

Names	Sequences
<i>BNP (rat)</i>	Forward: 5'- GCTGCTGGAGCTGATAAGAGA-3' Reverse: 5'- CGCCGATCCGGTCTATCTTC-3'
<i>NPRA (rat)</i>	Forward: 5'- CCTTTCAGGCTGCCAAAAT -3' Reverse: 5'- ATCCTCCACGGTGAAGTTGA-3'
<i>GAPDH (rat)</i>	Forward: 5'-GAACGGGAAGCTCACTGG-3' Reverse: 5'-GCCTGCTTCACCACCTTCT-3'
<i>VDR (human)</i>	Forward: 5'- GTGGACATCGGCATGATGAAG-3' Reverse: 5'- GGTCGTAGGTCTTATGGTGGG-3'
<i>Actin (human)</i>	Forward: 5'- CTCCATCCTGGCCTCGCTGT -3' Reverse: 5'- GCTGTCACCTTCACCGTTCC-3'
<i>BNP (human)</i>	Forward: 5'- CAGCTTCTGCATCGTGGATT-3' Reverse: 5'-CATCTTCCTCCCAAAGCAGCC-3'

	Sequences
<i>H-NPPB-Site 1</i>	Forward: 5'- ATCCTGTGTTGGCTTGGTGG-3' Reverse: 5'- TGAGAGATAGGGTCCAGTGATGA-3'
<i>H-NPPB-Site 2</i>	Forward: 5'- ATGGCGGATTGTGAGAGCAT-3' Reverse: 5'- CCGAGGGAACCTTGGAGCAAA-3'

> NPPB -Promoter-WT1

[illegible]



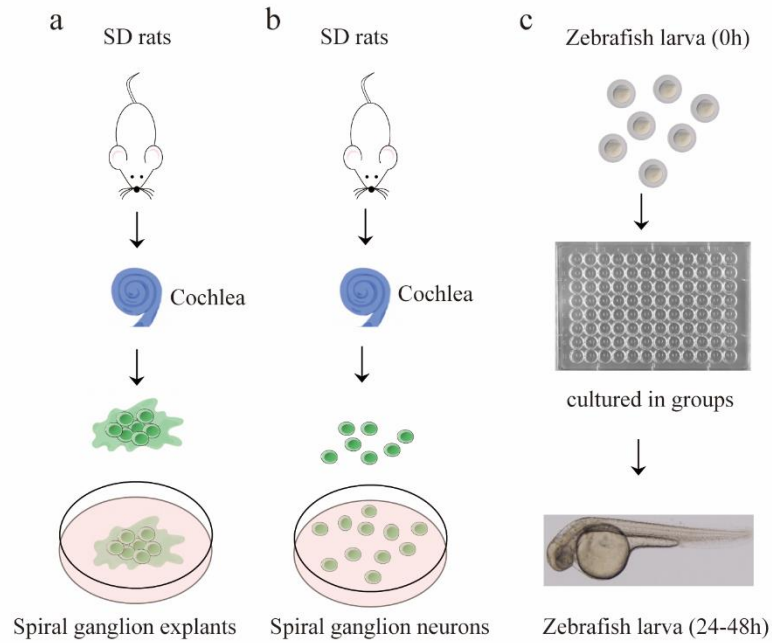
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>R-Nppb-promoter

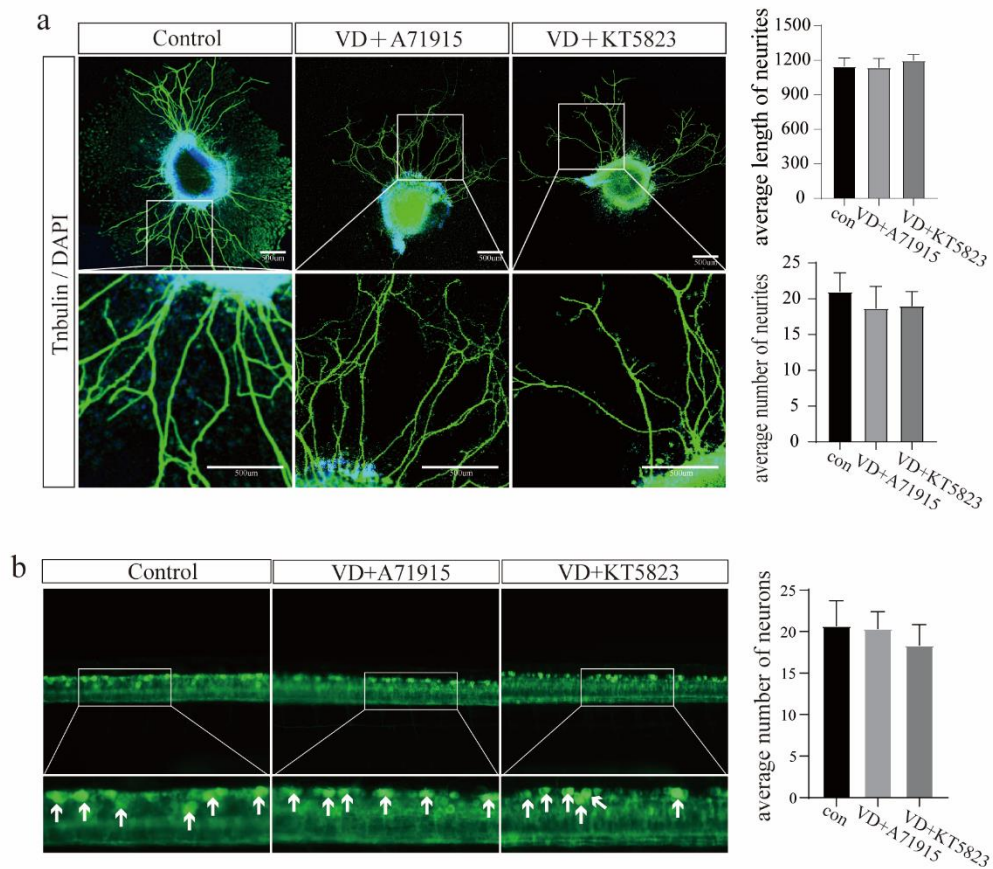
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(The highlighted part represents the mutation site)



**Figure S1.** The diagram of the sequential experimentations. (a) The cochlea was removed from the P0 rat, and the middle turn of the spiral ganglions (SGs) was carefully separated from the spiral plate, cut into equal 300 to 500  $\mu\text{m}$  sections, and transferred to 15 mm culture dishes. (b) The cochlea was removed from the P0 rat. Then, SGs were separated from the cochlea and enzymatically dissociated into single cells, culturing in 15 mm culture dishes. (c) Transparent larvae were isolated and randomly divided into different groups. The observation was made after incubation for 24-48 hours.



**Figure S2.** The inhibition of the GMP-PKG pathway stopped the pro-neurogenic effects of vitamin D. (a) SG explants were cultured in 10 nM vitamin D plus 1  $\mu$ M NPR-A antagonist A71915, or 10 nM vitamin D plus 1  $\mu$ M PKG inhibitor KT5823 followed by fluorescence immunostaining analysis. The results showed no significant difference in the number and length of neurites compared with the control group (b) Zebrafish larva was cultured in 10 nM vitamin D plus 1  $\mu$ M A71915 and 10 nM vitamin D plus 1  $\mu$ M KT5823. The results showed no significant difference in the number and length of neurites compared with the control group. Arrows indicate complete and countable neurons.