

Supporting Information

Tenascin-C Derived Signaling Induces Neuronal Differentiation in Three-Dimensional Peptide Nanofiber Gel

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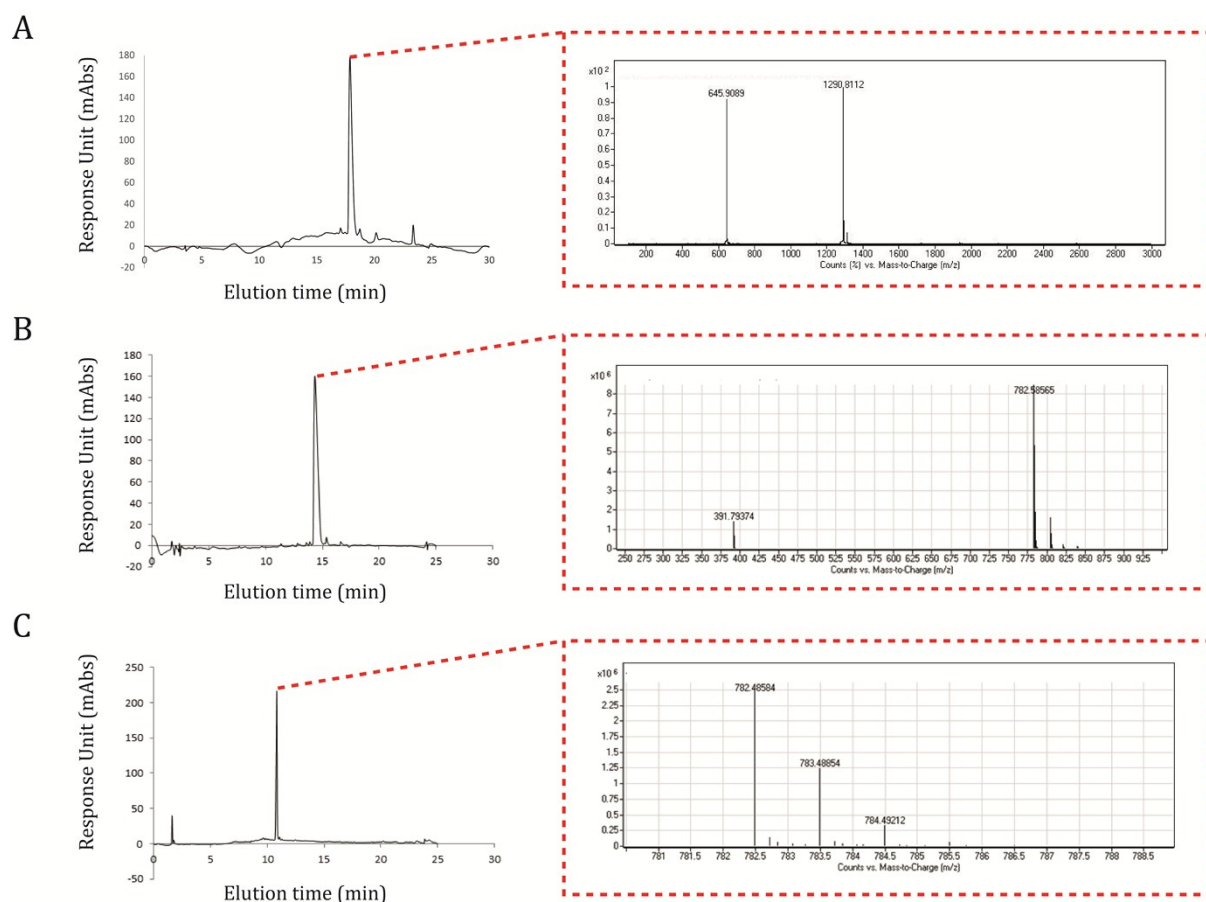


Figure S1 Liquid chromatography and mass spectrometry of TN-PA (A), KK-PA (B) and EE-PA (C). Mass spectrometry of TN-PA (a) $[M+H]^+$ (calculated): 1290.81, $[M+H]^+$ (observed): 1290.81, $[M+2H]^{+2/2}$ (calculated): 645.91, $[M+2H]^{+2/2}$ (observed): 645.91. Mass spectrometry of KK-PA; $[M+H]^+$ (calculated): 782.58, $[M+H]^+$ (observed): 782.59, $[M+2H]^{+2/2}$ (calculated): 391.79, $[M+2H]^{+2/2}$ (observed): 391.79. Mass spectrometry of EE-PA; $[M-H]^-$ (calculated): 782.47, $[M-H]^-$ (observed): 782.48.

