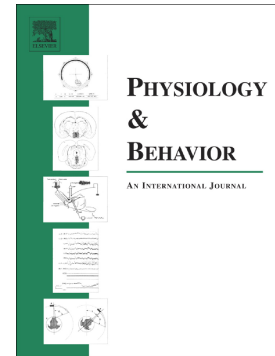


Accepted Manuscript

Predator odor induced defensive behavior in wild and laboratory rats: A comparative study

Silke Storsberg, Rafał Stryjek, Klaudia Modlińska, Katharina Gottswinter, Wolfgang D'Hanis, Andrea Kröber, Kerstin E.A. Wernecke, Thomas Roskoden, Markus Fendt



PII: S0031-9384(18)30326-3
DOI: doi:[10.1016/j.physbeh.2018.06.009](https://doi.org/10.1016/j.physbeh.2018.06.009)
Reference: PHB 12228
To appear in: *Physiology & Behavior*
Received date: 16 January 2018
Revised date: 1 June 2018
Accepted date: 8 June 2018

Please cite this article as: Silke Storsberg, Rafał Stryjek, Klaudia Modlińska, Katharina Gottswinter, Wolfgang D'Hanis, Andrea Kröber, Kerstin E.A. Wernecke, Thomas Roskoden, Markus Fendt , Predator odor induced defensive behavior in wild and laboratory rats: A comparative study. *Phb* (2017), doi:[10.1016/j.physbeh.2018.06.009](https://doi.org/10.1016/j.physbeh.2018.06.009)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Predator odor induced defensive behavior in wild and laboratory rats: A comparative study
Silke Storsberg^{a,d,*} silke.storsberg@med.ovgu.de, **Rafał Stryjek^b**, **Klaudia Modlińska^b**,
Katharina Gottswinter^a, **Wolfgang D'Hanis^a**, **Andrea Kröber^a**, **Kerstin E.A.
Wernecke^{c,d}**, **Thomas Roskoden^a** & **Markus Fendt^{c,d}**

^aInstitute for Anatomy, Otto-von-Guericke-University, Magdeburg, Germany;

^bInstitute of Psychology, Polish Academy of Sciences, Warsaw, Poland;

^cInstitute for Pharmacology and Toxicology, Otto-von-Guericke-University, Magdeburg, Germany

^dCenter for Behavioral Brain Sciences (CBBS), Otto-von-Guericke-University, Magdeburg, Germany

*Corresponding author at: Otto-von-Guericke-University, Medical Faculty, Institute of Anatomy (House 43), Leipziger Str. 44, 39120 Magdeburg, Germany

Abstract

Laboratory rats are frequently used as animal models in research. Since the 1920s rats are bred and reared in laboratories which affect anatomy, physiology, and behavior responses. In the present study we exposed laboratory and wild rats to predator odor and comparatively analyzed their behavioral and physiological responses. In detail, Warsaw Wild Captive Pisula Stryjek (WWCPS) rats and Lister Hooded (LH) rats were exposed to the predator odor 2,3,5-trimethyl-3-thiazoline (TMT), their behavior was videotaped and blood samples were collected for subsequent serum corticosterone analysis. In both rat stocks, exposure to TMT induced avoidance behavior and increased freezing behavior. Notably, the increase in freezing was based on an increase number of freezing events in LH rats whereas WWCPS rats prolonged the mean duration of the single freezing events. Interestingly, TMT exposure lead to a serum corticosterone increase in WWCPS rats but not in LH rats. Furthermore, WWCPS rats generally expressed decreased but faster locomotor activity, as well as more grooming behavior than LH rats. Taken together, these data indicate differences in behavioral and physiological defensive responses to predator odors in the two rat stocks.

1. Introduction

The rat is one of the species most frequently used in laboratory research. They are used as an animal model to investigate behavioral and physiological mechanisms. It is assumed that laboratory rats are used since the mid-19th century (Richter 1959; Lockard 1968; Hedrich 2000). Based on this assumption, the laboratory rats now exist

Download English Version:

<https://daneshyari.com/en/article/8650297>

Download Persian Version:

<https://daneshyari.com/article/8650297>

[Daneshyari.com](https://daneshyari.com)