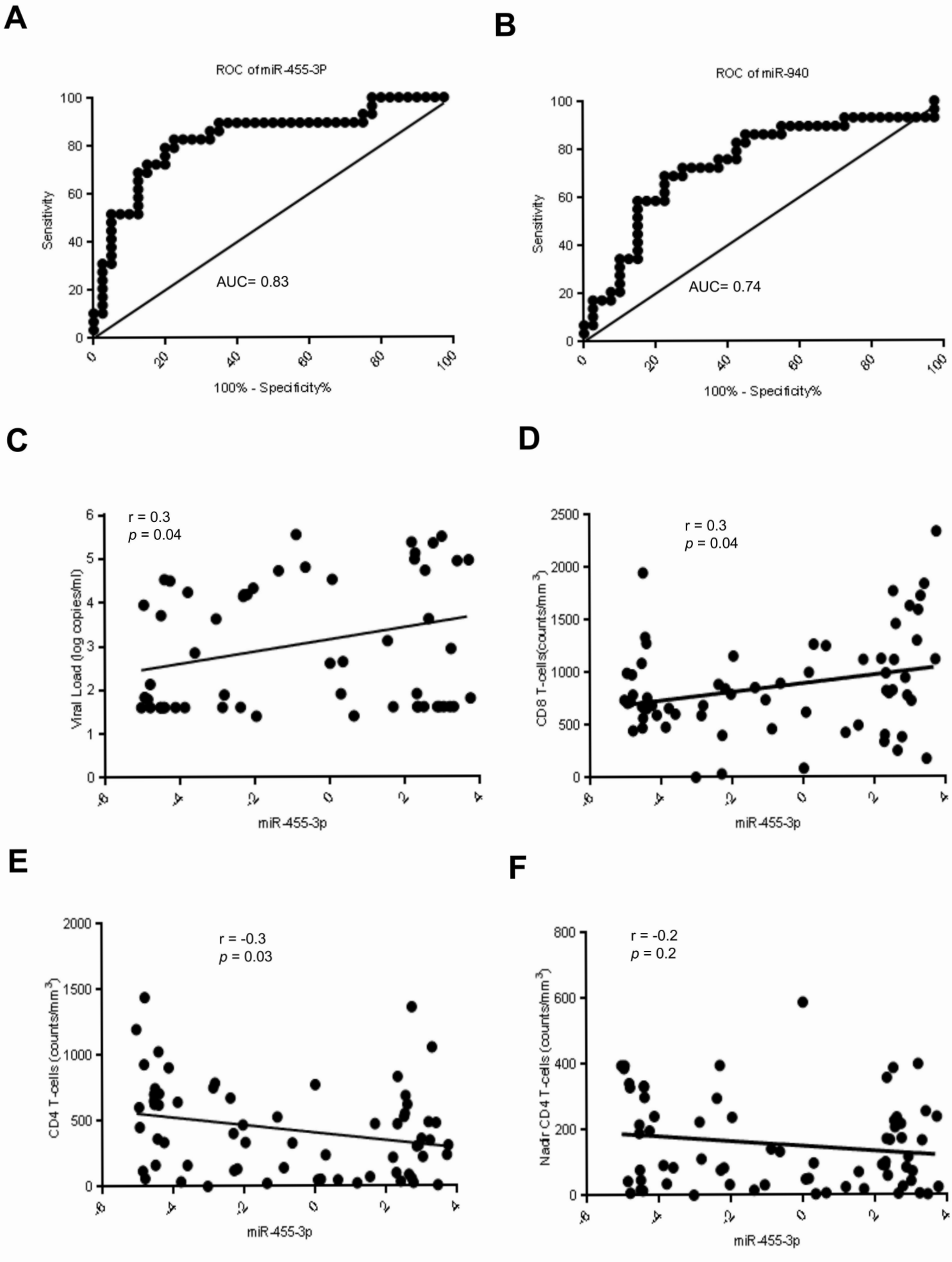
Supplementary Fig. 1: ***The receiver-operating characteristic (ROC) curve and Spearman correlation analysis of array hybridization.*** The expression level of miR-455-3p and miR-940 by array hybridization was used to generate ROC curves. The AUC for miR-455-3p was 0.83 (A) and for miR-940 was 0.74 (B). The Spearman correlation analyses between miR-455-3p relative fold changes and viral load (C), CD8 T-cells (D), current CD4 T-cells (E) and nadir CD4 T-cells (F).

Supplementary Fig. 2: Vector Support Machine Analysis. The top 10 miRNAs with highest frequency of miRNA detection based on p-value ($p<0.05$) and two sample t-test are shown.

