

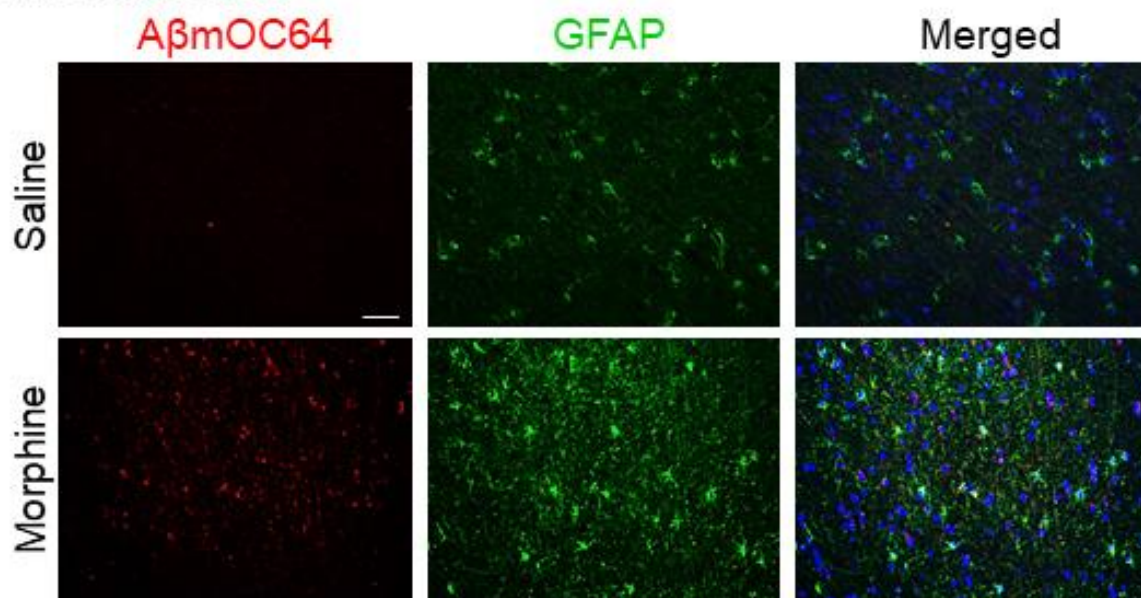
## SUPPLEMENTARY DATA

# **Astrocytes & Astrocyte derived Extracellular Vesicles in Morphine Induced Amyloidopathy: Implications for Cognitive Deficits in Opiate Abusers**

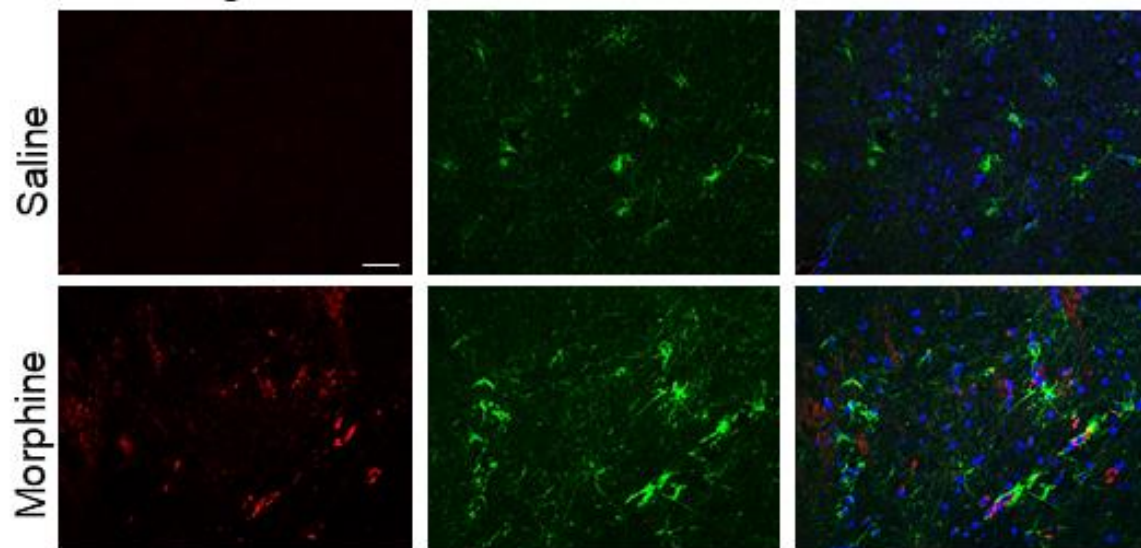
Susmita Sil\*, Seema Singh, Divya T. Chemparathy, Ernest T. Chivero, Lila Gordon, Shilpa Buch\*

