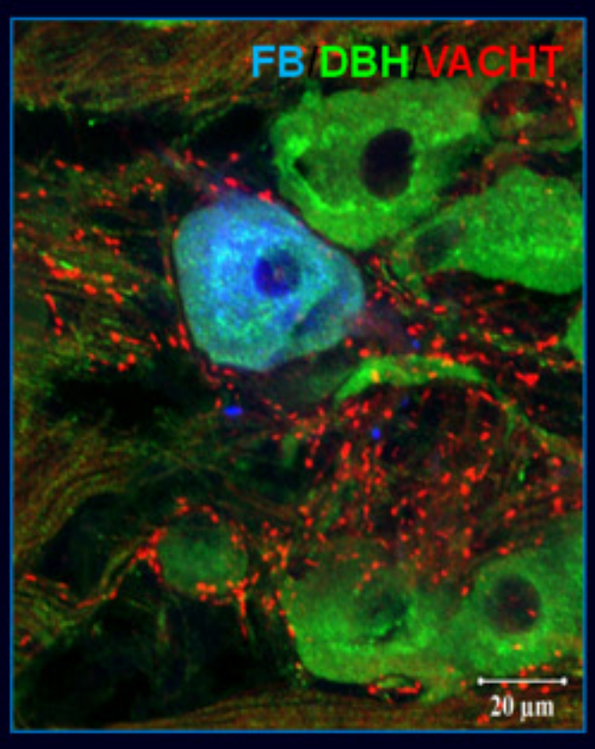
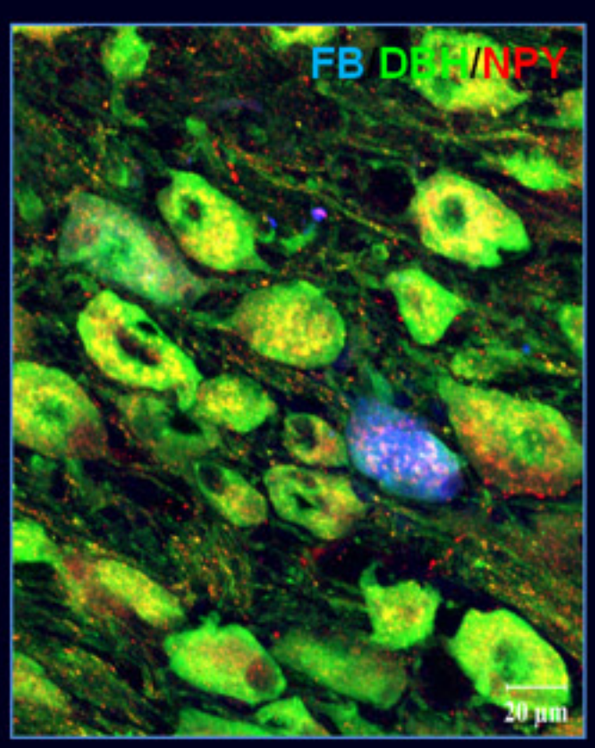
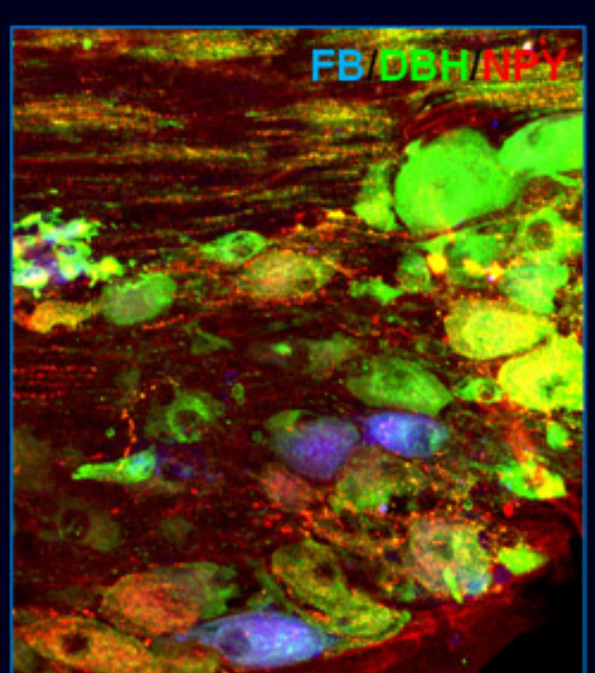
Chemical coding of autonomic neurons supplying the hip joint capsule in the sheep.

