

## Figure A1.

### ***Cellular Distribution for Astrocytes and Macrophages in Spinal Cord Injured Tissue.***

The identification of individual cell populations resulted in a complex task, which is why we decided to use a quantification method that would best represent the cellular population of interest. **A-B)** Here we see that after SCI lesion the distribution of astrocytes (**A**) as compared to macrophages (**B**) varies, starting at the epicentre and spreading rostrally and caudally. This is why we chose to look at astrocyte population (GFAP<sup>+</sup>) at 3mm rostral and 3mm distal from the SCI site, since it is clear that at the lesion epicentre (yellow asterisk), these cells are absent (**A**). On the other hand, macrophage population (CD68<sup>+</sup>) is concentrated at the SCI epicentre (yellow asterisk) and sparsely distributed rostrally and distally. Therefore, these cells were quantified at the epicentre and to a distance of 1-2mm rostral/distal from the SCI site, knowing that at 5mm rostral/distal these cell numbers were reduced (**B**).

SCI = spinal cord injury

Scale bars 500um

**Figure A2.**

***Standard Curve for BDNF Serum Concentration (Equation 1).***

**A)** Upon reading the OD from the processed BDNF ELISA plates at 450nm, we plotted the known concentrations of BDNF on the X-axis and the corresponding OD on the Y-axis. This allowed us to determine the concentration of BDNF in our samples by drawing a line of best fit against the standard curve, resulting in the following equation ( $y = 0.003x + 0.059$ ). This equation was consequently used to calculate the BDNF concentration from the OD values from our collected samples.

OD = optical density, ELISA = enzyme linked immunosorbent assay,  
BDNF = brain derived neurotrophic factor

**Figure A3.**

***Presence of Macrophage Cells in Uninjured Contralateral Eye 7 Days Post CNS Lesion.***

**A)** Schematic illustration of a retinal flat-mount divided into four quadrants with the optic nerve head in the middle; **B-E)** Merged views showing macrophage cells (red, white arrows, CD68<sup>+</sup>) surrounded by astrocytes (green, GFAP<sup>+</sup>) in all four quadrants. This event of cellular infiltration was observed in the contralateral eye (i.e. uninjured side) within 7 days post ONC of the opposite (i.e. ipsilateral) optic nerve. Note that the shown illustration (A) was modified from Blair et al (2005, p885).

