



Supplementary Figure 1: The Alex-647 Bgtx (fBgtx) signal is in the presence of the selective $\alpha 7$ agonist PNU282987. Hippocampal neurons were treated with PNU (1 and 10 μM) for 1 min prior to fixation and labeling with fBgtx. Scale bar: 10 μM .

Protein Identity	Peptide Sequence	Protein Score	MW	Accession	Ion Number
<u>α7 IP</u>					
α 7	RYHHHDPDGGKMPKW	8.08	56373.4	71896614	5
Gprin1	KDLAAVAAQKSPSAEGAAPPPGPRTRD	20.09	85066.5	62663260	3
<u>Gprin1 IP</u>					
α 7	KEPYPDVTYTVTMRRRT	12.06	56373.4	71896614	4
Gprin1	KTALVSPGKVDLTASERA	22.03	85066.5	62663260	7

SUPPLEMENTARY TABLE 1. Confirmation of protein bands in using mass spectrometry. Shown for each protein is the sequence of the most abundant peptide, protein score, predicted molecular weight (MW), accession number in NCBI, and total number of detected ions. Proteins were obtained from a coomassie stained SDS-PAGE gel using in-gel digestion. The samples were analyzed using liquid chromatography electro spray ionization (LC-ESI) mass spectrometry (MS) as described in (Kaiser et al., 2008) and (Nordman and Kabbani, 2012). These MS results validate α 7 nAChR and Gprin1 protein identities within the IP experiment.

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Gprin1	KESSASQGKAETVPSGEVGGSTTLGKTASTSSGKT	22.03	85066.5	62663260	6

SUPPLEMENTARY TABLE 2. Confirmation of protein bands using mass spectrometry. Shown for each protein is the sequence of the most abundant peptide, protein score, predicted molecular weight (MW), accession number in NCBI, and total number of detected ions. Proteins were obtained from a coomassie stained SDS-PAGE gel using in-gel digestion. The samples were analyzed using liquid chromatography electro spray ionization (LC-ESI) mass spectrometry (MS) as described in (Kaiser et al., 2008) and (Nordman and Kabbani, 2012). These MS results validate $\alpha 7$ nAChR and Gprin1 protein identities within the IP experiment from the GC and CF

Control cells	SA	Branch	GC#/Cell	Filopodia#/Cell
SA	1.00	0.83	0.82	0.74
Branch	0.83	1.00	0.65	0.66
GC #/Cell	0.82	0.65	1.00	0.67
Filopodia #/Cell	0.74	0.66	0.67	1.00
PNU treated				
SA	1.00	0.71	0.57	0.80
Branch	0.71	1.00	0.47	0.56
GC#/Cell	0.57	0.47	1.00	0.66
Filopodia#/Cell	0.80	0.56	0.66	1.00
PNU + Bgtx treated				
SA	1.00	0.77	0.66	0.74
Branch	0.77	1.00	0.64	0.60
GC#/Cell	0.66	0.64	1.00	0.46
Filopodia#/Cell	0.74	0.60	0.46	1.00

SUPPLEMENTARY TABLE 3. Pearson's r-values confirming the effect of drug treatment on various parameters of axon growth as presented in Fig. 3 of the manuscript. Values are based on PNU treatment at 10 μ M and Bgtx treatment at 50 nM. Control cells were treated with 0.1% DMSO (the vehicle). Low r-values are indicated in red.