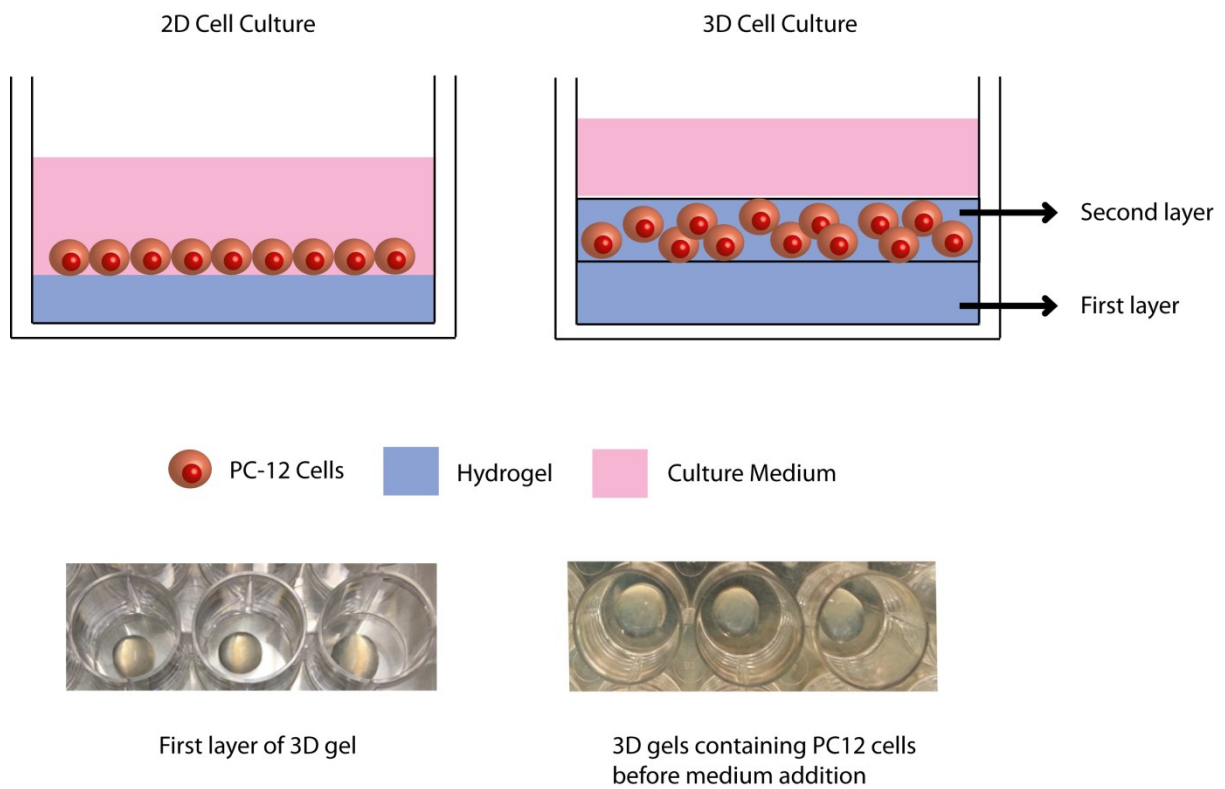


Figure S2 *In vitro* experimental design.

Table S1 Experimental Groups

3D		2D	
+NGF	-NGF	+NGF	-NGF
PA-TN/PA-EE (12 mM/6 mM)	PA-TN/PA-EE (12 mM/6 mM)	PA-TN/PA-EE (4 mM/2 mM)	PA-TN/PA-EE (4 mM/2 mM)
PA-KK/PA-EE (10 mM/10 mM)	PA-KK/PA-EE (10 mM/10 mM)	PA-KK/PA-EE (3 mM/3 mM)	PA-KK/PA-EE (3 mM/3 mM)

