

Overexpression of α -Klotho isoforms promotes distinct effects on BDNF-induced alterations in dendritic morphology

Marina Minto Cararo-Lopes^{1,2*}, Ratchell Sadovnik¹ Allen Fu¹, Shradha Suresh^{1,3}, Srinivasa Gandu^{1,2}, and Bonnie L. Firestein^{1*}.

¹Department of Cell Biology and Neuroscience, Rutgers, The State University of New Jersey, Piscataway, NJ, USA; ²Cell and Developmental Biology Graduate Program, Rutgers, The State University of New Jersey, Piscataway, NJ, USA; ³Neuroscience Graduate Program, Rutgers, The State University of New Jersey, Piscataway, NJ, USA;

* Corresponding author: firestein@biology.rutgers.edu

Supplementary Material

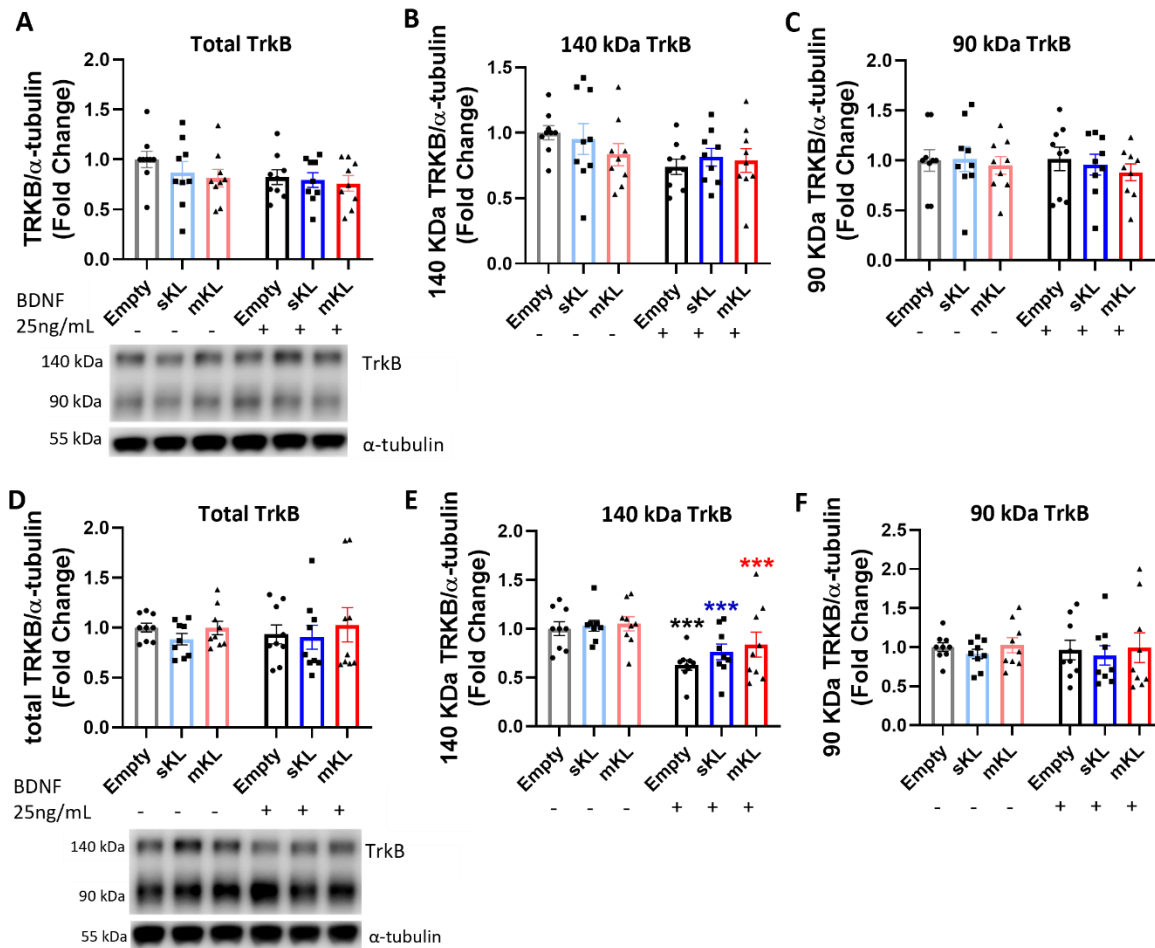


Fig. S1 72 h BDNF treatment reduces the levels of full-length TrkB receptors. Western blot analysis of TrkB levels after (A-C) 5 minute and (D-F) 72h BDNF treatment. (A,D) Quantification of 140 kDa full-length and 90 kDa forms of TrkB receptor and respective Western blot images. (B,E) Quantification of full-length TrkB receptor levels. (C,F) Quantification 90 kDa form of TrkB receptor levels. Data are presented as mean $\pm$ S.E.M. *** $p < 0.001$ as determined by two-way ANOVA followed by Tukey's multiple comparisons test in which black asterisks indicate comparison versus untreated empty group; blue asterisks, versus untreated sKl group; red asterisks, versus untreated mKl group. Data were obtained from a minimum of three independent trials.

