

Technical University of Denmark



Effects of repeated acute stress in Senegalese sole *Solea senegalensis*. Can this species habituate to reiterated handling stress?

Conde-Sieira, Marta; Gesto, Manuel; Comesaña, S.; Velasco, C.; Hernandez-Perez, J.; Valente, L. M. P.; Soengas, J.L.

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Conde-Sieira, M., Gesto, M., Comesaña, S., Velasco, C., Hernandez-Perez, J., Valente, L. M. P., & Soengas, J. L. (2017). Effects of repeated acute stress in Senegalese sole *Solea senegalensis*. Can this species habituate to reiterated handling stress?. Abstract from Congress of Iberian Association for Comparative Endocrinology, Vigo, Spain.

DTU Library
Technical Information Center of Denmark

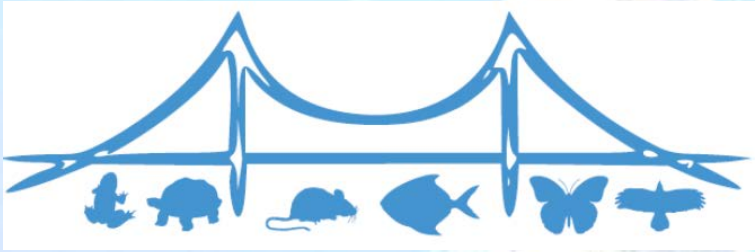
General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Program and Communications



XI Congress of Iberian Association for Comparative Endocrinology

Vigo, July 13rd-15th 2017



UniversidadeVigo



EFFECTS OF REPEATED ACUTE STRESS IN SENEGALESE SOLE *Solea senegalensis*. CAN THIS SPECIES HABITUATE TO REITERATED HANDLING STRESS?

*Marta Conde-Sieira*¹, *M. Gesto*², *S. Comesaña*¹, *C. Velasco*¹, *J. Hernández-Pérez*¹, *L.M.P. Valente*³, *J.L. Soengas*¹. E-mail: mconde@uvigo.es

¹Laboratorio de Fisioloxía Animal, Departamento de Bioloxía Funcional e Ciencias da Saúde, Facultade de Bioloxía and Centro Singular de Investigación Mariña-ECIMAT, Universidade de Vigo, Spain. ²DTU-AQUA, Technical University of Denmark, Hirtshals, Denmark. ³CIMAR/CIIMAR, Av. General Norton de Matos s/n, Matosinhos, Portugal.

Animals can sometimes habituate to a reiterative stressor by reducing the physiological response that such stressor evoked initially. Studies related to stress habituation in fish are scarce and the available data differ depending on the species, type, duration and severity of the stressor. The aim of this study was to investigate the stress response of juvenile Senegalese sole (88.3±1.5 g) submitted to repeated handling stress the 3 days previous to the experiment in order to evaluate the occurrence of habituation to those stress conditions in this species. Thus, five different experimental groups (N=11) were evaluated in duplicate: not stressed fish (control), fish stressed only on the experimental day (ST/naïve), and fish stressed on the experimental day and on the 3 previous days during the morning (ST/Dt), at night (ST/Nt) or both (ST/Dt+Nt). Parameters related to the physiological stress response were evaluated in plasma and brain. Handling stress in ST/naïve group induced incremented values of plasmatic cortisol, glucose and lactate but no changes in catecholamines levels compared to controls. In trained fish, higher cortisol but decreased glucose, lactate and catecholamines levels were observed after stress compared to controls and to ST/naïve groups. In brain, ST/naïve group presented no significant changes in serotonergic activity. However, incremented serotonergic activity was detected in fish previously trained. Furthermore, CRH expression in hypothalamus was higher in ST/naïve fish but not in fish submitted to repeated stress compared to controls. In conclusion, it seems that there is not a habituation to repeated acute stress in *Solea senegalensis* in terms of serotonergic activity and cortisol release during the physiological stress response. However, the decrease of plasmatic catecholamines and the hypothalamic CRH expression indicate a possible modulation of the stress response in trained fish.

