Supplementary Material

Supplementary Figures

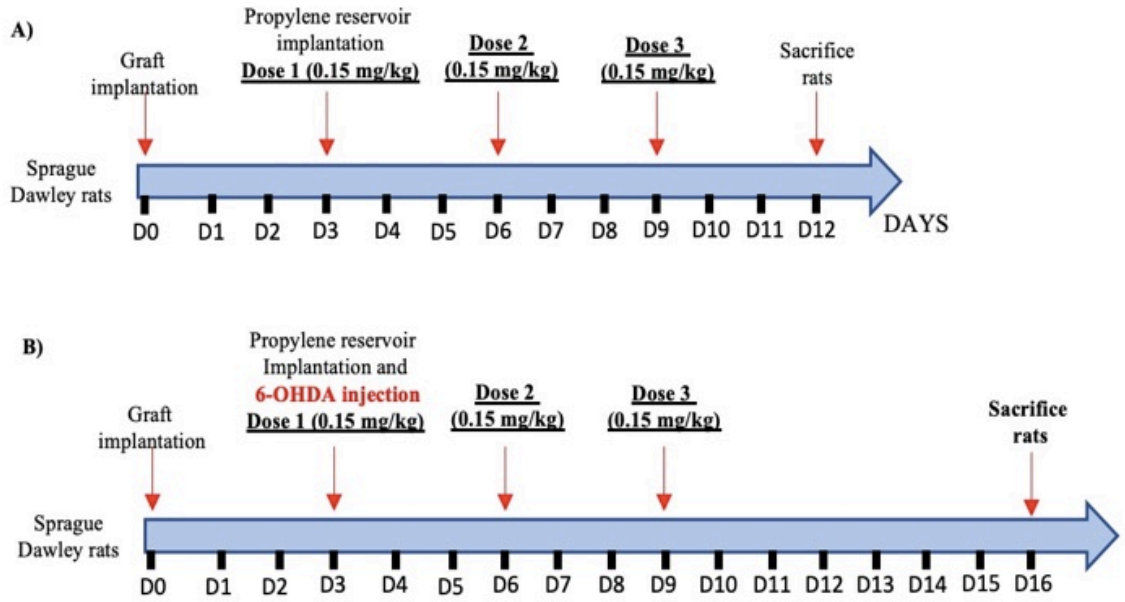


Fig S1: In vivo experimental timeline for A) Trans-nasal mucosal rat graft model and B) rat 6-hydroxydopamine (6-OHDA) heterotopic mucosal graft model of Parkinson's disease. Rats were dosed with 0.15 mg/kg of either BDNF AT saline or liposomal formulations.

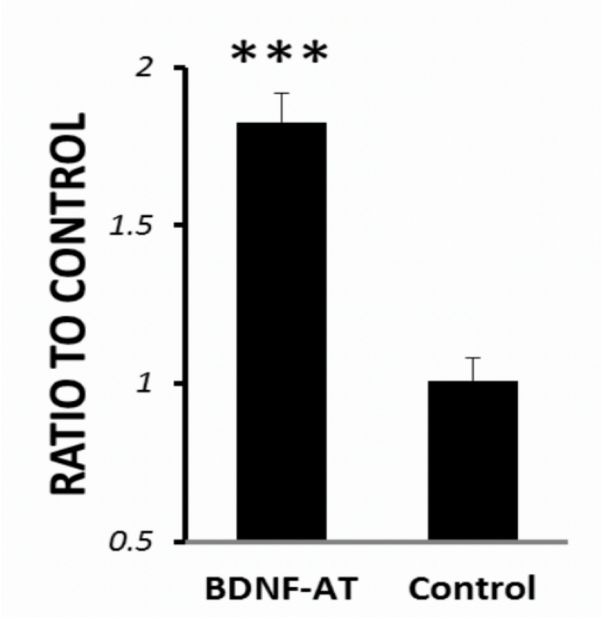
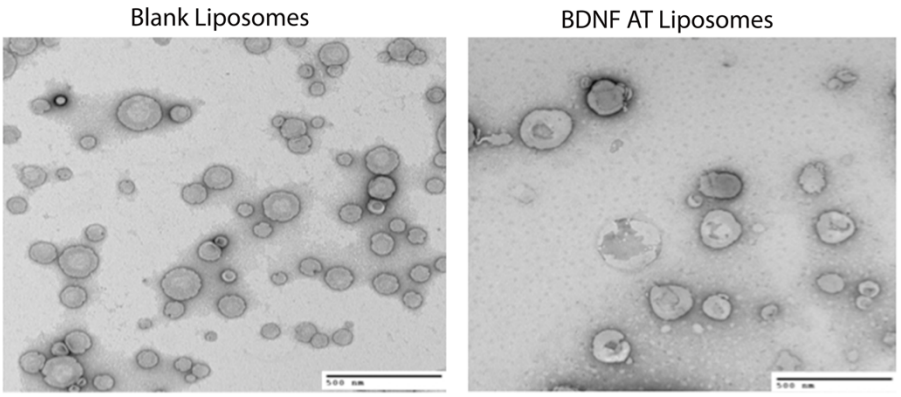
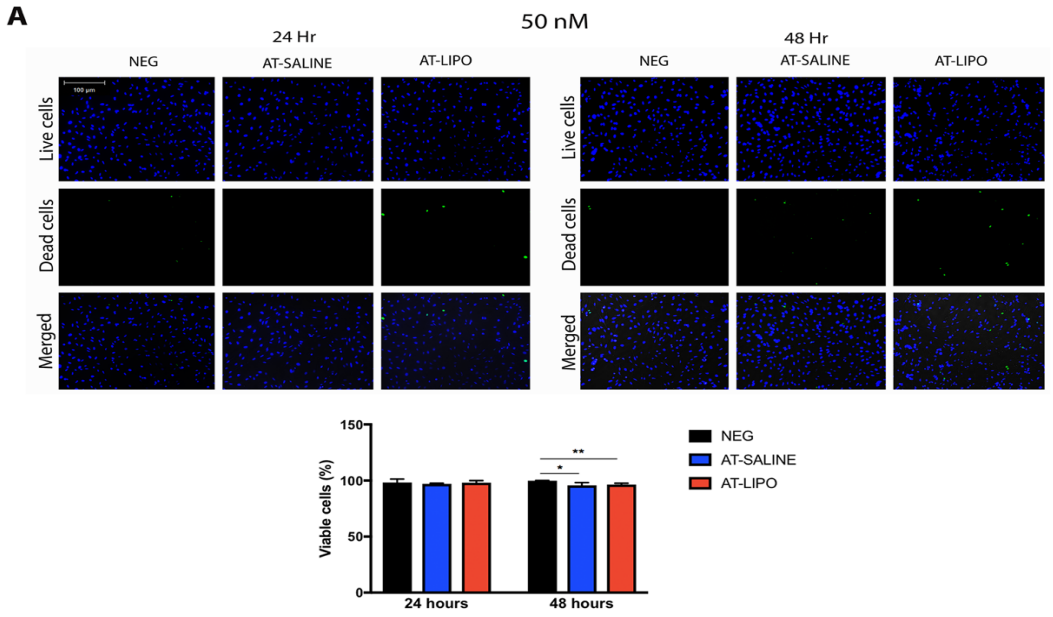