ONC = optic nerve crush

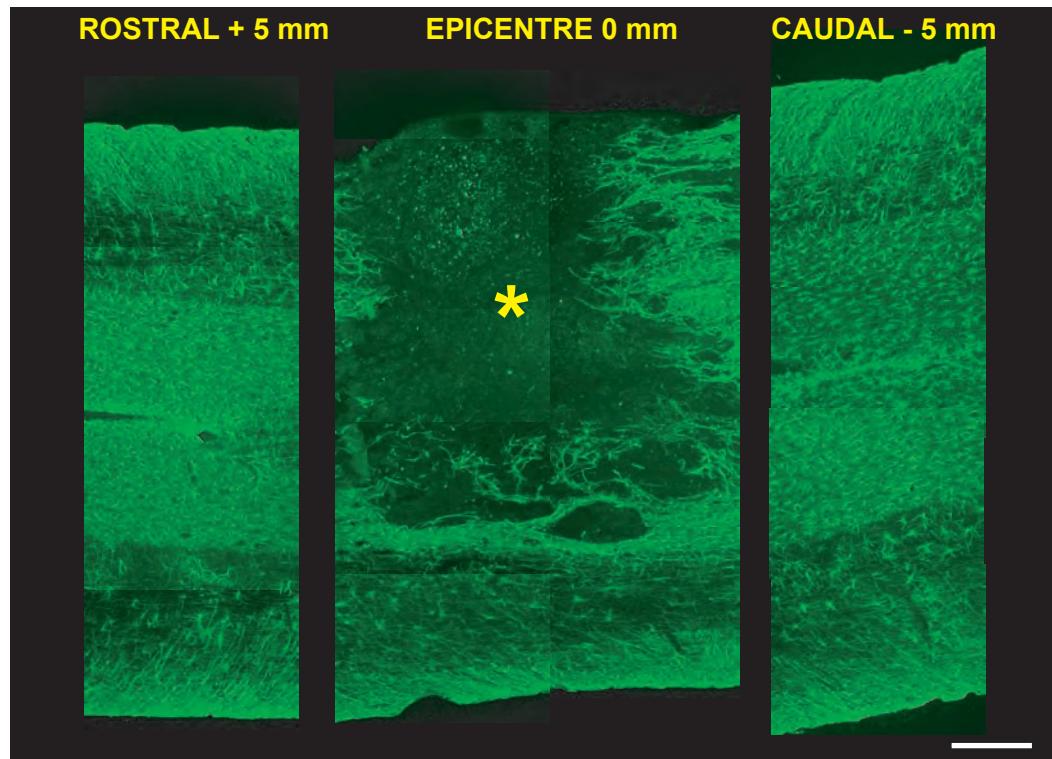
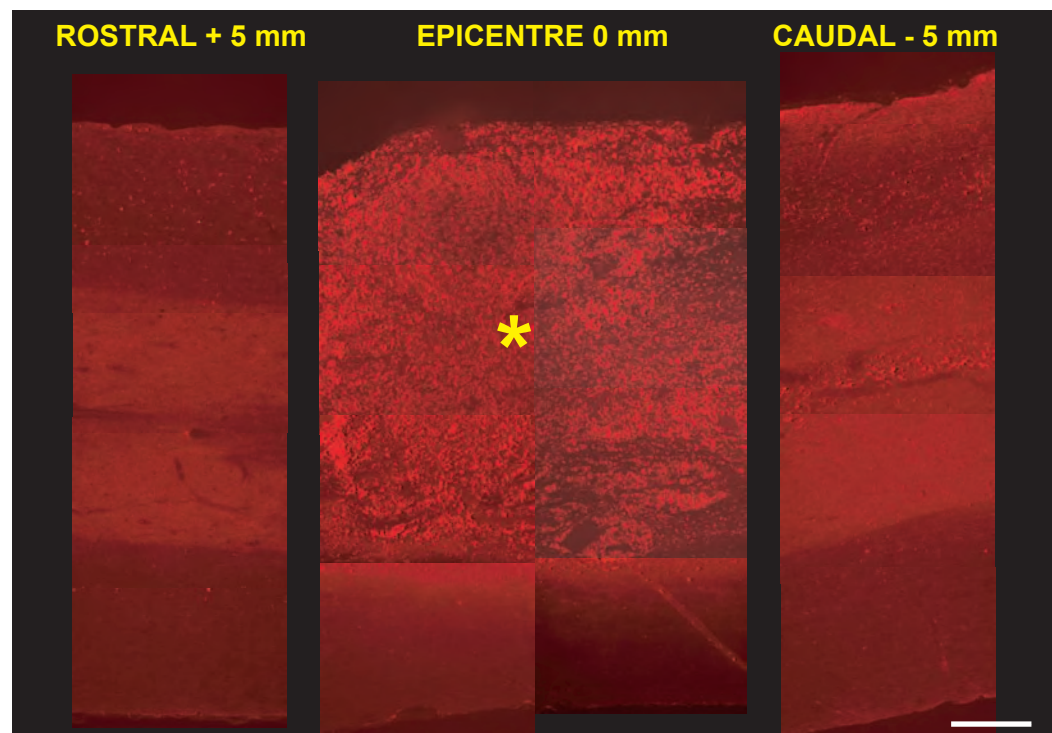
Scale bars 200um B and C, enlarged views D1 and E1 100um.

