THE ROLE OF CREB/BDNF/TRK B SIGNALING IN THE ZINC DEFICIENCY MODEL OF DEPRESSION

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INTRODUCTION

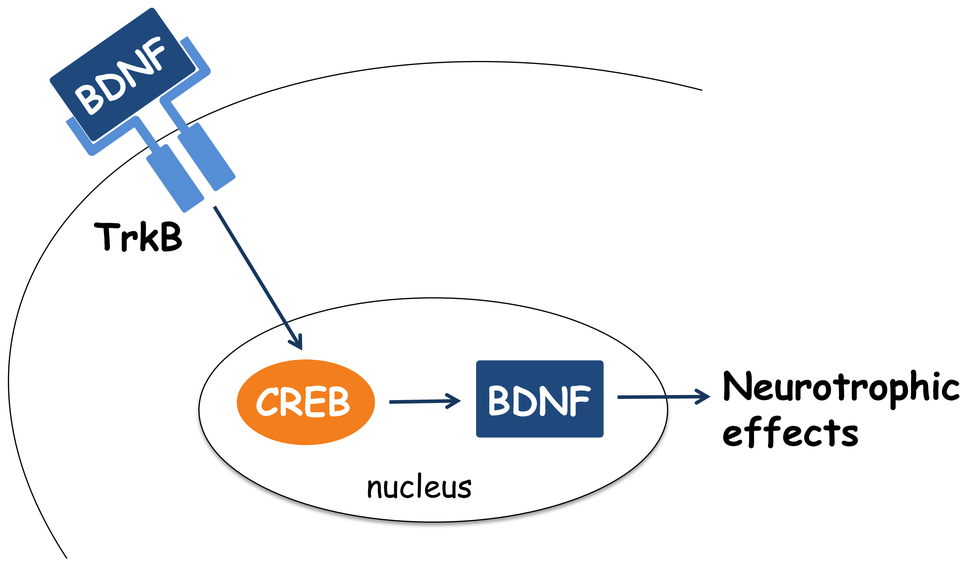


Fig. 1 CREB/BDNF/TrkB signalling
Brain derived neurotrophic factor (BDNF) gene expression is increased by the transcription factor cyclic AMP response-element binding protein (CREB). Mature BDNF signals via the high-affinity tropomyosine-related kinase B receptor (TrkB). BDNF signaling via TrkB receptors converges on the transcription factor CREB.

AIMS AND METHODS

Aim :

To examine whether 4-week deprivation of trace element zinc induces changes in the protein levels of pCREB, BDNF and TrkB in the prefrontal cortex (PFC) and hippocampus (Hp) of rats.

Animals :

Male Spraque Dowley rats, 5-week old

Diet:

50 mg zinc/kg, control group
3 mg zinc/kg, zinc deficient group (ZnD4)
administered for 4 weeks

Method :

Western blotting

RESULTS

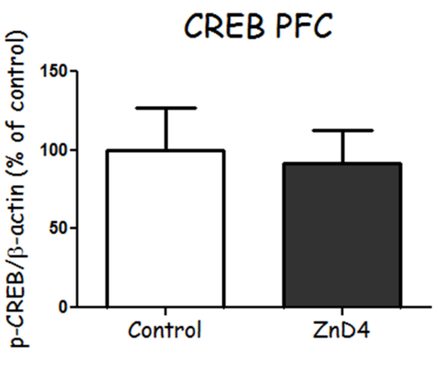


Fig. 2 The effect of 4-week dietary deprivation of zinc on p-CREB protein level in the rat prefrontal cortex.

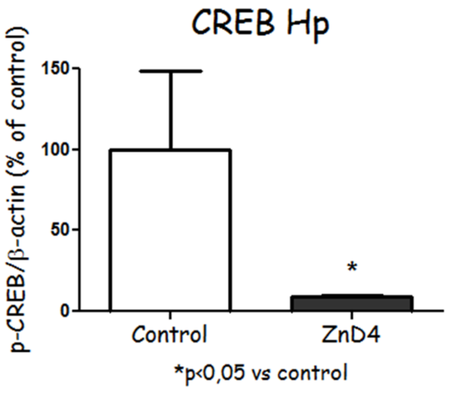


Fig. 3 The effect of 4-week dietary deprivation of zinc on p-CREB protein level in the rat hippocampus.

RESULTS

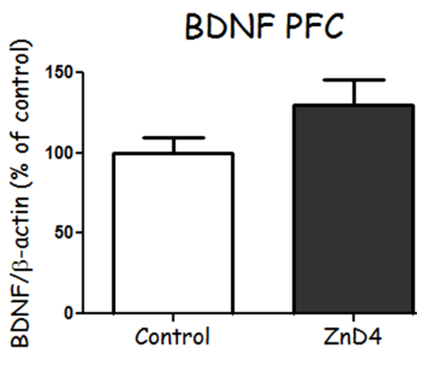


Fig. 4 The effect of 4-week dietary deprivation of zinc on BDNF protein level in the rat prefrontal cortex.

