Seminars in Zoophysiology at Aarhus University

New Insights into Adrenergic Stimulation of the Fish Heart?

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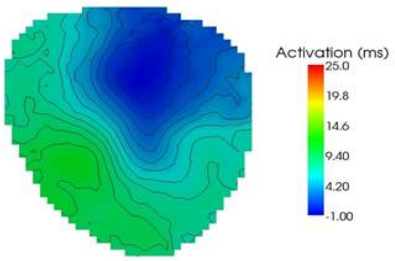
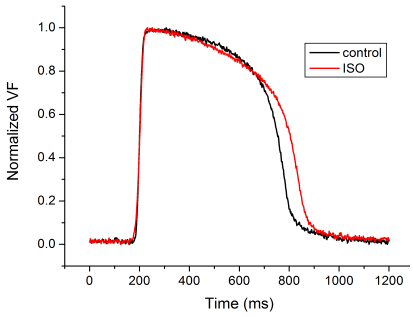
The role of catecholamines in stimulating the cardiovascular system is well established. By and large, stronger cardiac contractions are achieved via increased cellular Ca^{2+} flux and faster rates of contraction are achieved via faster rates of Ca^{2+} cycling in the cardiomyocytes. Together, stronger and faster contractions increase cardiac output to meet elevated circulatory demands in line with flight/ fight responses. Despite this well established dogma, we have recently noticed 'unusual' features of adrenergic stimulation in the trout heart. The first is a consistent prolongation of the ventricular action potential following adrenergic stimulation. This benefits positive inotropy but may limit positive chronotropy. Secondly, that ventricular conduction velocity is slowed by adrenergic stimulation, which similarly may benefit positive inotropy but limit positive chronotropy. This seminar is a "work in progress" exploring the underlying cellular mechanisms and considers the functional implications they impose for fish cardiac physiology.





Monday January 16th at 10.15

Room 127 (zoofys kaffestue), building 1131