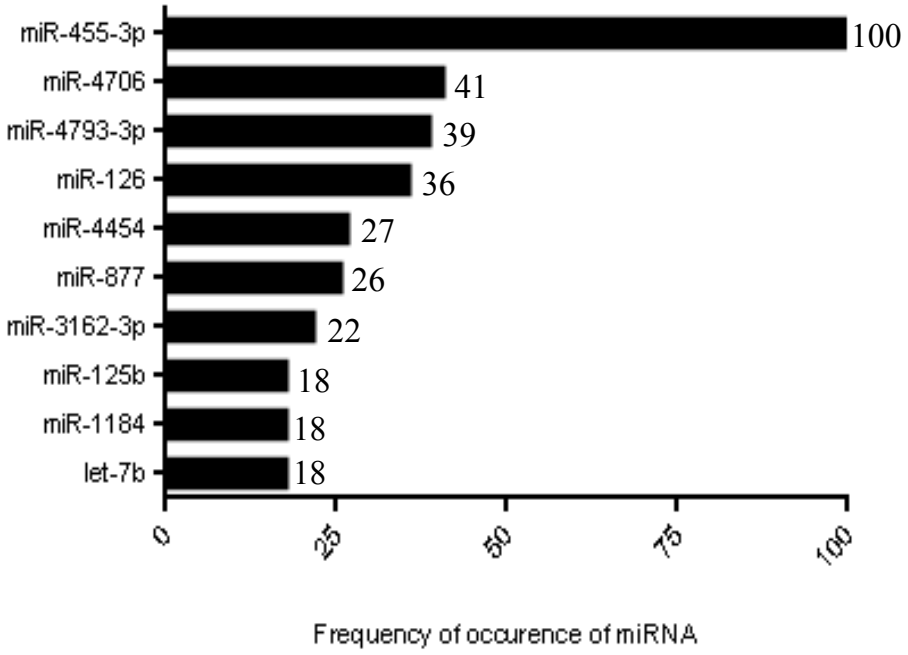
Supplementary Fig. 3: ***Effects of HIV-1 Vpr on SK-N-SH.*** Recombinant HIV-1 Vpr (100nM) was exposed to SK-N-SH and cell viability was assessed by staining with DAPI (A) or anti-β-III tubulin (B). Total RNA was extracted from cells exposed to HIV-1 Vpr and mock. The RNA was used to quantify the expression level of miR-455-3p (C) and miR-940 (D). Each experiment was repeated two times and the results analyzed using One-way ANOVA (Kruskal-Wallis) test.

Supplementary Fig. 4: ***NGF expression in hDRG by in-cell western and quantification of miR-455-3p expression and*** **neurite length** ***in transfected SK-N-SH cells.*** Cultured hDRGs were transfected with miRNA-NC or miR-455-3p for 48 hrs. After transfection cells were incubated with anti-NGF antibodies and immunofluorescence was quantified by in-cell western (LI-COR Biosciences) (A). Total RNA was extracted from cells transfected with miRNA-NC and miR-455-3p. The RNA was used to quantify the expression level of miR-455-3p in transfected cells (B). For (A) and (B) each was repeated three times the results analyzed using One-way ANOVA (Kruskal-Wallis) test.