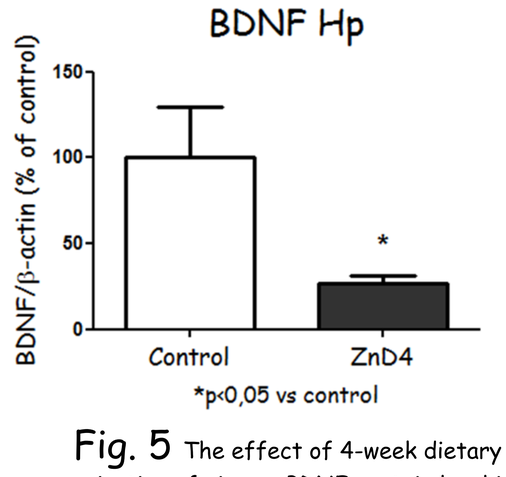


Fig. 5 The effect of 4-week dietary deprivation of zinc on BDNF protein level in the rat hippocampus .

RESULTS

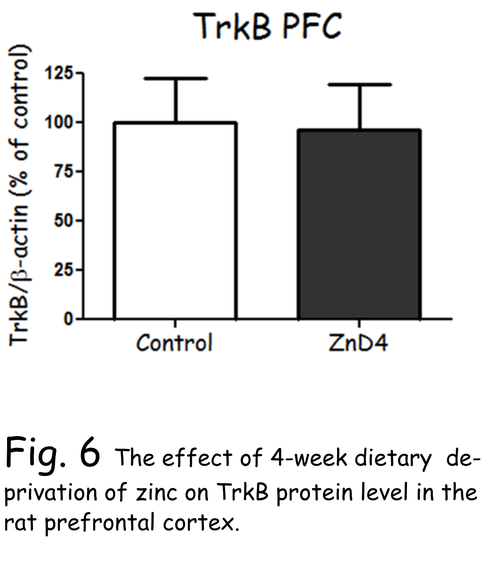


Fig. 6 The effect of 4-week dietary deprivation of zinc on TrkB protein level in the rat prefrontal cortex.

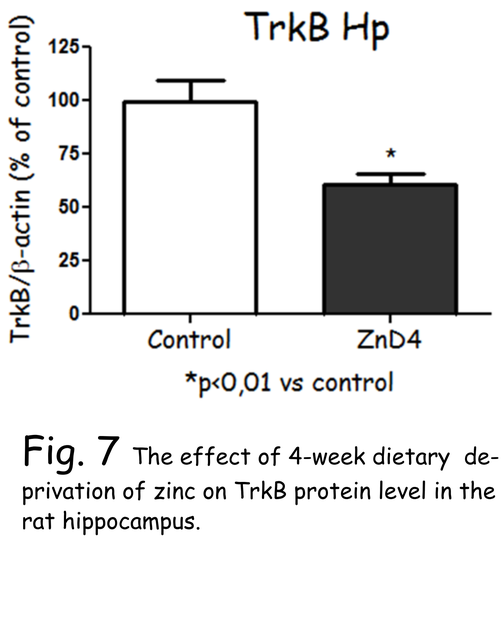
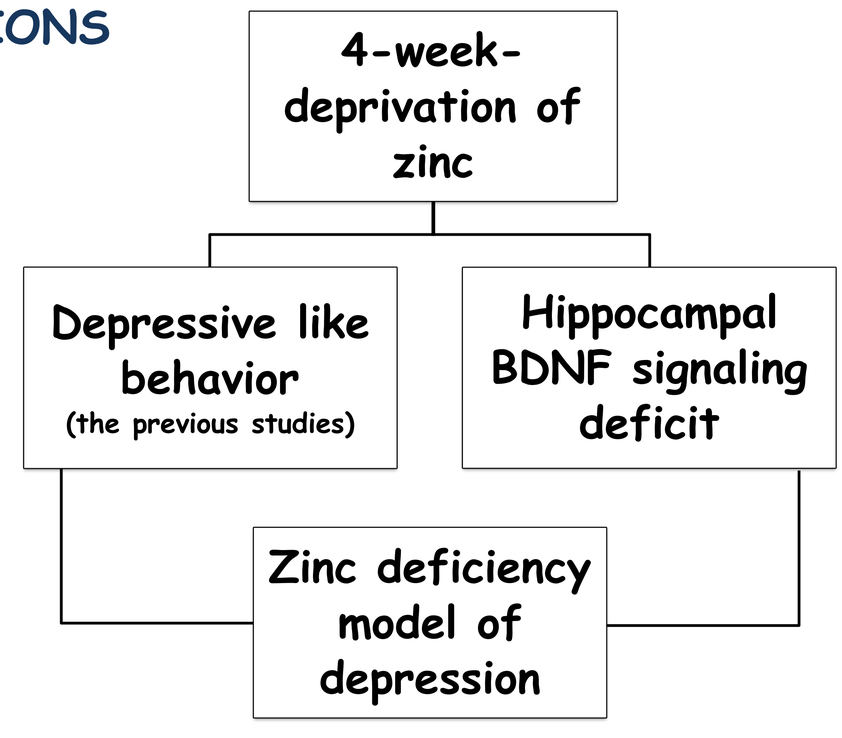


Fig. 7 The effect of 4-week dietary deprivation of zinc on TrkB protein level in the rat hippocampus.

CONCLUSIONS



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