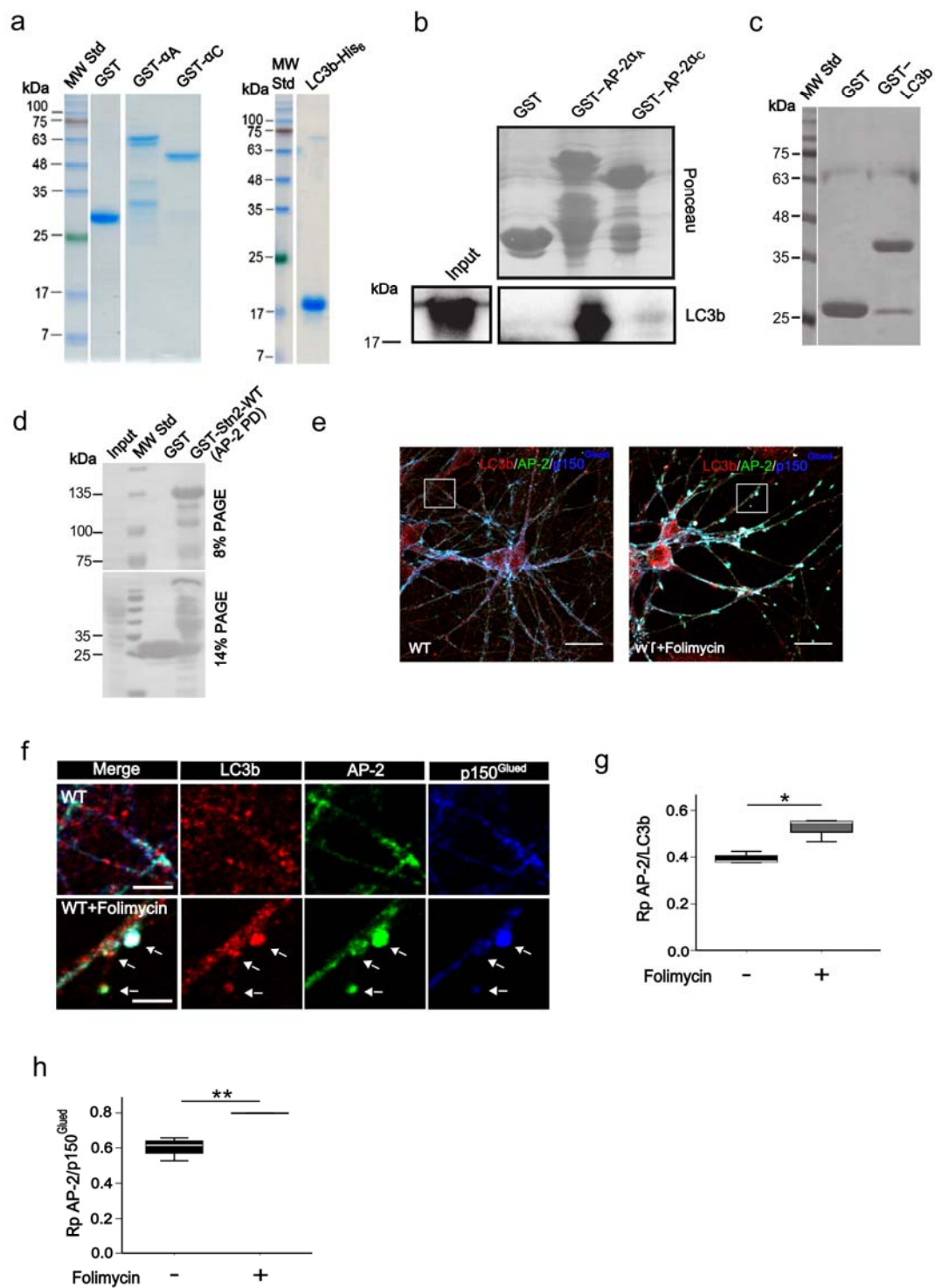


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9 **Supplementary Fig. 1. Dynamics of mRFP-AP-2μ transport in dendrites.** (a) Representative
10 image of a neuron, expressing mRFP-AP-2μ construct. White rectangular boxes indicate the
11 images represented in Fig.1. Scale bar, 20 μm. (b) Percentage of retrograde (0.71±0.01%) and
12 anterograde AP-2μ-mRFP puncta in dendrites (2.60±1.17%, n=3 independent experiments). n.s.,

13 non significant. **(c)** The relative number of eGFP-LC3b puncta colocalizing with AP-2 μ RFP in
14 axons of cultured neurons ($69.8\pm 4.4\%$ from total LC3b-eGFP puncta, $n=3$ independent
15 experiments). **(d)** Non-random colocalization of AP-2 μ -mRFP and eGFP-LC3b puncta in
16 neurons. Pearson's correlation coefficient of $R_p=0.65\pm 0.08$ indicates the high degree of
17 colocalization between AP-2 μ -mRFP and eGFP-LC3b puncta. To exclude the possibility of
18 random colocalization we repeated the analysis after shifting the green (eGFP-LC3b) channel
19 over a distance of 10 pixels relative to the red (AP-2 μ -mRFP) channel. The R_p calculated from
20 shifted images (red bar) was significantly lower ($R_p=0.13\pm 0.06$) compared to non-shifted images
21 ($p<.000$). **(e,f)** Representative images **(e)** and bar diagram **(f)**, revealing the colocalization of
22 eGFP-LC3b with ATG12-mCherry in axons of control cultured neurons ($R_p: 0.67\pm 0.02$). R_p was
23 calculated for 28 regions of interest (ROI, $5.1 \times 4.3 \mu\text{m}$) from $n=3$ independent experiments.
24 Scale bar in **(e)**, $5 \mu\text{m}$. **(g)** Confinement of stationary AP-2 μ -mRFP puncta to synapses revealed
25 by the presynaptic active zone marker Munc-13-1-eYFP. Scale bar, $5\mu\text{m}$. **(h)** Kymographs
26 generated from the data in **(g)**. **(i)** Relative number of stationary AP-2 μ -mRFP puncta confined
27 to active zones ($87.4\pm 5.9\%$ from total AP-2 μ -mRFP puncta, $n=3$ independent experiments). **(j)**
28 STED image of cultured neurons treated with folimycin and immunostained for LC3b and AP-2.
29 Scale bar, $15 \mu\text{m}$. White rectangular box indicate the area magnified in Fig. 1h. **(k)** Endogenous
30 AP-2 μ partially colocalizes with LC3b in neurons ($R_p: 0.36\pm 0.04$). R_p was calculated for 18
31 regions of interest per condition from $n=3$ independent experiments. **(l, m)**. Clathrin heavy chain
32 (CHC) is not enriched on AP-2 μ -positive autophagosomes. **(l)** Representative images and **(m)**
33 distribution pattern of CHC fluorescence intensity along AP-2 μ -positive autophagomes labeled
34 with eGFP-LC3b ($n=3$ independent experiments). Scale bars: main, $5 \mu\text{m}$, insert, $1\mu\text{m}$.