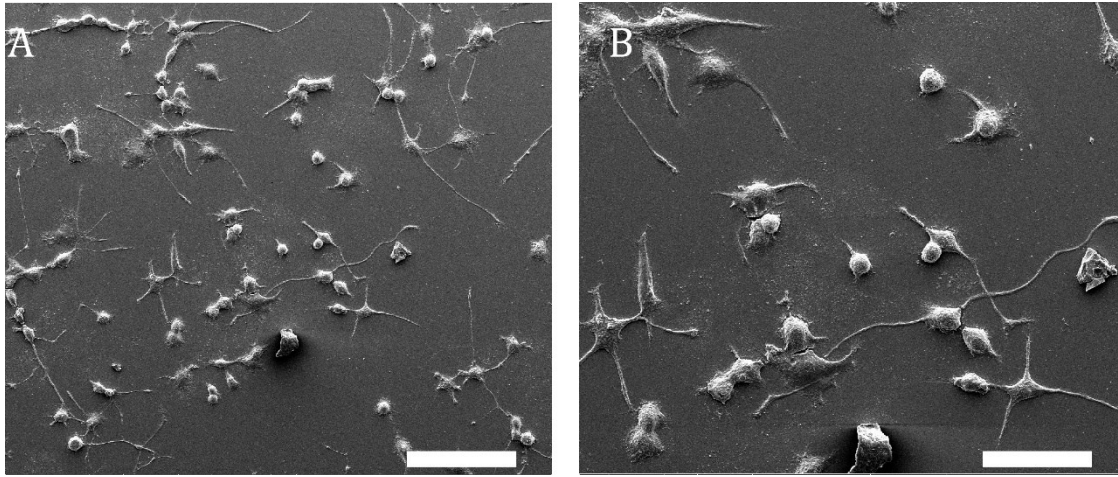


Figure S3. SEM images of PC12 cells on 2D poly-D-lysine coated surfaces in the presence of NGF on day 7 (Scale bars: 100 µm (A) and 50 µm (B)).

Table S2 Primers Used for qRT-PCR Expression Analysis

Gene	Forward Primer	Reverse Primer	Product Size (bp)
GAPDH	GTGCCAGCCTCGTTCATA	AACTTGCCGTGGGTAGAGTC	186
β-III Tubulin	CCTGCCTCTTCGTCTCTAGC	AACTTGGCCCCTATCTGGTT	222
SYN1	CCAGCTCAACAAATCCCAGT	TGGTCTCAGCTTTCACCTCA	307

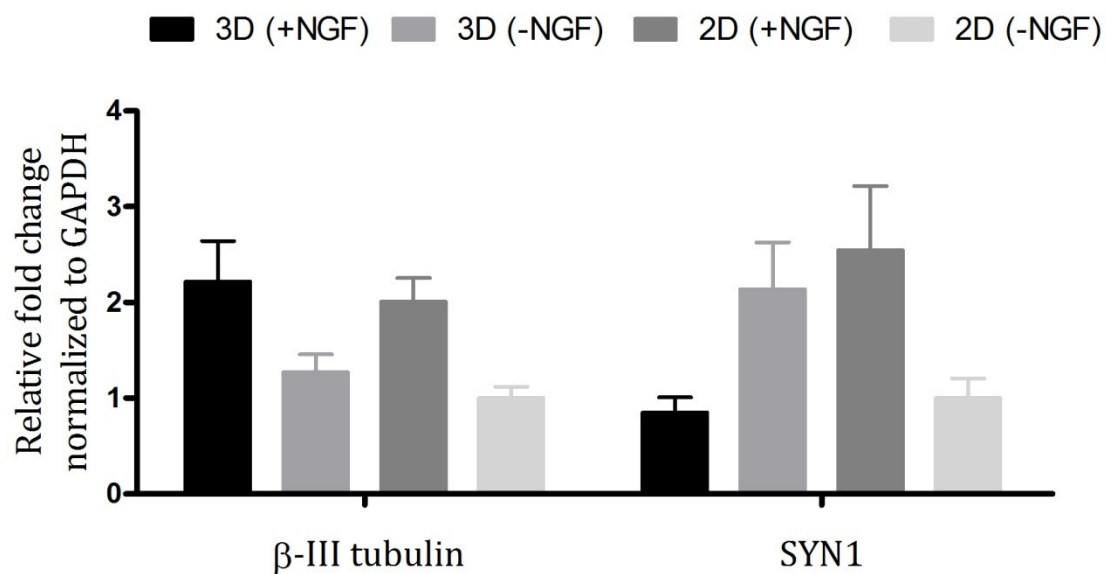


Figure S4 Gene expression analyses of β -III tubulin and Synaptophysin I (SYN1) on day 3 on 2D TN-PA/EE-PA nanofibers and in 3D TN-PA/EE-PA hydrogels with and without the addition of NGF. Expression level of each gene was normalized to GAPDH. Values represent mean \pm sem.

