

MEETING ABSTRACT

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Endogenous dynorphin in emotional control and stress response revisited

Christoph Schwarzer^{1*}, Christian Lutsch¹, Eduard Schunk¹, Iris Kastenberger¹, Herbert Herzog²

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Background

We recently demonstrated a clearly anxiolytic phenotype of prodynorphin-deficient (dynKO) mice on the C57bl/6N background. However, other groups observed a less prominent and partially paradigm-dependent anxiogenic phenotype or even anxiogenic phenotype of other dynKO mice. Therefore we backcrossed our dynKO mice onto the balb/c background and evaluated their anxiety-related behaviour.

Methods

In this study, we investigated anxiety and stress-related behaviour of germ-line prodynorphin knockout (dynKO) mice. Behavioural data were complemented by measurement of corticosterone serum levels.

Results

Male dynKO mice exhibited about 2-fold ambulation in the open field center and intermediate areas. DynKO mice showed also longer distance travelled (2-fold) and more time spent on open arms of the elevated plus maze test. Significantly higher numbers of mice entering the open lit area in the light-dark test were observed in dynKO as compared to wild-type mice. As observed on the C57bl/6N background, only minor changes were observed in the stress-coping abilities measured in the tail suspension and forced swim tests. A reduction of basal corticosterone levels was observed in dyn-KO mice.

Conclusions

Taken together our data support the anxiogenic effects of endogenous dynorphin as observed on the C57bl/6N background. However, the phenotype is less clear on the balb/c background.

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Author details

¹Institute of Pharmacology, Innsbruck Medical University, 6020 Innsbruck, Austria. ²Neuroscience Research Program, Garvan Institute of Medical Research, Darlinghurst NSW 2010, Australia.

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* Correspondence: schwarzer.christoph@i-med.ac.at

¹Institute of Pharmacology, Innsbruck Medical University, 6020 Innsbruck, Austria

Full list of author information is available at the end of the article