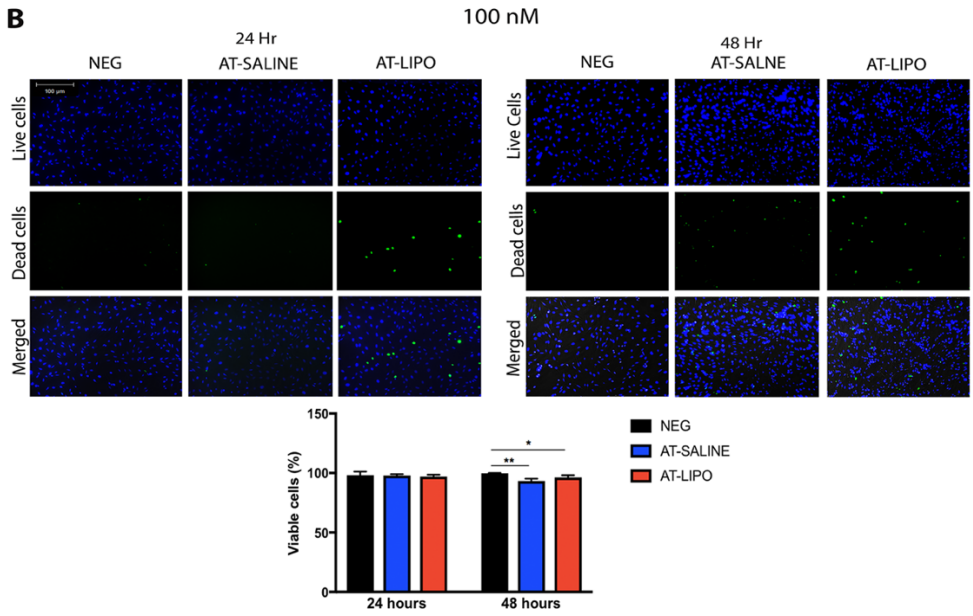
Fig S2: Upregulation of BDNF in rat schwannoma cell line RT4-D6P2T after treatment with 20 nM of BDNF-AT compared to inactive control oligonucleotide (real time PCR data, n=6, *** - t-test $p<0.001$).



Sample	Average size (nm)	Average Polydispersity index	Average charge (mV)	% Encapsulation efficiency
Blank cationic Liposomes	206.5	0.208	33.4	NA
BDNF AT cationic liposomes	229.44 ± 17.6	0.235 ± 0.04	37.28 ± 3.3	~100%

Fig S3: TEM (uranyl acetate) images and characterization data (average size, PDI and charge) for the blank (no BDNF AT) (n=3) and BDNF-AT Liposomes (n=3).