35 Data in **(b)** are illustrated as box plots as described in Methods. Data in **(c,d,f,ik,m)** and
36 all data reported in the text are mean \pm SEM.

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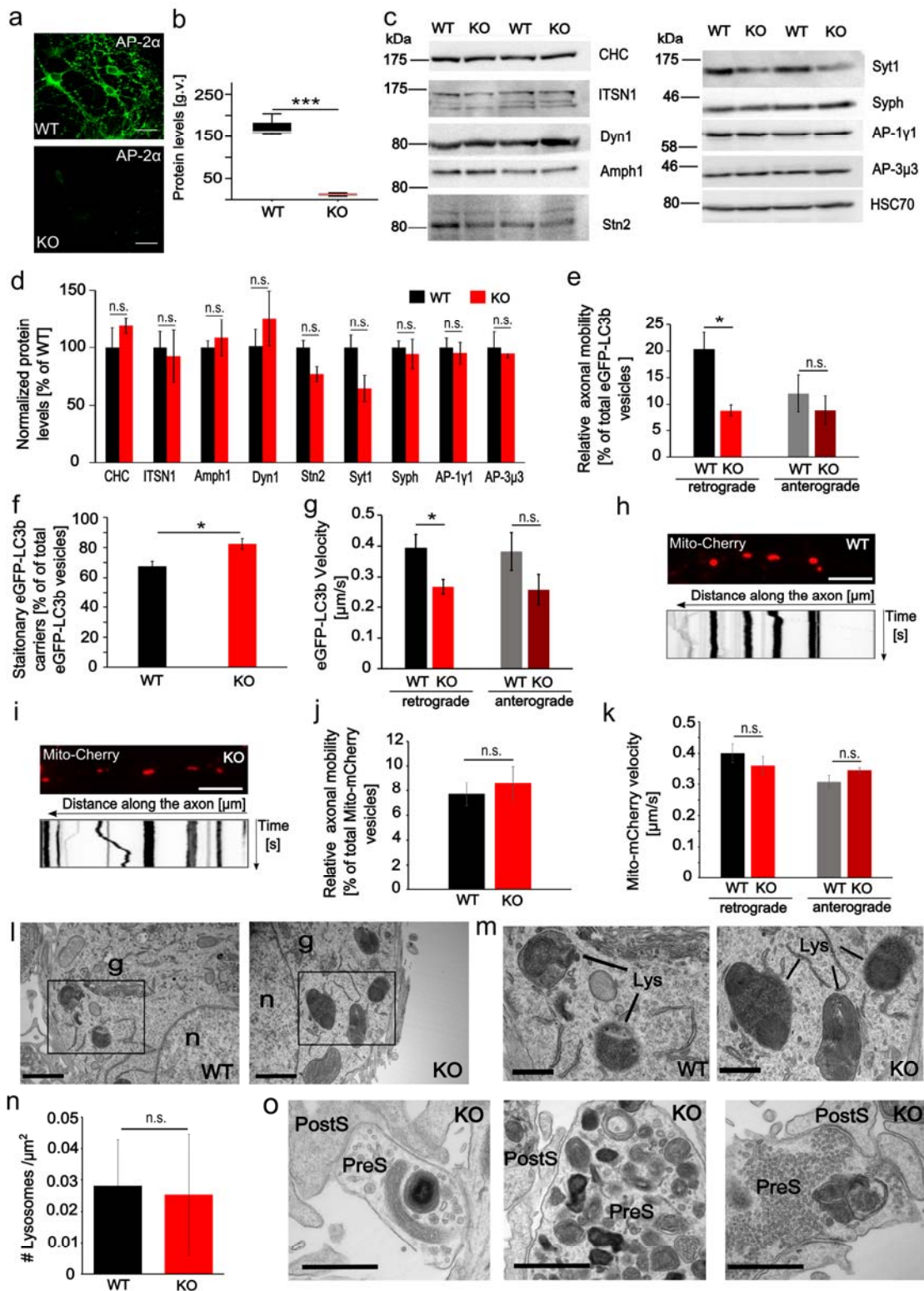
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39 **Supplementary Fig. 2. AP-2 colocalizes with LC3b and p150^{Glued} on autophagosomes. (a)**
 40 **Coomassie Blue stained gel of purified proteins used for the experiments shown in Fig. 2a. (b)**
 41 **Complex formation of endogenous LC3b with AP-2 α_A and AP-2 α_C . Upper panel: Ponceau-**
 42 **stained membrane. Lower panel: Immunoblot analysis of material affinity-purified from mouse**

43 brain lysates by GST-AP-2 α_A , GST-AP-2 α_C or GST taken as a control. AP-2 α_A and AP-2 α_C co-
44 purify native LC3b present in the lysate, albeit with different efficiency (AP-2 α_A > AP-2 α_C).
45 Input, 1.5% of lysate added to the assay. **(c)** Coomassie Blue stained gel of purified proteins used
46 for the experiments shown in Fig. 2b. **(d)** Ponceau stained membranes corresponding to the
47 affinity chromatography experiment shown in Fig. 2e. **(e,f)** Representative confocal images of
48 cultured cortico-hippocampal WT or AP-2 μ KO neurons left untreated or treated with folimycin
49 and immunostained for LC3b (red), AP-2 (green) and p150^{Glued}. Scale bars, (e) 20 μ m, (f) 5 μ m.
50 White rectangular boxes in (e) indicate the areas magnified in (f). **(g)** Folimycin treatment
51 significantly increases the colocalization of AP-2 with LC3b in cultured cortico-hippocampal
52 neurons (Rp Untreated: 0.40 \pm 0.02 versus Rp Folimycin: 0.53 \pm 0.03, *p=0.017). Rp was
53 calculated for 60-67 regions of interest (ROI) per condition from 3 independent experiments. **(h)**
54 Folimycin treatment significantly increases the colocalization of AP-2 with p150^{Glued} in cultured
55 cortico-hippocampal neurons (Rp: untreated (UT): 0.60 \pm 0.04 versus Rp Folimycin: 0.80 \pm 0.001,
56 **p=0.007). Rp was calculated for 60-67 regions of interest (ROI) per condition from 3
57 independent experiments (n=3).

