was found in the HSD treatment, and condition factor varied inversely regards to stocking density. Plasma cortisol and osmolality were direectly related to stocking density though the former was not significantly different among treatments. Plasma lactate and glucose significantly increased while stocking density rose. Nevertheless, free fatty acids did not vary among treatments, and triglycerides only decreased in LSD.

MELATONIN RECEPTORS EXPRESSION (MT1 AND MT2) IN THE PITUITARY OF EUROPEAN SEA BASS (DICENTRARCHUS LABRAX): ARISING EXPLANATIONS FOR DAILY AND SEASONAL VARIATIONS IN PITUITARY HORMONES.

Herrero, M.J., Besseau, L., Fuentès, M., Sauzet, S., Covès, D., Peyric, E., Boeuf, G., Rubio F., and Falcón, J.

Symposium: Physiology of fish in aquaculture *Presentation:*Poster

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Abstract: In fish, pituitary hormones display daily and seasonal rhythms of production. Here we show that POMC, GH, PRL, SL, TSH, FSH, and LHexhibit different patterns of expression in the European sea bass, Dicentrarchus labrax. Because the hormone melatonin translates environmental timing cues to the organisms, we investigated the expression of melatonin receptors MT1, MT2, and Mel1c in seabass pituitaries. Only the former two were expressed in the adenohypophysis. Expression was widely distributed but some, yet unidentified cells, showed stronger expression than others. We also have indication that these receptors might mediate the photoperiodic effects of melatonin on some pituitary productions.

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A RADICAL APPROACH TO SURVIVING HYPOXIA. DEPRESSED FREE RADICAL PRODUCTION AND MITOCHONDRIAL STABILITY IN PERMEABILISED HEART FIBRES OF THE HYPOXIA TOLERANT EPAULETTE REEF SHARK (HEMISCYLLUM OCELLATUM)

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Symposium: Fish living on the edge *Presentation:*oral

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Abstract: Hypoxia not only impacts tissue ATP supply, but can induce mitochondrial dysfunction, perturb reactive species (RS) release and promote necrosis and/or apoptosis. The epaulette shark, Hemiscyllum ocellatum, tolerates severe hypoxia and even anoxia at 30oC which is rare among elasmobranchs. Using a permeabilised ventricle fibre preparation, we compare heart mitochondrial function, stability and RS production in H. ocellatum, relative to the non-hypoxia tolerant shovelnose ray, Aptychotrema rostrata prior to and following exposure to 40% of their critical oxygen tension (Pcrit) for 2 h. Despite similar mitochondrial fluxes in normoxia, RS production in H. ocellatum was half that of A. rostrata. Following exposure to hypoxia, oxidative phosphorylation (OXP) of H. ocellatum fibres remained intact, while that of A. rostrata was depressed by 57% and cytochrome c oxidase by 34%. Overall H. ocellatum mitochondria showed greater stability during exposure to hypoxia, with maintained OXP and lower RS outputs. These characteristics likely protect bioenergetic function during and following severe hypoxia in the epaulette shark.

ABSTRACTS

(in **alphabetical** order of **first author**)

Compiled by **Don MacKinlay**

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