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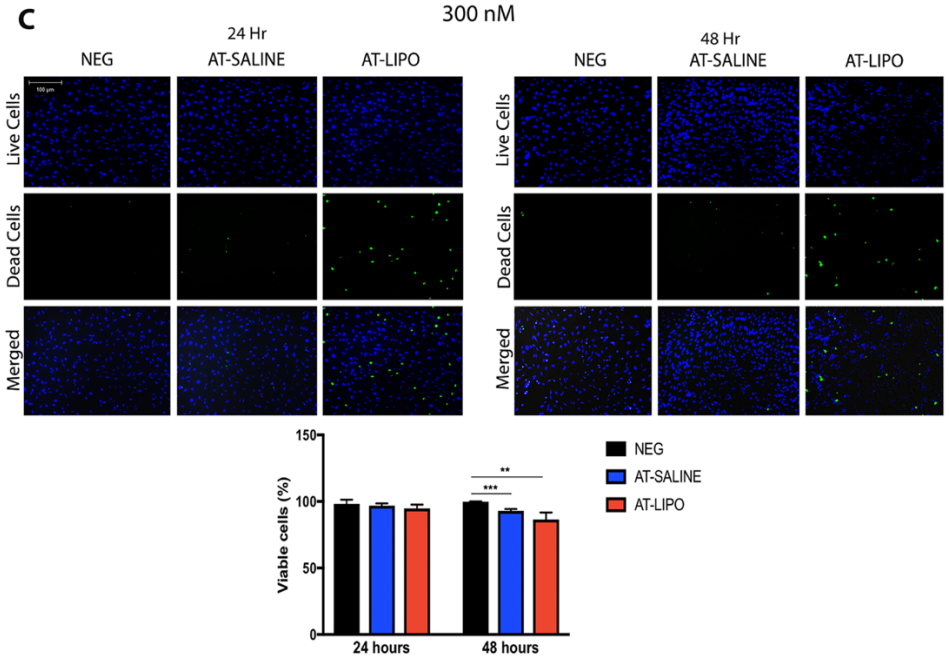

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18 **Fig S4**: A-C. Live/dead assay in RT4-D6P2T rat schwannoma cells after exposure to 50-300nM of
19 vehicle control (NEG), liposome encapsulated BDNF-AT (AT-LIPO), and BDNF-AT in saline (AT-
20 SALINE) for 24-48 hours demonstrating greater than 80% viability at the doses and time-points
21 studied. (Data presented as mean ± SD, Student's t-test).
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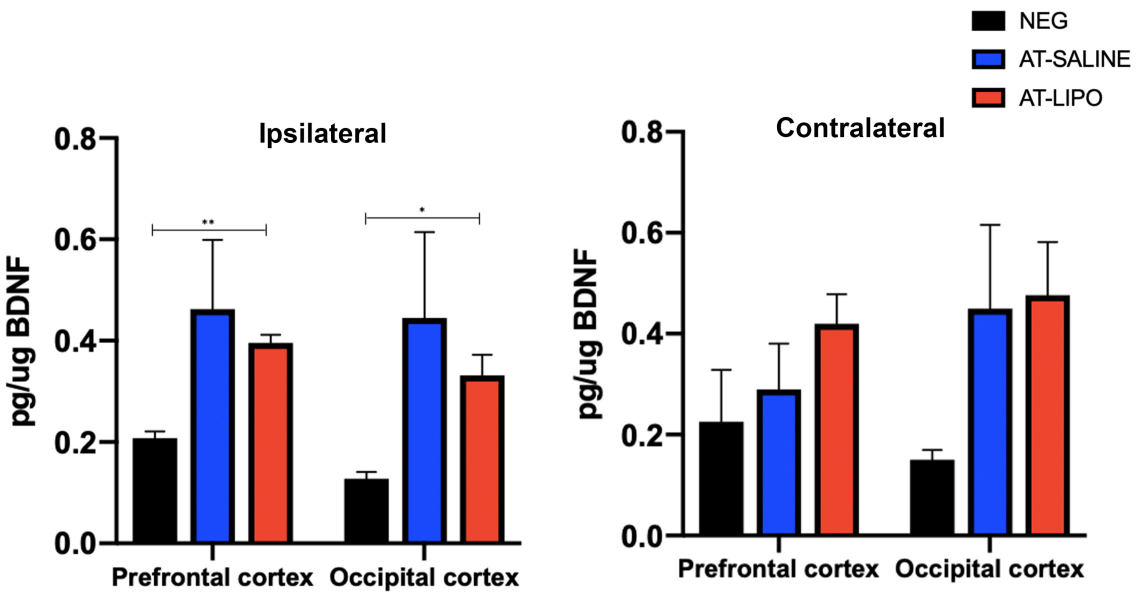

Fig S5. Bar graphs quantifying BDNF protein upregulation in ipsilateral and contralateral cortical regions of rat brain among the liposomal (AT-LIPO, n=4) and saline (AT-SALINE, n=4) groups as compared to negative control (NEG, * $p<0.05$, ** $p<0.01$; two-tailed unpaired Student's t-test). Data are presented as mean ± SD.