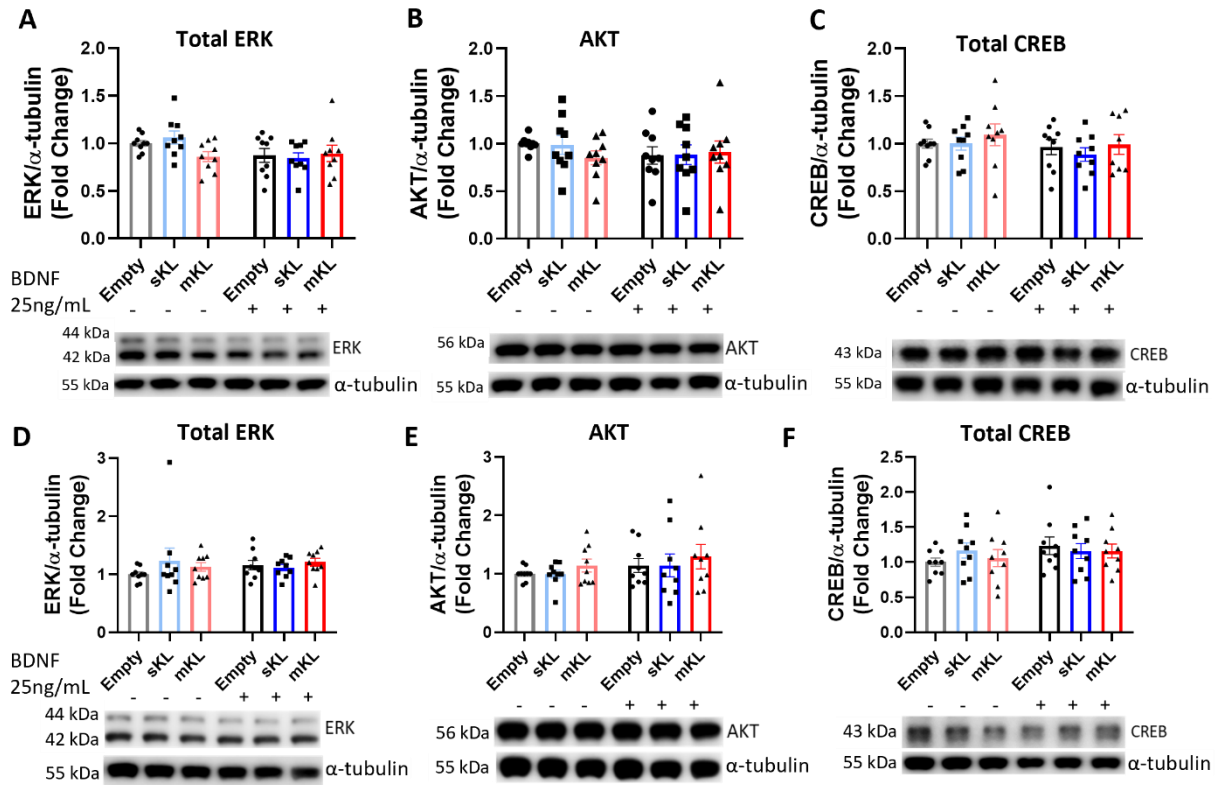


Fig. S2 Neither overexpression of α -Kl isoforms nor BDNF treatment impacts total ERK, AKT, and CREB levels. Analysis of downstream signaling after (A-C) 5 minute or (D-F) 72h BDNF treatment of cortical cells on DIV 14 previously transduced at DIV 7 with AAV-empty, AAV-sKl, or AAV-mKl vectors. Densitometric quantification and respective representative Western blot images of (A,D) ERK, (B,E) AKT, (C,F) CREB. Levels of protein were normalized to α -tubulin and expressed as fold change of control (empty, untreated) group. Data were obtained from three independent trials and are presented as mean $\pm$ S.E.M; No significant differences were determined by two-way ANOVA followed by Tukey's multiple comparisons test.