58 Data in (g,h) are illustrated as box plots as described in Methods. All data reported are
59 mean \pm SEM.

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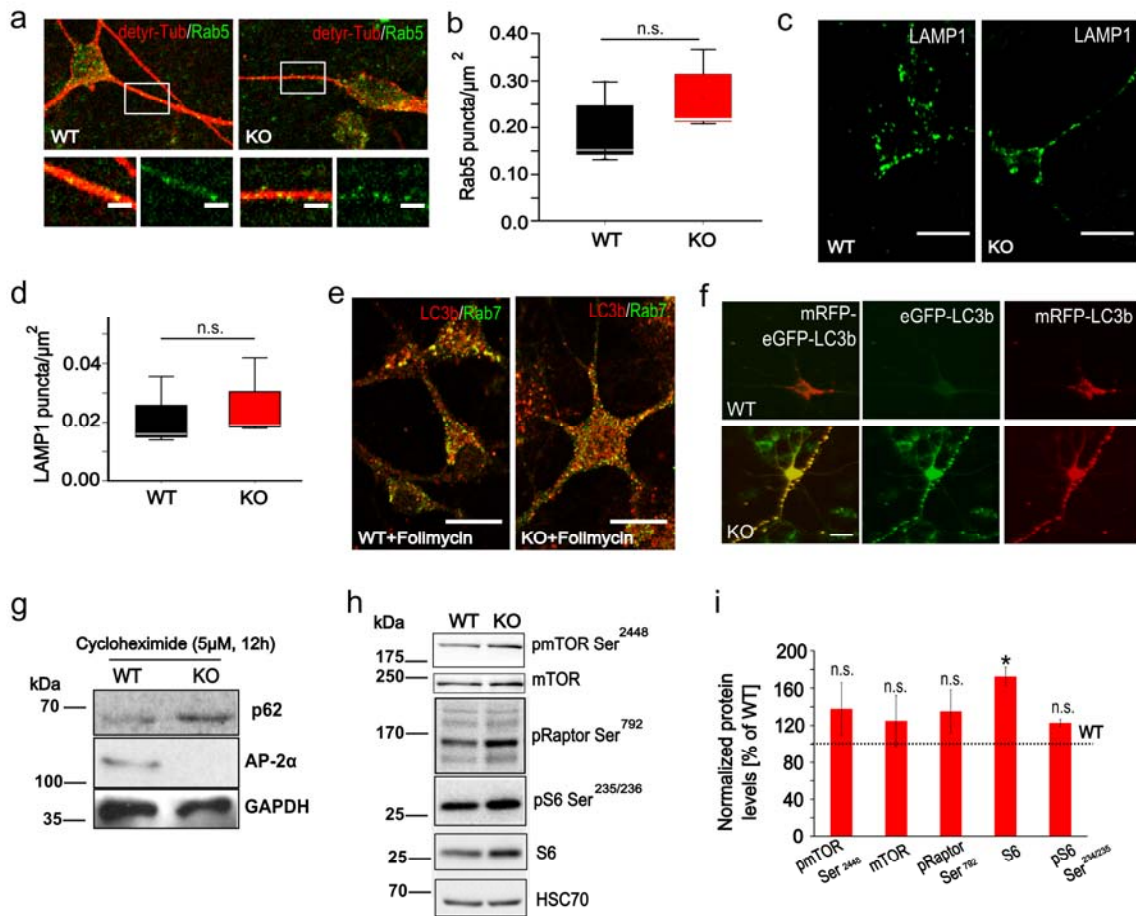


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62 **Supplementary Fig. 3. Impaired autophagosome processing in absence of AP-2μ is not a**
 63 **result of alterations in presynaptic and/or endocytic protein levels. (a,b) Loss of AP-2α in**

64 conditional AP-2 μ -KO neurons (WT: 173.74 \pm 15.19 g.v.; KO: 12.28 \pm 2.26 g.v., ***p<0.001,
65 n=3, 30-31 neurons per genotype). g.v., mean grey value of immunofluorescent signal. Scale bar,
66 20 μ m. **(c,d)** Levels of endocytic and presynaptic proteins in brain lysates from p21 WT and
67 neuron-specific AP-2 μ KO mice (AP-2 μ ^{lox/lox} x Tub α 1-Cre). Protein levels in KO condition were
68 normalized to the WT set to 100%. n=3, **(e)** Deletion of AP-2 μ significantly decreased the
69 percentage of retrogradely moving autophagosomes (WT: 20.35 \pm 3.18%, KO: 8.81 \pm 1.11%,
70 *p=0.01), whereas the number of anterograde carriers is unaltered (WT: 12.04 \pm 3.52%, KO:
71 8.90 \pm 2.75%, p=0.51, n=4 independent experiments). **(f)** The number of stationary
72 autophagosomes is increased in neurons lacking AP-2 μ (WT: 67.65 \pm 4.44%, KO: 82.45 \pm 3.61%,
73 *p=0.04, n=4 independent experiments). **(g)** Deletion of AP-2 μ significantly decreased the
74 retrograde autophagosome velocity (WT: 0.39 \pm 0.04 μ m/sec, KO: 0.27 \pm 0.02 μ m/sec, *p=0.048),
75 whereas their anterograde velocity is unaltered (WT: 0.38 \pm 0.06 μ m/sec, KO: 0.26 \pm 0.05
76 μ m/sec, p=0.17, n=4 independent experiments). **(h,i)** Representative images and corresponding
77 kymographs of axons, expressing Mito-mCherry in WT **(h)** and AP-2 KO **(i)** neurons. Scale bars,
78 5 μ m. **(j)** Bar diagram representing the relative axonal mobility of Mito-mCherry in WT and AP-
79 2 μ KO neurons (WT: 7.72 \pm 0.94%, KO: 8.59 \pm 1.38%, p=0.70, n=3 independent experiments). **(k)**
80 Bar diagram representing the anterograde and retrograde velocity of mitochondria in WT and
81 AP-2 μ KO neurons (Retrograde WT: 0.40 \pm 0.03 μ m/sec, Retrograde KO: 0.31 \pm 0.03 μ m/sec,
82 p=0.15; Anterograde WT: 0.36 \pm 0.02 μ m/sec, KO: 0.35 \pm 0.01 μ m/sec, p=0.64, n=3 independent
83 experiments). **(l,m)** Representative EM snapshots of somata of cultured WT **(l)** and AP-2 μ KO
84 **(m)** neurons. Black boxes in **(l)** mark the areas magnified in **(m)**. Scale bars, left panel, 1 μ m,
85 right panel, 500 nm. g, Golgi, n. nucleus, Lys, lysosome. **(n)** Mean number of lysosomes/ μ m²
86 within the soma of AP-2 μ KO neurons was unaltered (0.025 \pm 0.019) compared to control
87 neurons (0.028 \pm 0.015, p=0.84, 9 somata per condition). **(o)** Examples of multilamellar dense
88 structures in synapses of AP-2 μ KO neurons. Scale bars, 500nm.