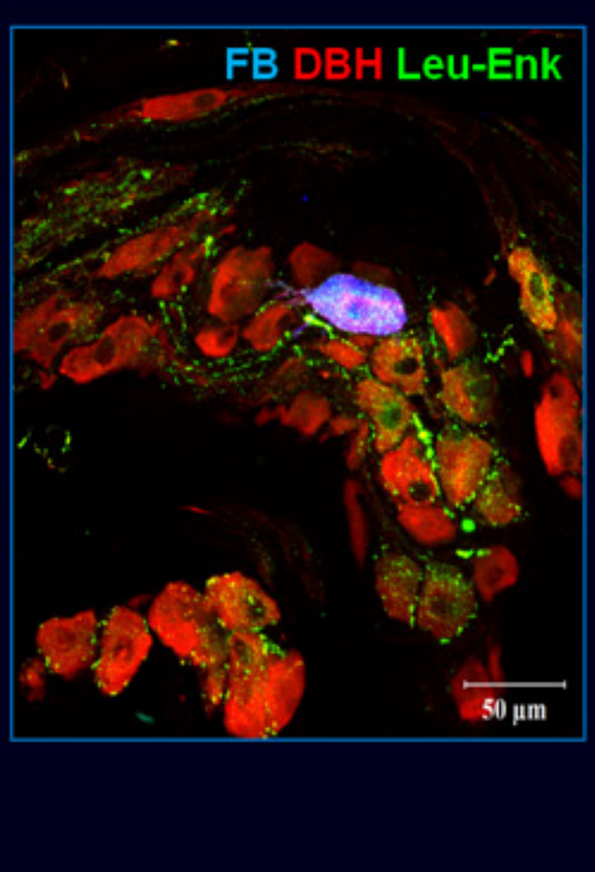
Dudek A.[1], Sienkiewicz W.[1], Chrószcz A.[2], Janeczek M.[2] and Kaleczyc J.[1]

[1]University of Warmia and Mazury, Faculty of Veterinary Medicine, Department of Animal Anatomy, Oczapowskiego 13, 10-719 Olsztyn, Poland
[2]Wroclaw University of Environmental and Life Sciences, Faculty of Veterinary Medicine, Department of Animal Anatomy, Kozuchowska 1, 51-631 Wroclaw



