



**Figure S6. The knockout of myosin 18A $\alpha$  also results in a defect in spine maturation.** (A) A representative, Calbindin-stained Purkinje neuron (DIV 18) isolated from the myosin 18A cKO mouse. (B) As in (A) except following treatment with recombinant, cell-permeable Tat-Cre on DIV 5. (C) As is (B) except the Purkinje neuron was isolated from a wild type (WT) mouse. The insets for Panels A-C show spine morphology. (D) Measurements of spine length (in  $\mu\text{m}$ ) on DIV 18 Purkinje neurons treated as indicated (green, cKO Purkinje neuron; red, cKO Purkinje neuron plus Tat-Cre; blue, WT Purkinje neuron plus Tat-Cre). The N values, which represent scoring 6 neurons per condition from one experiment, are indicated below each measurement. (E) Measurements of spine density (in numbers per  $\mu\text{m}^2$ ) on DIV 18 Purkinje neurons treated as indicated. The N values, which represent scoring 6 neurons per condition from one experiment, are indicated below each measurement. Scale bar: 20  $\mu\text{m}$  (A-C) and 5  $\mu\text{m}$  (A-C insets). \*\*  $p < 0.01$ ; \*\*\*\*  $p < 0.0001$ ; n.s, not significant.