89 Data in (b) are illustrated as box plots as described in Methods. Data in (d,e,f,g,j,k,n) and
90 all data reported in the text are mean±SEM. n.s., non-significant.
91



92

93 **Supplementary Fig. 4. Impaired autophagic flux in the absence of AP-2μ is not a result of**

94 **decreased mTORC1 signalling.** (a) Representative confocal images of WT and AP-2μ KO

95 neurons immunostained for Rab5 (green) and detyrosinated tubulin (detyr-Tub, red) to label

96 axonal processes. Scale bars, 5 μm. (b) The mean number of Rab5-positive puncta/ 1 μm² in AP-

97 2μ KO neurons was unaltered (0.26±0.05) compared to control neurons (0.19±0.05, p=0.4, data

98 are from n=3 independent experiments, 26-27 neurons per condition). (c) Representative

99 confocal images of WT and AP-2μ KO neurons immunostained for LAMP1 (green). Scale bars,

100 20 μm. (d) Mean number of LAMP1-positive puncta/ 1 μm² in AP-2μ KO neurons was unaltered

101 (0.026±0.007) compared to control neurons (0.022±0.007, p=0.667, n=3, 26-27 neurons per

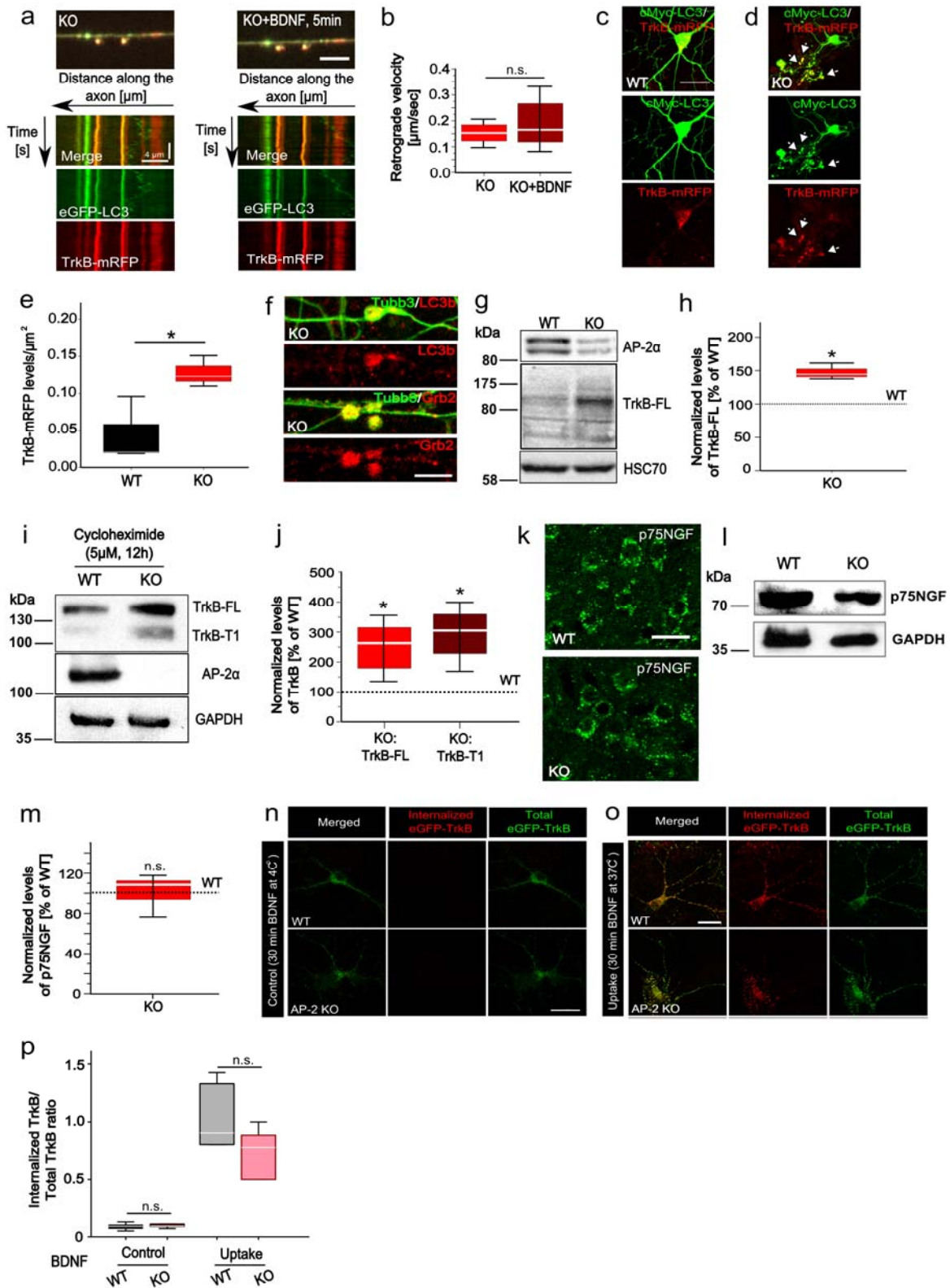
102 condition). (e) Representative confocal images of WT and AP-2μ KO neurons treated with

103 folimycin (20 nM, 4 h) and immunostained for endogenous LC3b (red) and Rab7 (green). Scale

104 bars, 20 μ m. **(f)** Representative epifluorescent images of neurons expressing mRFP-eGFP-LC3
105 under serum-deprived conditions. Scale bar, 20 μ m. **(g)** Immunoblot illustrating the levels of p62
106 in lysates from cultured WT and AP-2 μ KO neurons, treated with cycloheximide. **(h)**
107 Immunoblot illustrating the effect of AP-2 μ loss on mTORC1 signalling in brain lysates from
108 p21 neuron-specific AP-2 μ KO mice (AP-2 μ ^{lox/lox} x Tub α 1-Cre). **(i)** Quantification of data
109 shown in **(h)**. Protein levels of S6 kinase are slightly increased in AP-2 μ KO brain lysates (WT:
110 1.00 \pm 0.01, KO: 1.73 \pm 0.09, *p=0.015, n= 3 independent experiments). n.s., non-significant.
111 Protein levels in KO condition were normalized to the WT set to 100%.

