

## Supplementary Figure S1. MARCKS knock down results in increased p-Akt levels and cholesterol decrease potentiate this effect.

p-Akt was measured by Western blot in 15DIV neurons infected with lentiviral particles that express shRNA designed to knock down MARCKS (shMARCKS). MARCKS knock down resulted in increased p-Akt levels compared to controls. Cholesterol extraction from shMARCKS treated neurons (shMARCKS + M $\beta$ CD) resulted in a further increase of Akt phosphorylation. The amount of p-Akt (r dative to untreated controls) were: shMARCKS = 1.28  $\pm$  0.054 and shMARCKS + chol = 1.47  $\pm$  0.062 (p = 0.036, n = 3 different cultures).