

**Determining the role of Semaphorin proteins in the compensatory growth observed  
in adult *Gryllus Bimaculatus***

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The Mediterranean Field cricket, *Gryllus bimaculatus*, demonstrates compensatory growth when subjected to removal of the ear. The cricket auditory system, necessary for mating and avoiding predators, consists of two ears located in each foreleg with Nerve5 extending from the ear and into the prothoracic ganglion where it terminates and communicates with its postsynaptic partner, AN-2. When one ear is removed, Nerve5 is severed and retracts. AN-2, however, does not degenerate as a result of this deafferentation as expected; instead, its dendrites extend across the midline of the prothoracic ganglion and form new and functional synapses with the AN-2 of the contralateral ear. This form of plasticity is unusual to see in adult systems, and understanding the molecules involved in (mcc) desusua5(or)1820910nsaaonaved 1 01 S7n2)10 01 10