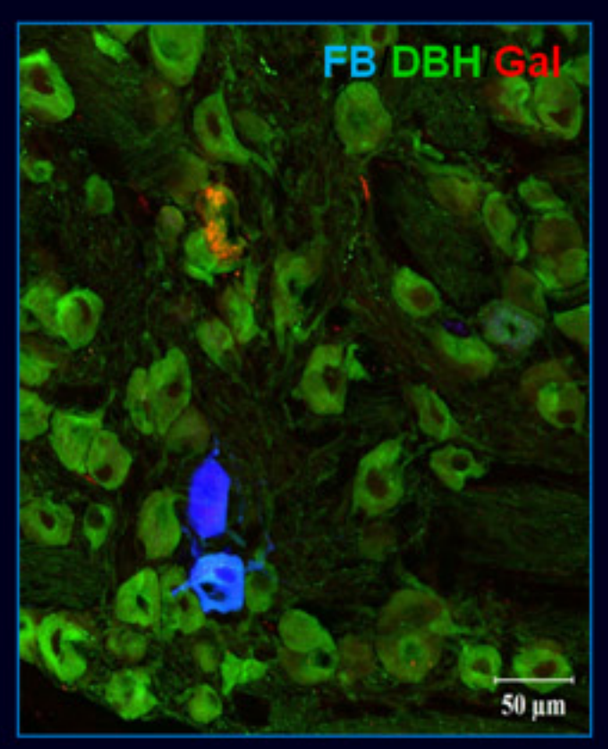


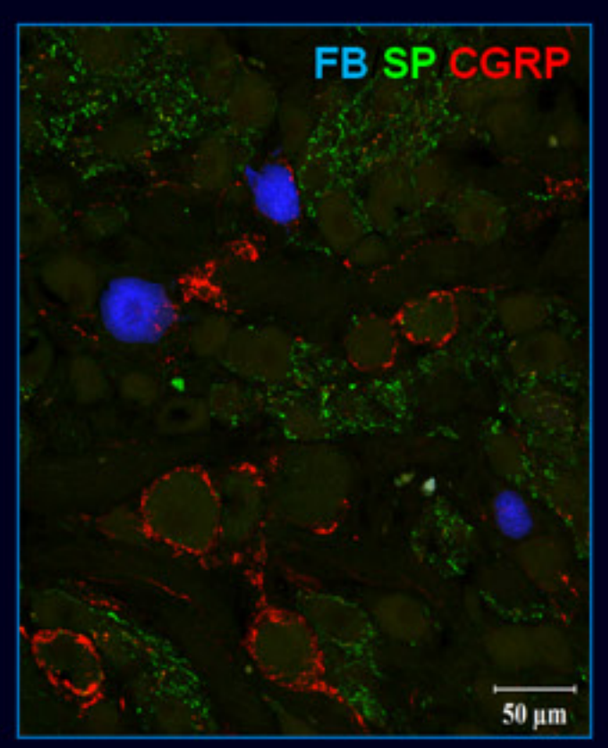


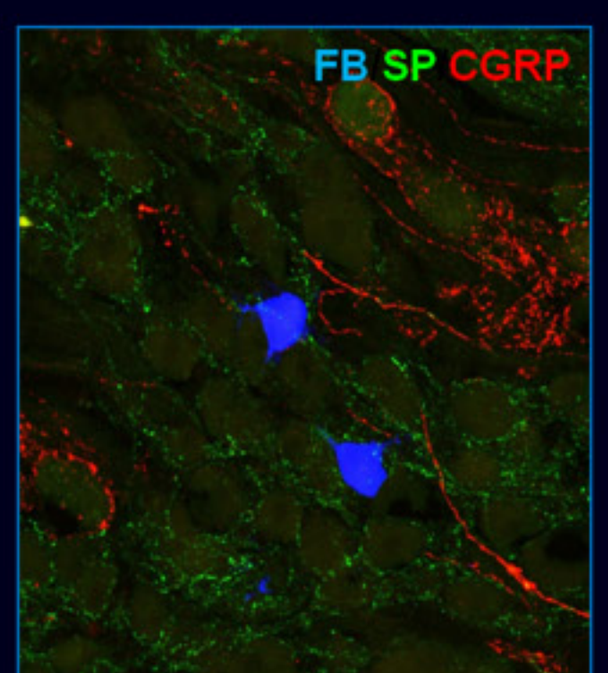


Retrograde tracing and double labelling immunohistochemistry was applied to investigate the immunohistochemical properties of autonomic neurons contributing to the innervation of the hip joint capsule (HJC) in the sheep.

Immunohistochemistry revealed that nearly all the neurons (96%) were adrenergic in nature dopamine-beta-hydroxylase (DβH+)- positive. Retrogradelly labelled neurons displayed also immunoreactivities to neuropeptide Y (NPY; 34%) and enkephalins: Met-enkephalin (Met-Enk; 20%), Leu5-enkephalin (Leu-Enk; 6%). The analysis of double-stained tissue sections revealed that all NPY-, Leu-Enk- and Met-Enk-immunoreactive FB+ perikarya were simultanously DβH-positive. No cholinergic neurons involved in the innervation of the HJC was found. However, FB+ nerve cell bodies were surrounded by numerous cholinergic nerve fibers often forming basket like formations . The labelled perikarya were galanine-negative (Gal$^-$) but single Gal+ nerve fibers were found in the intragalional connective tissue. Substance P (SP+)-positive or calcitonine gene related peptide (CGRP+) - positive intraganglional nerve terminals were very numerous. These frequently fibers formed "baskets" surrounding FB+ perikarya in different regions of SCHG.







Participation (%) of the different subpopulations of autonomic neurons among all the autonomic FB+ neurons supplying hip joint capsule in the sheep.