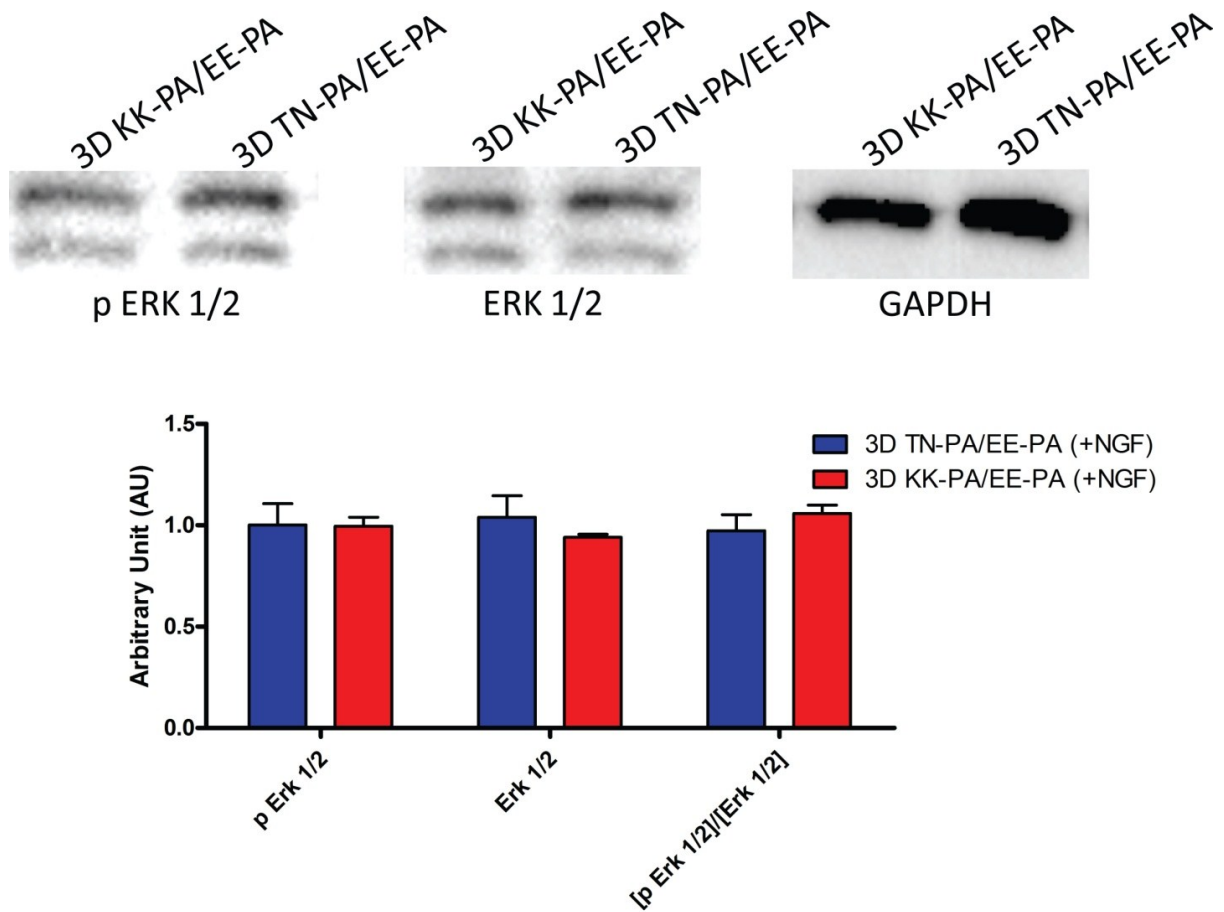


Figure S5 Western blot analysis of ERK phosphorylation (p ERK) and total ERK expression. Values represent mean \pm sem.