112 Data in (b and d) are illustrated as box plots as described in Methods. Data illustrated in
113 **(i)** and all data reported in the text are mean \pm SEM.

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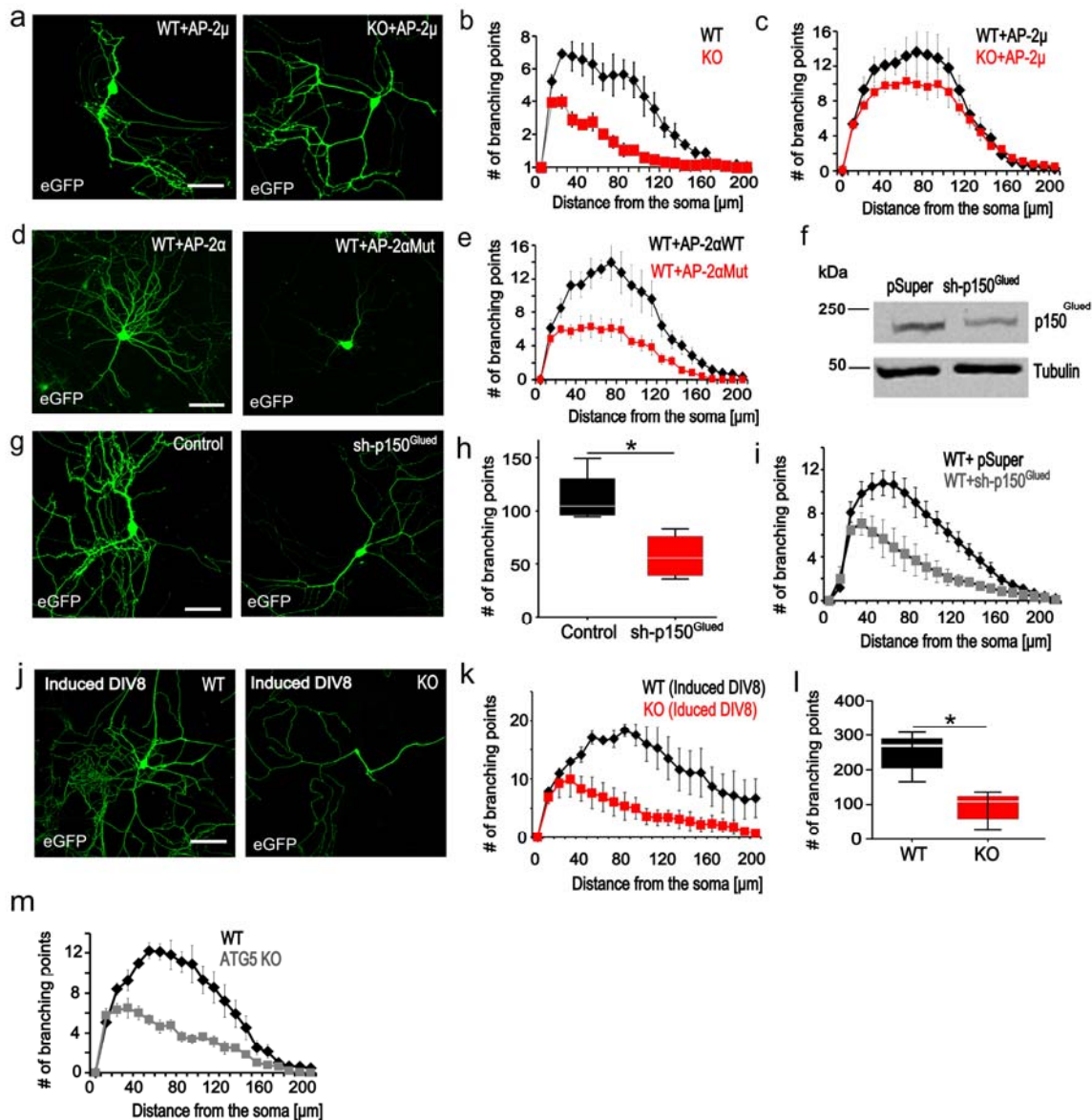
116 **Supplementary Fig. 5. Endocytosis-independent role for AP-2 μ in TrkB receptor**
 117 **trafficking. (a,b)** Retrograde velocity of eGFP-LC3/ TrkB-mRFP-positive carriers in AP-2 μ KO

118 neurons is unaltered upon BDNF application (KO: $0.15 \pm 0.03 \mu\text{m}/\text{s}$, KO+BDNF: 0.19 ± 0.07

119 $\mu\text{m/s}$; $*p=0.65$, $n=3$ independent experiments. **(c,d)** Representative confocal images of WT and
120 AP-2 μ KO neurons, expressing cMyc-LC3 (green) and mRFP-TrkB (red). Arrows indicate
121 mRFP-TrkB accumulations within LC3b-positive puncta. Scale bar, 20 μm . **(e)** Loss of AP-2 μ
122 leads to accumulation of mRFP-TrkB within LC3b-positive compartments (WT: 0.019 ± 0.025 ,
123 KO: 0.128 ± 0.012 , $*p=0.042$, $n=3$, 30 neurons per condition). mRFP-TrkB levels were calculated
124 per $1\ \mu\text{m}^2$ within LC3-positive area. **(f)** TrkB signalling component Grb2 (growth factor receptor-
125 bound protein 2) accumulates within autophagosome-like structures in AP-2 μ KO neurons.
126 Neurons were immunostained for Tubulin beta-3 (Tubb3) and either LC3b or Grb2. **(g,h)** TrkB
127 full length (TrkB-FL) expression levels are significantly upregulated in brain lysates from p21
128 neuron-specific AP-2 μ KO mice compared to controls. TrkB levels in KO were normalized to
129 the WT, set to 100% (KO: $148\pm 7\%$, $*p=0.021$, $n=3$ independent experiments). **(i,j)** Immunoblot
130 analysis of TrkB-FL and its truncated isoform (TrkB-T1) in lysates from cultured WT and AP-
131 2 μ KO neurons, treated with cycloheximide. TrkB levels in KO were normalized to the WT, set
132 to 100% (KO TrkB-FL: $248.1\pm 55.5\%$, $*p=0.046$, KO TrkB-T1: $293.9\pm 53.5\%$, $*p=0.021$, $n=3$
133 independent experiments). **(k)** Unaltered levels of p75NGF receptor in AP-2 μ KO brains,
134 visualized by immunohistochemistry with p75NGF-specific antibodies. Scale bar, 30 μm . **(l, m)**
135 Immunoblot analysis of p75NGF receptor expression levels in lysates from cultured WT and AP-
136 2 KO neurons. p75NGF levels in KO were normalized to the WT, set to 100% (KO: $103\pm 8.07\%$,
137 $*p=0.38$, $n=4$ independent experiments). **(n,o)** Representative confocal images of eGFP-TrkB-
138 expressing WT and AP-2 μ KO neurons treated with 50 ng/ml BDNF and incubated with GFP
139 antibody at 4 C° (control, **n**) or 37 C° to allow endocytosis (uptake, **o**). Scale bars, 50 μm . **(p)**
140 BDNF-induced endocytosis of TrkB is independent of AP-2 μ . Control (4C°) WT versus KO,
141 $p=0.668$; Uptake (37°C) WT versus KO, $p=0.098$, $n=5$ independent experiments.

