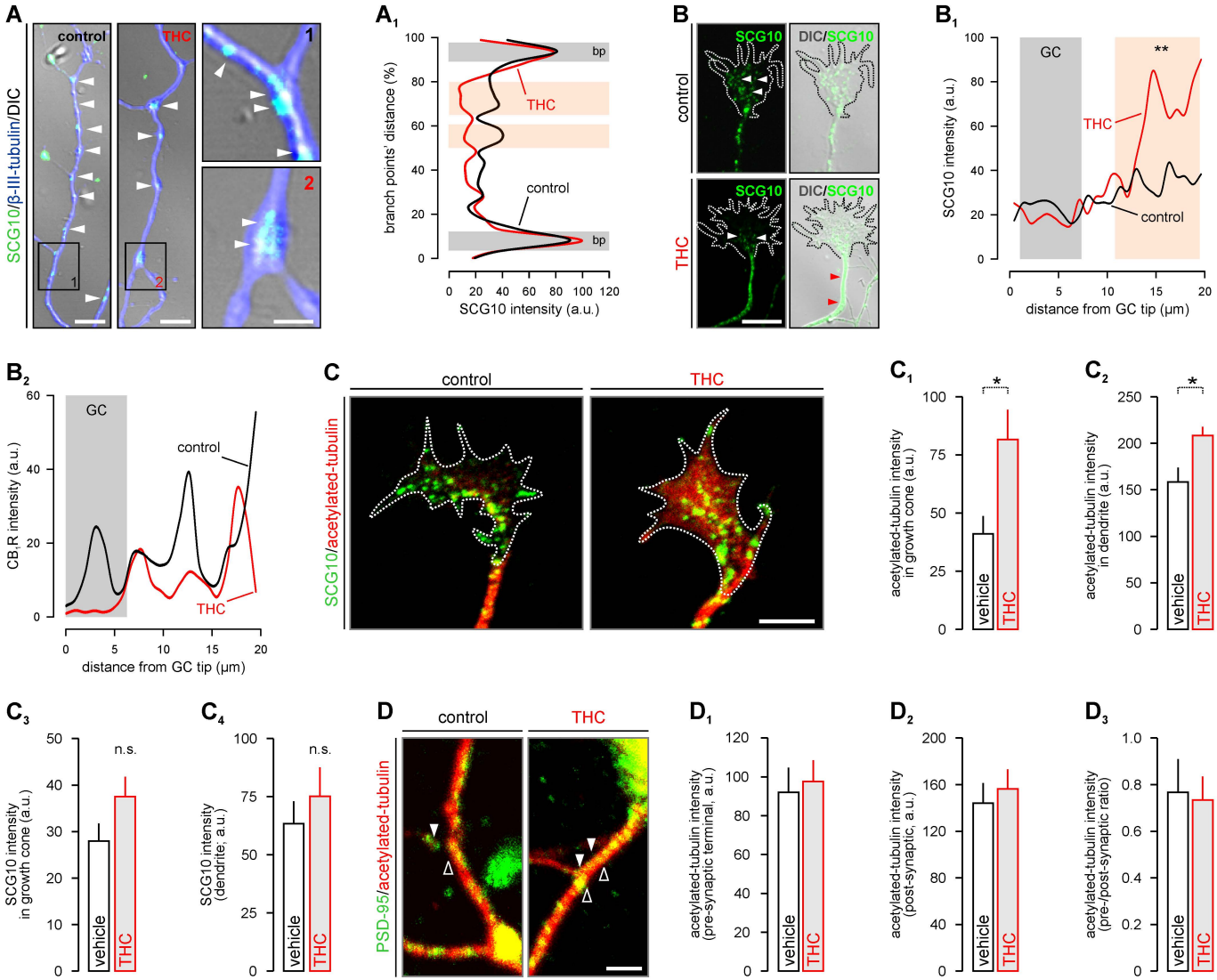
A
control
THC
SCG10/β-III-tubulin/DIC
1
2
A1
branch points' distance (%)
bp
THC
control
SCG10 intensity (a.u.)
B
SCG10
DIC/SCG10
control
THC
B1
GC
**
SCG10 intensity (a.u.)
distance from GC tip (μm)
B2
CB1R intensity (a.u.)
C
SCG10/acetylated-tubulin
C1
acetylated-tubulin intensity in growth cone (a.u.)
C2
acetylated-tubulin intensity in dendrite (a.u.)
vehicle
C3
SCG10 intensity in growth cone (a.u.)
n.s.
C4
SCG10 intensity (dendrite, a.u.)
D
PSD-95/acetylated-tubulin
D1
acetylated-tubulin intensity (pre-synaptic terminal, a.u.)
D2
acetylated-tubulin intensity (post-synaptic, a.u.)
D3
acetylated-tubulin intensity (pre-/post-synaptic ratio)

(2 columns)

Fig. S6 **Prolonged THC treatment *in vitro* induces SCG10 redistribution in cortical neurons.** (**A**) THC treatment for 24h led to a preferential loss of SCG10 (*arrowheads*) from the neurite shaft, confining it to branching points (*open rectangles*) shown in insets "1" and "2" at high-resolution. (**A_1**) Quantitative fluorescence profiling of SCG10 in neurites after THC exposure for 24h (n >20/condition; *bp*: branching point). Orange shading identifies regions of significant difference ($p < 0.01$). (**B**) SCG10 localization to growth cones and adjoining neurite stems after THC (2 μM) exposure for 24h. White and red arrowheads point to the sites of SCG10 accumulation in growth cones and neurite shafts, respectively. (**B_1**) Quantitative subcellular immunofluorescence profiling revealed that THC excludes SCG10 from the central domain of growth cones (GC, *boxed area in grey*), with preferential accumulation restricted to the distal neurite stem (*boxed area in orange*). (**B_2**) CB_1R immunofluorescence distribution in neurites of cultured cortical neurons. Note that THC tended to decrease, albeit non-significantly, CB_1R levels. For clarity, mean intensity curves from n = 10 - 22 neurites/condition are shown in B_1 and B_2. $p < 0.05$ boxed area in grey, $p < 0.01$ (area in orange). (C) Spatial relationship of SCG10 localization with tubulin acetylation in growth cones of short secondary processes, prospective dendrites, and their growth cones. THC induced significant tubulin acetylation in both the growth cone (**C_1**) and the "dendrite/secondary neurite" shaft (**C_2**). In contrast, SCG10 levels remained largely unchanged (n.s., non-significant) in the processes also sampled for acetylated-tubulin content. This suggests CB_1R/SCG10-independent cytoskeletal reorganization, particularly since only the axon contains cell-surface CB_1Rs in neurons (McDonald *et al*, 2007). (**D**) Next, we sampled acetylated tubulin content in PSD95-immunoreactive dendrite domains, putative excitatory postsynaptic sites (Roloff *et al*, 2010), and apposing pre-synaptic terminals (acetylated-tubulin$^+$/PSD95$^-$). These data showed unchanged acetylated-tubulin content in the pre-synaptic terminal (**D_1**) and corresponding PSD95$^+$ post-synaptic element (**D_2**). Moreover, the ratio of pre-/post-synaptic acetylated-tubulin levels remained unaffected (**D_3**). Data were expressed as means ± s.e.m., n > 20 samples/group were processed in panels C_1-D_3. *$p < 0.05$ (C_1,C_2). *Scale bars* = 10 μm (control and THC in A), 4 μm (inset "2"), 5 μm (B,C and D).

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