

# Chondroitin Sulfate in Human Cutaneous Meissner and Pacinian Sensory Corpuscles

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Chondroitin sulfate is a glycosaminoglycan involved in maintaining the morphofunctional properties of the extracellular matrix in peripheral nerves, but its distribution in human sensory corpuscles is unknown despite the role of extracellular matrix in mechanotransduction and axonal guidance. In this study we used immunohistochemistry to analyze the distribution of chondroitin sulfate in human cutaneous Meissner and Pacinian corpuscles. Chondroitin sulfate expression was absent from Meissner corpuscles. In Pacinian corpuscles chondroitin sulfate was found associated to a CD34 positive endoneurial-related layer, interposed between the S100 protein positive inner core cells, and the vimentin positive inner core and outer core-capsule cells. Therefore, the intermediate CD34+/chondroitin sulfate+ intermediate layer present in Pacinian corpuscles isolates the neural segment of the corpuscles (axon and inner core) from the non-neural segments (outer core and capsule). These results suggest a role of chondroitin sulfate in the proper axonal growth and guidance, within the neuronal compartment of the Pacinian corpuscles during development and reinnervation, can be hypothesized. Moreover, a role of CS in mechanotransduction cannot be ruled out. *Anat Rec*, 302:325-331, 2019. © 2018 Wiley Periodicals, Inc. © 2018 Wiley Periodicals, Inc.

chondroitin sulfate

extracellular matrix

human

intermediate layer

Meissner corpuscles

Pacinian corpuscles

CD34 antigen

chondroitin sulfate

protein S 100

vimentin

chondroitin sulfate

adult

Article

controlled study

cutaneous meissner

enzymatic degradation

extracellular matrix

human

human tissue

immunohistochemistry

immunoreactivity

mechanoreceptor

mechanotransduction

neuromere

Pacini corpuscle

peripheral nerve

priority journal

protein expression

reinnervation

skin surface

adolescent

child

mechanoreceptor

metabolism

middle aged

Pacini corpuscle

sensory ganglion

skin

young adult

Adolescent

Adult

Child

Chondroitin Sulfates

Ganglia, Sensory

Humans

Mechanoreceptors

Mechanotransduction, Cellular

Middle Aged

Pacinian Corpuscles

Peripheral Nerves

Skin

Young Adult