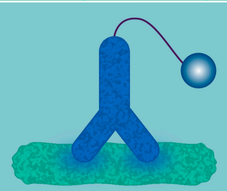
Mechanism of Pain Tolerance in Mouse Model of Christianson Syndrome

Children born with Christianson syndrome (CS) suffer from various neurological ailments, including a hyposensitivity to pain

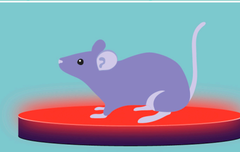
CS is caused by mutations in the *SLC9A6* gene which encodes the sodium-proton exchanger protein NHE6

Does NHE6 determine nociceptor function and pain behavior?

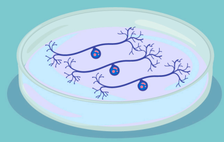
Nhe6 knockout mice as mouse model of CS



Immunolabelling—NHE6 and TRPV1 receptor

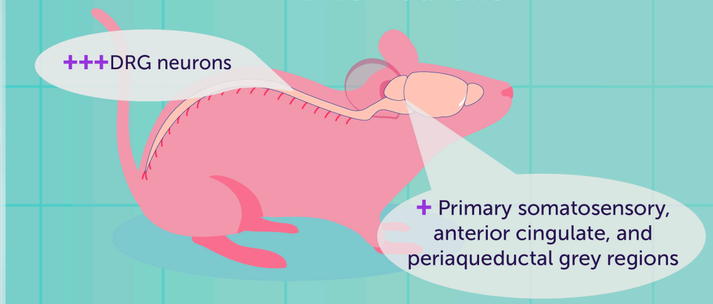


Nociceptive behavior tests



Calcium response in dorsal root ganglion (DRG) neurons

Higher expression of NHE6 in small diameter DRG neurons



Reduced pain sensitivity

Reduced nociceptive function in DRG neurons

Absence of NHE6 protein in mouse nociceptors resulted in a pain-tolerant phenotype, similar to that seen in children with CS

Loss of SLC9A6/NHE6 impairs nociception in a mouse model of Christianson Syndrome
Petitjean *et al.* (2020) | Pain
DOI: 10.1097/j.pain.0000000000001961

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