

A new chemotaxis assay shows the extreme sensitivity of axons to molecular gradients

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The production process introduced several errors into Fig. 3c. A minus sign was omitted from the negative value of “0.05” on the y-axis, and the label for the x-axis incorrectly stated the concentration as “(nM x 10⁻¹)”; it should read “(nM)”. Furthermore, the image quality of the micrographs in Fig. 3d–g was poor due to color conversion problems. The corrected Fig. 3 is shown below.

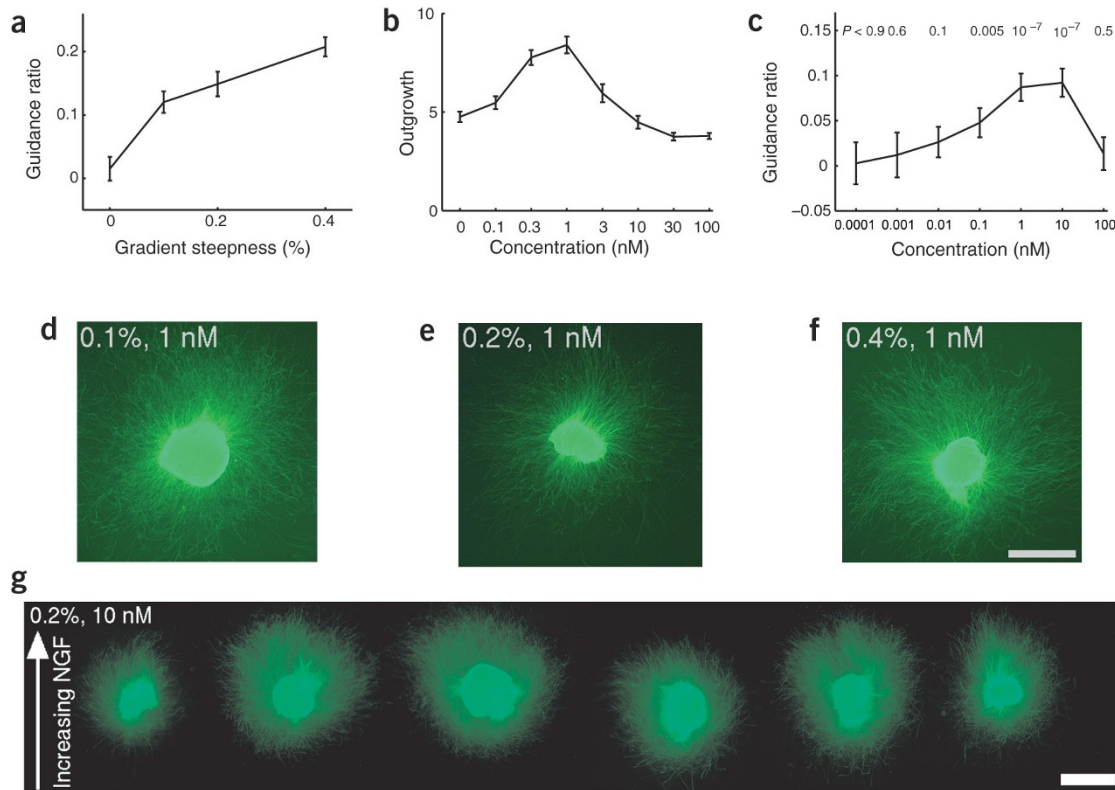


Figure 3 Guidance of DRG axons by NGF gradients. **(a)** Guidance ratio of DRG explants as a function of gradient steepness. Error bars are s.e.m. For $s = 0.1\%$, the guidance ratios were significantly different from zero ($P < 10^{-8}$), and 80% of explants (43 of 54) had positive guidance ratios. Responses for $s = 0.2\%$ and 0.4% were also significantly different ($P < 0.005$). For $s = 0.4\%$, 53 of 54 explants had positive guidance ratios (54 explants per condition pooled over three separate experiments; similar results were seen in each experiment). **(b)** Outgrowth in response to NGF after 36–40 h in culture, as measured by the number of bright pixels representing neurites, divided by the area of the explant (36 explants per condition pooled over three separate experiments). **(c)** Guidance as a function of absolute NGF concentration at the explants for $s = 0.2\%$. The probability that the mean guidance ratio is zero in each case is given above each data point (54–108 explants per condition pooled over six separate experiments). Although the 1 nM condition represents equivalent conditions to the 0.2% condition in **a**, the guidance ratios in these two cases are not exactly the same as they are derived from a different series of experiments. **(d–f)** Typical explants from experiment in **a** for $s = 0.1\%$, 0.2% and 0.4% , respectively (guidance ratios within 0.01, that is 5–10% of the mean). The NGF gradient points upwards. **(g)** Complete row of explants for one dish from experiment in **c**, $s = 0.2\%$, 10 nM. Clear turning of the neurites is apparent. Scale bars, 500 μm .