142 Data in (b,e,h,j,m) and (p) are illustrated as box plots as described in Methods. All data
143 reported in the text are mean \pm SEM.

144



145

146 **Supplementary Fig. 6. Autophagosomal trafficking via AP-2 mediates neuronal complexity.**

147 (a) eGFP-expressing WT and AP-2 μ KO neurons transfected with AP-2 μ . Scale bar, 40 μ m. (b)

148 Sholl analysis of cultured WT and AP-2 μ KO neurons reveals the decrease in neuronal

149 complexity upon loss of AP-2 μ . (c) Sholl analysis of cultured WT and AP-2 μ KO neurons

150 reveals the rescue of neuronal complexity in AP-2 μ KO neurons upon AP-2 μ re-expression. (d)

151 Control neurons transfected with eGFP and co-transfected with HA-tagged WT AP-2 α _A (HA-

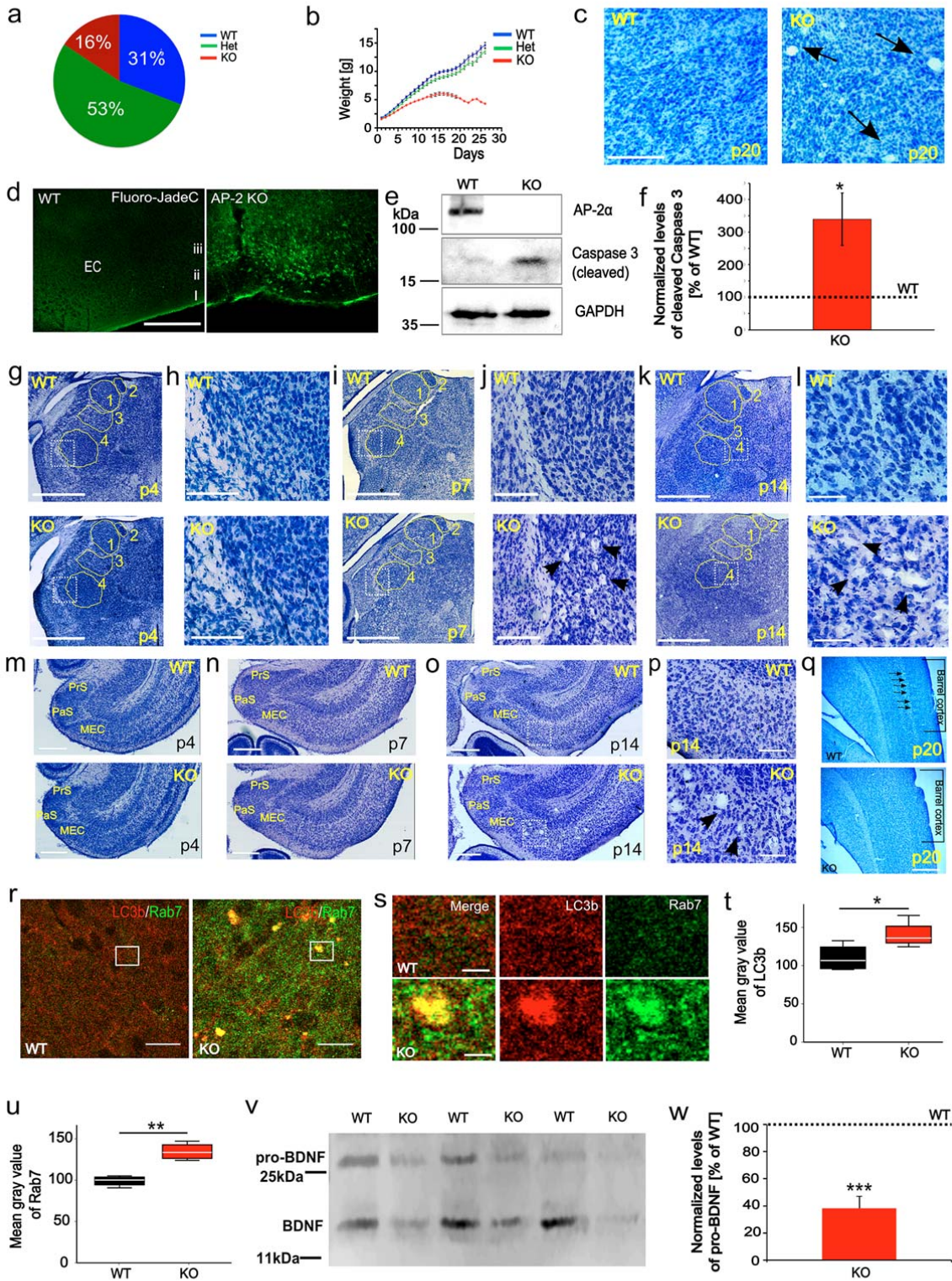
152 AP-2 α _AWT) or LC3-binding deficient mutant AP-2 α _A (HA-AP-2 α _AMut). Scale bar, 40 μ m. (e)