**Figure A4.**

***Standard Curve for BDNF Serum Concentration (Equation 2).***

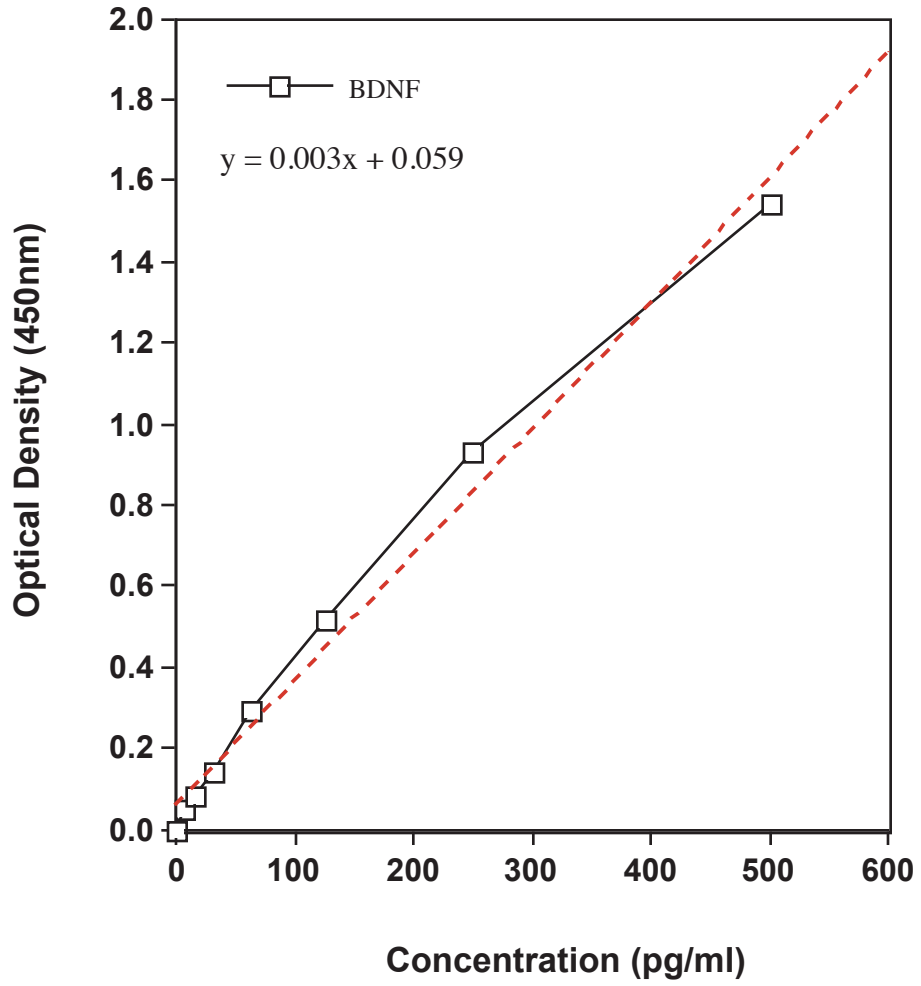
**A)** Upon reading the OD from the processed BDNF ELISA plates at 450nm, we plotted the known concentrations of BDNF on the X-axis and the corresponding OD on the Y-axis. This allowed us to determine the concentration of BDNF in our samples by drawing a line of best fit against the standard curve, resulting in the following equation ( $y = 0.004x + 0.177$ ). This equation was consequently used to calculate the BDNF concentration from the OD values from our collected samples.

OD = optical density, ELISA = enzyme linked immunosorbent assay,  
BDNF = brain derived neurotrophic factor

