Supporting Information for

Amyloid-β and proinflammatory cytokines utilize a prion protein-dependent pathway to activate NADPH oxidase and induce cofilin-actin rods in hippocampal neurons.

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**Supplemental Methods**

**Protein Assay:** Proteins were precipitated from SDS-lysis buffer extracts of cells and tissues using methanol/CHCl3 [1], re-suspended in SDS-PAGE sample loading buffer [2] and protein concentration determined by a filter paper dye-binding assay [3].

**Western Blots:** Proteins separated by SDS-PAGE on 12% isocratic polyacrylamide gels were transferred to nitrocellulase membrane, blocked and immunostained for NOX1 (Boster Biol. Techn. Co antibody PA1666 used at 500 ng/ml), NOX2 (BIOSS antibody bs-3889R used at 2ng/ml) and GAPDH (Millipore antibody MAB374 used at 167ng/ml). Secondary antibodies were labeled with DyLight (ThermoFischer) and blots were scanned using an Odyssey IR scanner (LiCor Instruments). The digitized image bands were quantified using ImageQuantTL software (GE Healthcare).

**DCF Fluorescence Assay:** The assays to measure DCF fluorescence produced by ROS in intact cells and in cell lysates have been described elsewhere [4].

**Supplemental References**

1. Wessel D, Flügge UI. (1984) A method for the quantitative recovery of protein in dilute solution in the presence of detergents and lipids*.* Anal Biochem 138: 141-143.

2. Laemmli UK. (1970) Cleavage of structural proteins during the assembly of the head of bacteriophage T4. Nature 227: 680-685.

3. Minamide LS, Bamburg JR. (1990) A filter paper dye-binding assay for quantitative determination of protein without interference from reducing agents or detergents. Anal Biochem 190: 66-70.

4. Kuhn TB. (2014) Oxygen radicals elicit paralysis and collapse of spinal neuron growth cones upon exposure to proinflammatory cytokines. Biomed Res Int (in press)