153 Sholl analysis of neurons, expressing wildtype AP-2 α _A (AP-2 α _AWT, black) or LC3-binding

154 deficient mutant AP-2 α_A (AP-2 α_A Mut, red). **(f)** p150^{Glued} levels in cultured rat neurons,
155 nucleofected on DIV0 with either pSuper control or pSuper encoding shRNA against p150^{Glued}
156 and analyzed 48 h posttransfection by immunoblotting. **(g)** eGFP-expressing rat neurons
157 transfected on DIV7 with either pSuper control (WT+pSuper) or with shRNA against p150^{Glued}
158 (WT+ shRNA p150^{Glued}). Scale bar, 40 μ m. **(h)** Mean number of branching points is severely
159 decreased in WT rat neurons expressing p150^{Glued} shRNA (22.05 \pm 11.03) compared to control
160 (113.29 \pm 12.52, *p=0.015, 79-93 neurons per condition, n=4 experiments). **(i)** Sholl analysis of
161 cultured rat neurons 72h posttransfection with either pSuper control (black) or pSuper encoding
162 shRNA against p150^{Glued}(gray). **(j-l)** AP-2 μ deletion induced by application of tamoxifen at
163 DIV8 impairs the neuronal complexity of mature DIV20 neurons. **(j)** eGFP-expressing WT and
164 AP-2 μ KO neurons at DIV20. Scale bar, 40 μ m. **(k)** Sholl analysis of cultured WT and AP-2 μ
165 KO neurons reveals a decrease in neuronal complexity upon induction of AP-2 μ deletion at
166 DIV8. **(l)** Decreased branching complexity in neurons treated by tamoxifen at DIV8
167 (91.33 \pm 32.37), but not in ethanol-treated controls (246.90 \pm 45.54, *p=0.043, 28-29 neurons per
168 condition from 3 independent experiments). **(m)** Sholl analysis of cultured neurons from
169 ATG5^{lox/lox}:CAG-iCre mice, treated either with ethanol (WT) or tamoxifen (ATG5 KO).

170 Sholl analysis was performed by counting the number of intersections with concentric
171 rings radiating every 10 μ m from the soma center. Data in (h,l) are illustrated as box plots as
172 described in Materials and Methods. Data in (b,c,e,i,k,m) and all data reported in the text are
173 mean \pm SEM.

174



177 **Supplementary Fig. 7. Neurodegeneration in mice lacking neuronal AP-2 μ .** (a) Percentage
178 of genotypes in litters from AP-2^{lox/lox}:Tub α 1-Cre crosses (AP-2^{lox/lox}:Tub α 1-Cre (KO): 16%;
179 AP-2^{lox/lox}:Tub α 1-Cre (WT): 31% and AP-2^{lox/wt}:Tub α 1-Cre (Het): 53%; $p < 0.0011$). (b) Growth
180 curves of AP-2 μ KO mice and their littermate controls (KO: $n = 14$, WT and Het: $n = 21$ animals).
181 (c) Loss of neuronal AP-2 μ causes thalamic microvacuolation (indicated by arrows). Scale bar,
182 250 μ m. (d) Severe neurodegeneration of AP-2 μ KO brains, detected by Fluoro-Jade staining.
183 Scale bar, 400 μ m. (e,f) Immunoblot analysis representing the activation of caspase 3 in lysates
184 from cultured DIV14-17 WT and AP-2 μ KO neurons. Activated caspase 3 levels in KO were
185 normalized to the WT, set to 100% (KO: $339.7 \pm 80\%$, $*p = 0.014$, $n = 5$ independent experiments).
186 (g-l) Temporal progression of thalamic neurodegeneration in AP-2 μ KO mice, captured by
187 Nissl-staining of brains at p4 (g,h), p7 (i,j) and p14 (k,l). White rectangles in (g) (i) and (k) mark
188 the areas magnified in (h), (j) and (l), accordingly. Black arrows in (l) mark the spongiform
189 neurodegeneration. Numbers indicate thalamic nuclei: 1, anteroventral, 2, anterodorsal, 3,
190 ventrolateral, 4, posterior. (m-p) Temporal progression of medial entorhinal cortex (MEC)
191 degeneration in AP-2 μ KO mice, captured by Nissl-staining of brains at p4 (m), p7 (n) and p14
192 (o,p). Black arrows in (p) mark the spongiform neurodegeneration. Scale bars, (g,i) 1000 μ m, (h,
193 j) 150 μ m, (k) 800 μ m, (l) 100 μ m, (m,n) 300 μ m, (o) 400 μ m, (p) 80 μ m. (q) Loss of barrel
194 compartments in the somatosensory cortex of AP-2 μ KO mice, revealed by Nissl-staining. Scale
195 bar, 200 μ m. (r) WT and AP-2 μ KO brain sections, immunostained for LC3b and Rab7. White
196 boxes indicate areas magnified in (s). Scale bars: (r) 20 μ m, (s) 5 μ m. (t, u) Mean intensity of
197 LC3b (WT: 110.1 ± 8.7 , KO: 140.5 ± 8.8 , $*p = 0.049$, $n = 4$) (u) and Rab7 (WT: 99.1 ± 3.1 , KO:
198 134.5 ± 5.2 , $**p = 0.001$, $n = 4$) (u) in AP-2 μ deficient brains. (v,w) pro-BDNF levels in WT or AP-
199 2 μ KO brain lysates visualized by immunoblotting on the membrane presented in Fig. 7b. Pro-
200 BDNF levels in WT brains were set to 100% ($n = 3$ mice per genotype, $*p < 0.000$).

201 Data in (t,u) are illustrated as box plots. Data in (a,b,f,w) and all data reported in the text
202 are mean \pm SEM.