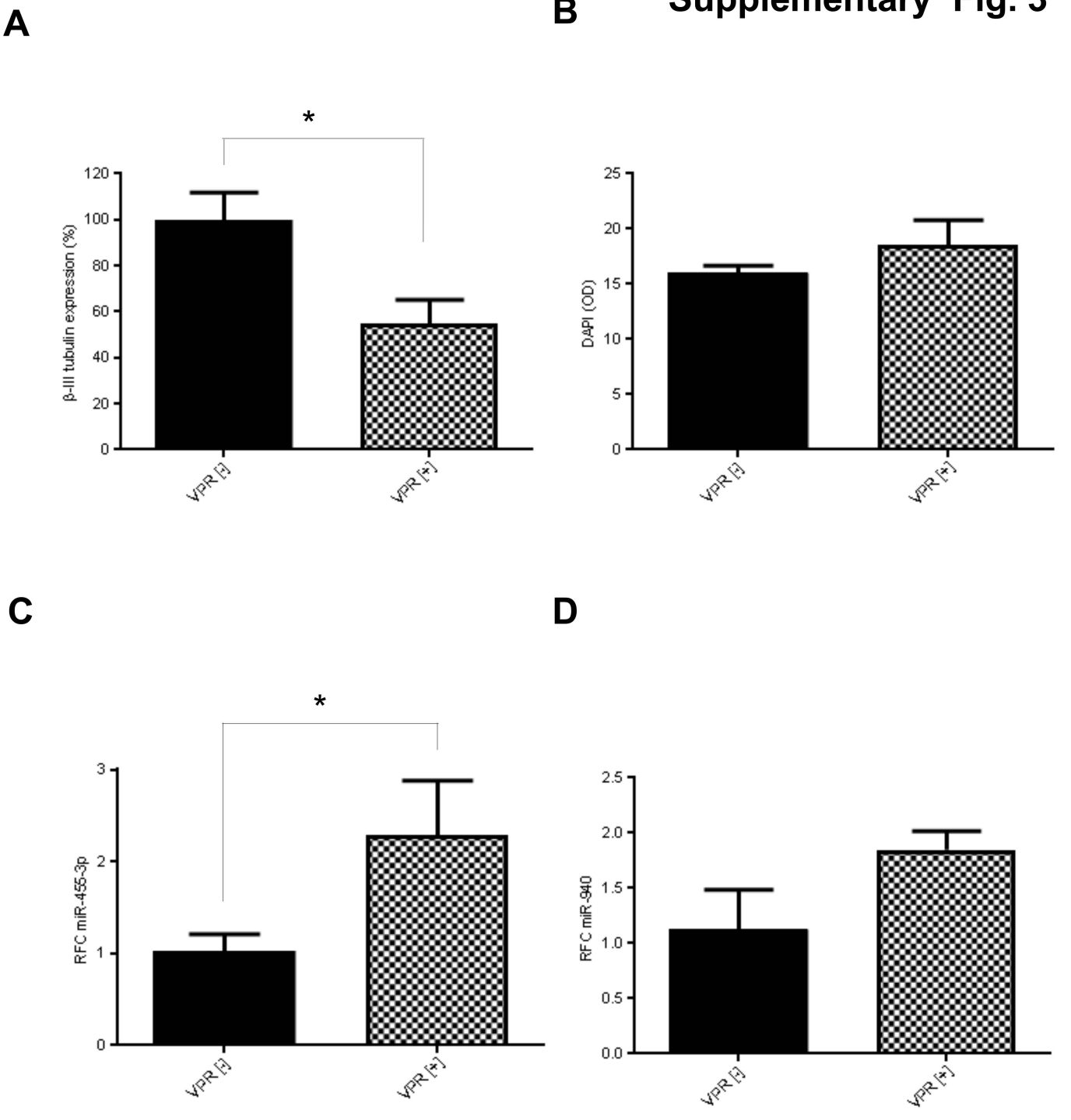
Immunofluorescence images from SK-N-SH cells transfected with miRNA-NC and miR-455-3p, and labeled with β-III tubulin antibody were captured by confocal microscope. The images were then uploaded into the neuromath software (https://www.weizmann.ac.il/vet/IC/software/wis-neuromath) to quantify the neurite length of each image. The histogram shows the mean neurite length per cell (C).


A
ROC of miR-455-3P
Sensitivity
100% - Specificity%
AUC= 0.83
B
ROC of miR-940
Sensitivity
100% - Specificity%
AUC= 0.74
C
r = 0.3
p = 0.04
Viral Load (log copies/ml)
miR-455-3p
D
r = 0.3
p = 0.04
CD8 T-cells(counts/mm 3)
miR-455-3p
E
r = -0.3
p = 0.03
CD4 T-cells (counts/mm3)
miR-455-3p
F
r = -0.2
p = 0.2
Nadir CD4 T-cells (counts/mm3)
miR-455-3p

Supplementary Fig. 2

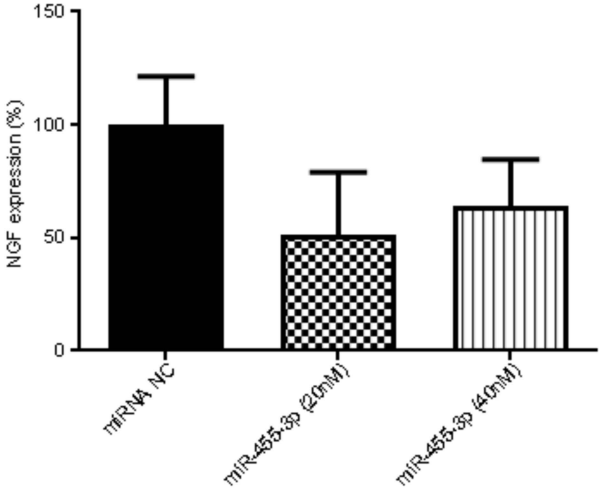


Supplementary Fig. 3

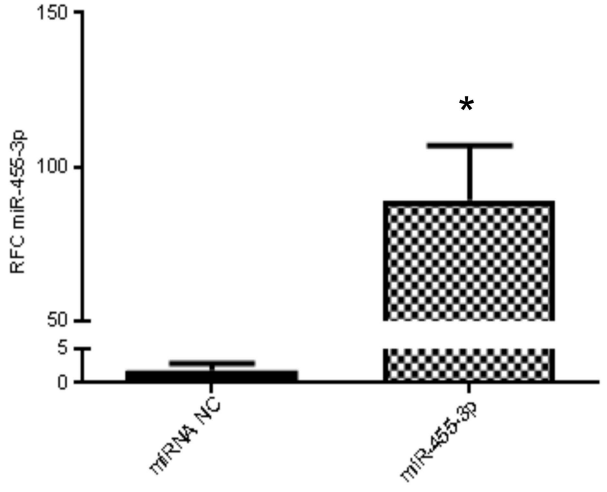


Supplementary Fig. 4

A



B



C