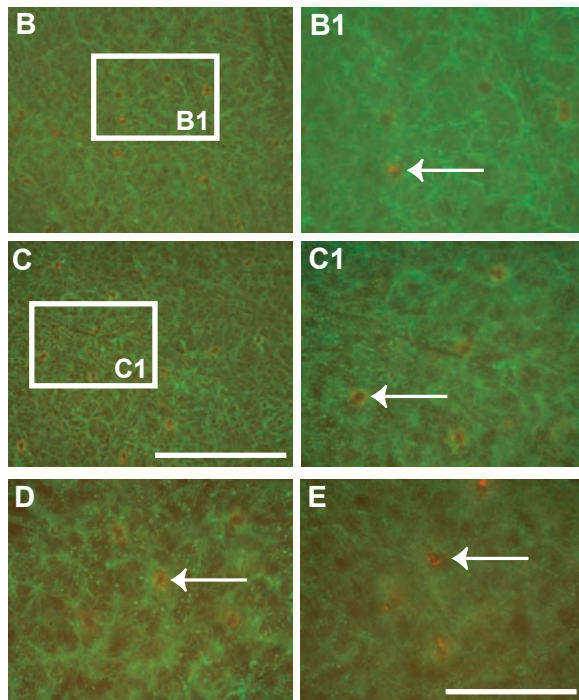
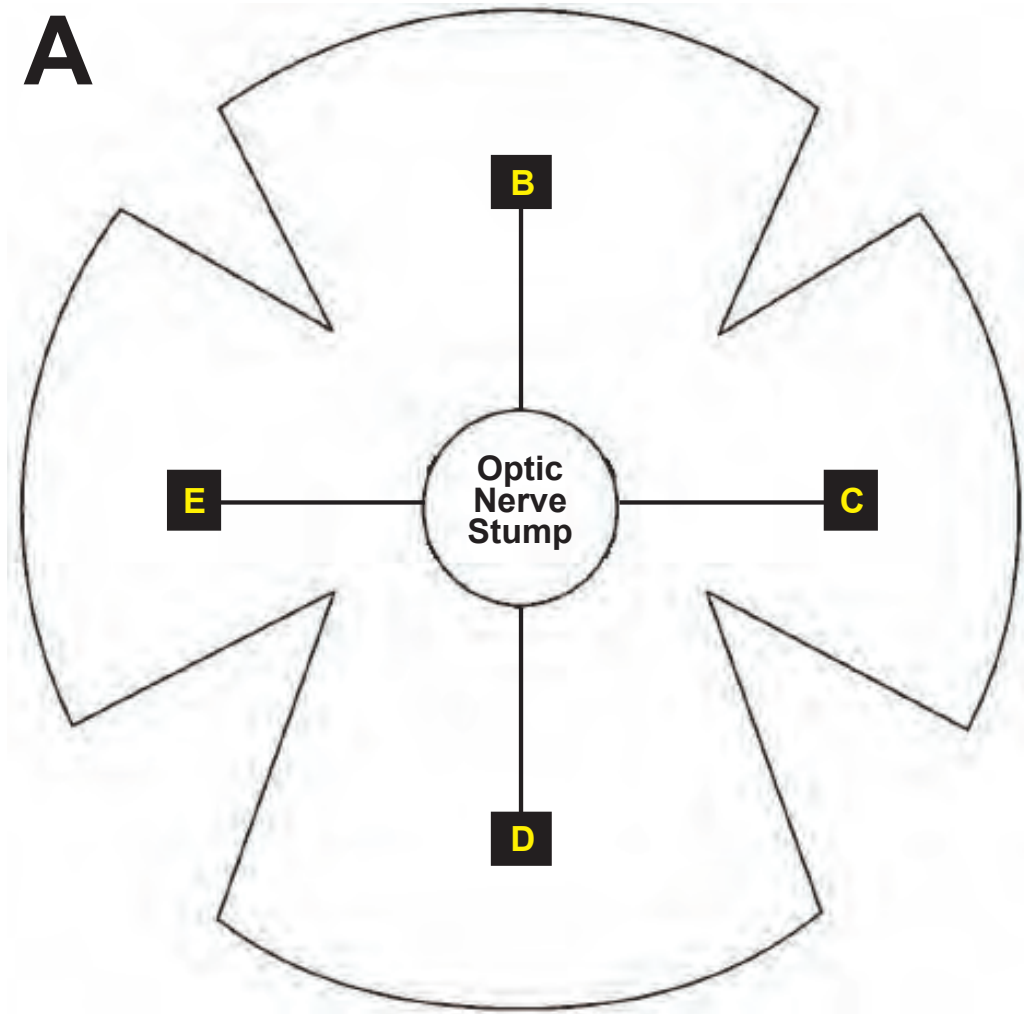
**A****ASTROCYTE Quantification Distribution****B****MACROPHAGE Quantification Distribution**

# A

## Standard Curve for BDNF Serum Concentration



**A**



# A

## Standard Curve for BDNF Serum Concentration