Fig. 2a

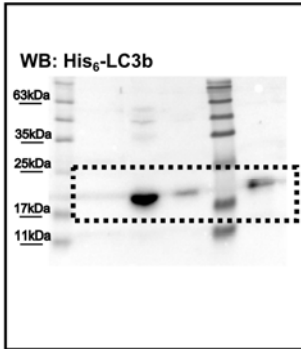


Fig. 2b

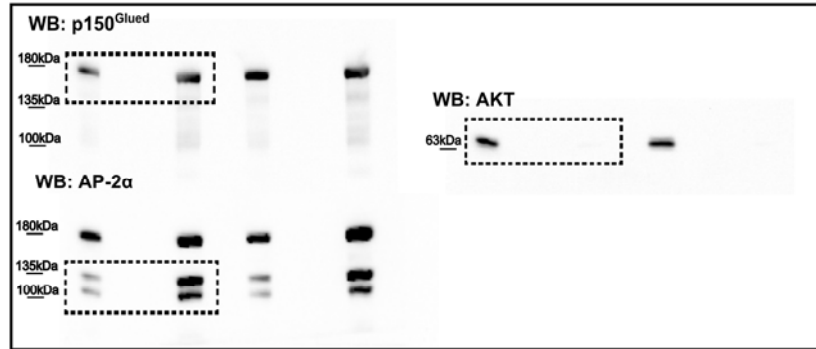


Fig. 2c

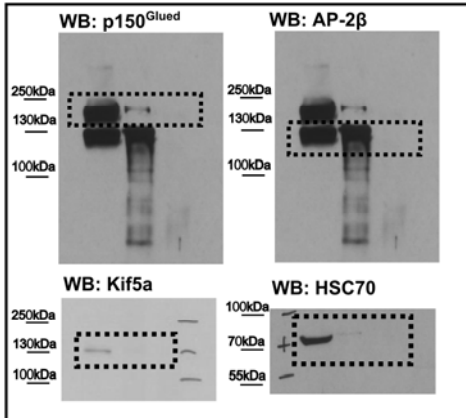


Fig. 2d

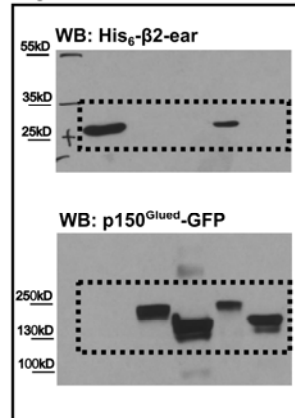


Fig. 2e

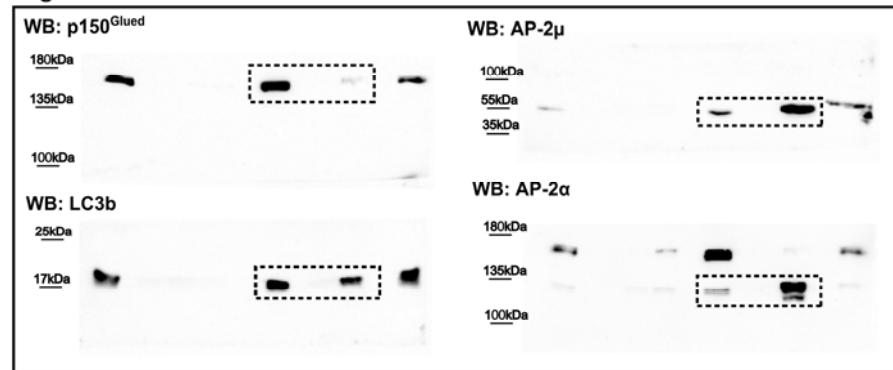


Fig. 7b, Fig. S7v

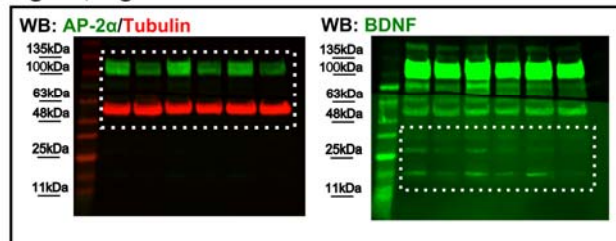
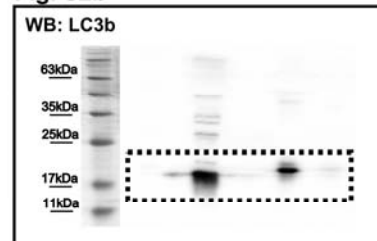


Fig. S2b



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Fig. S3c

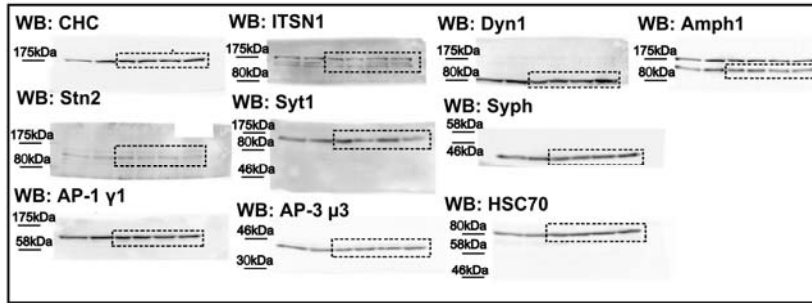


Fig. S4g

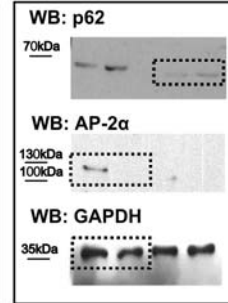


Fig. S4h

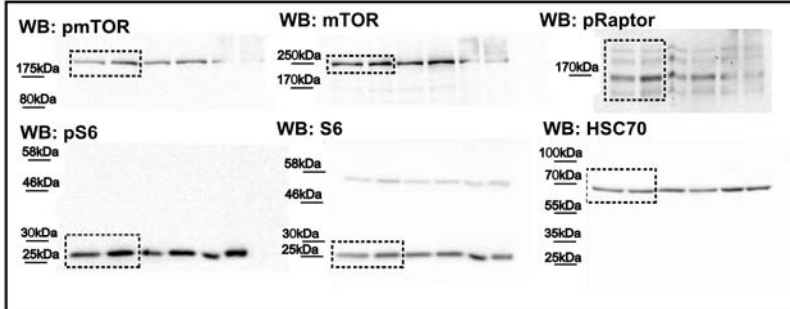


Fig. S5g

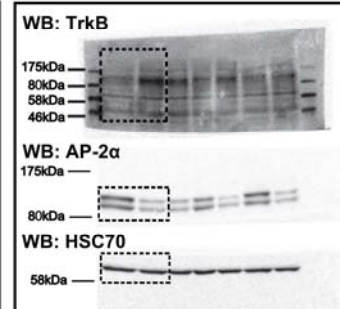


Fig. S5i

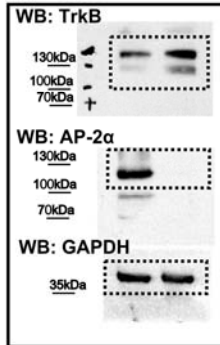


Fig. S5l

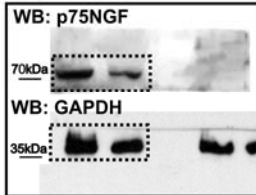


Fig. S6f

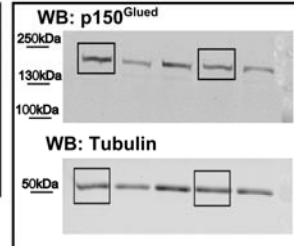
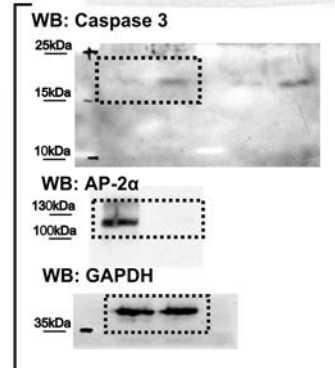


Fig. S7e



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208 **Supplementary Fig. 8. Full-size blots corresponding to cropped images presented in the**

209 **manuscript.**

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