## SUPPLEMENTARY DATA

### A. Frontal cortex



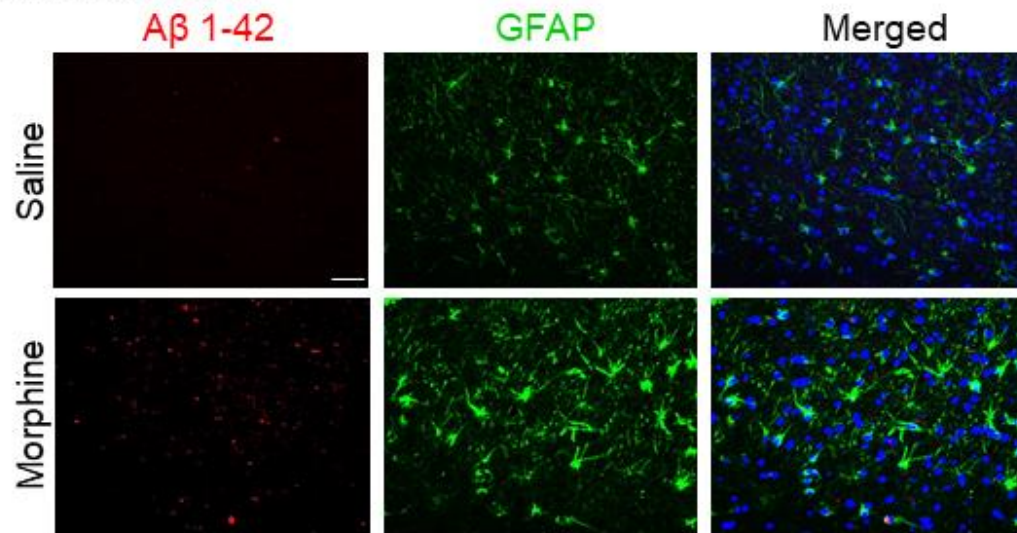
### B. Basal Ganglia



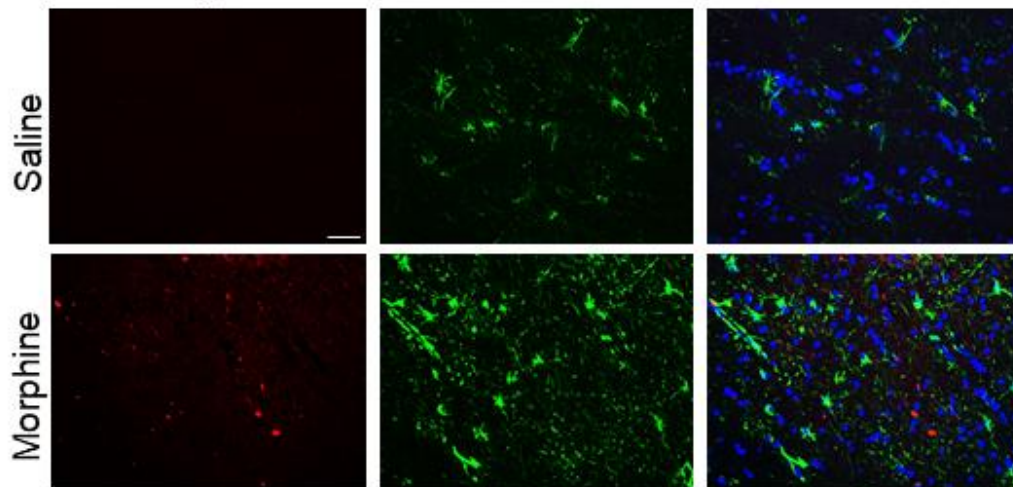
**Supplementary Figure 1. Expression of A $\beta$  mOC64 in the FC and BG of morphine-dependent macaques.** Representative immunohistochemistry photomicrographs showing differential expression of A $\beta$  mOC64 protein in GFAP+ astrocytes in morphine dependent macaque FCs (A) and BGs (B). Scale bar, 10  $\mu$ m.  $n= 4$  macaques/ group. Abbreviations: A $\beta$ - amyloid beta, GFAP- glial fibrillary protein.

## SUPPLEMENTARY DATA

### A. Frontal cortex

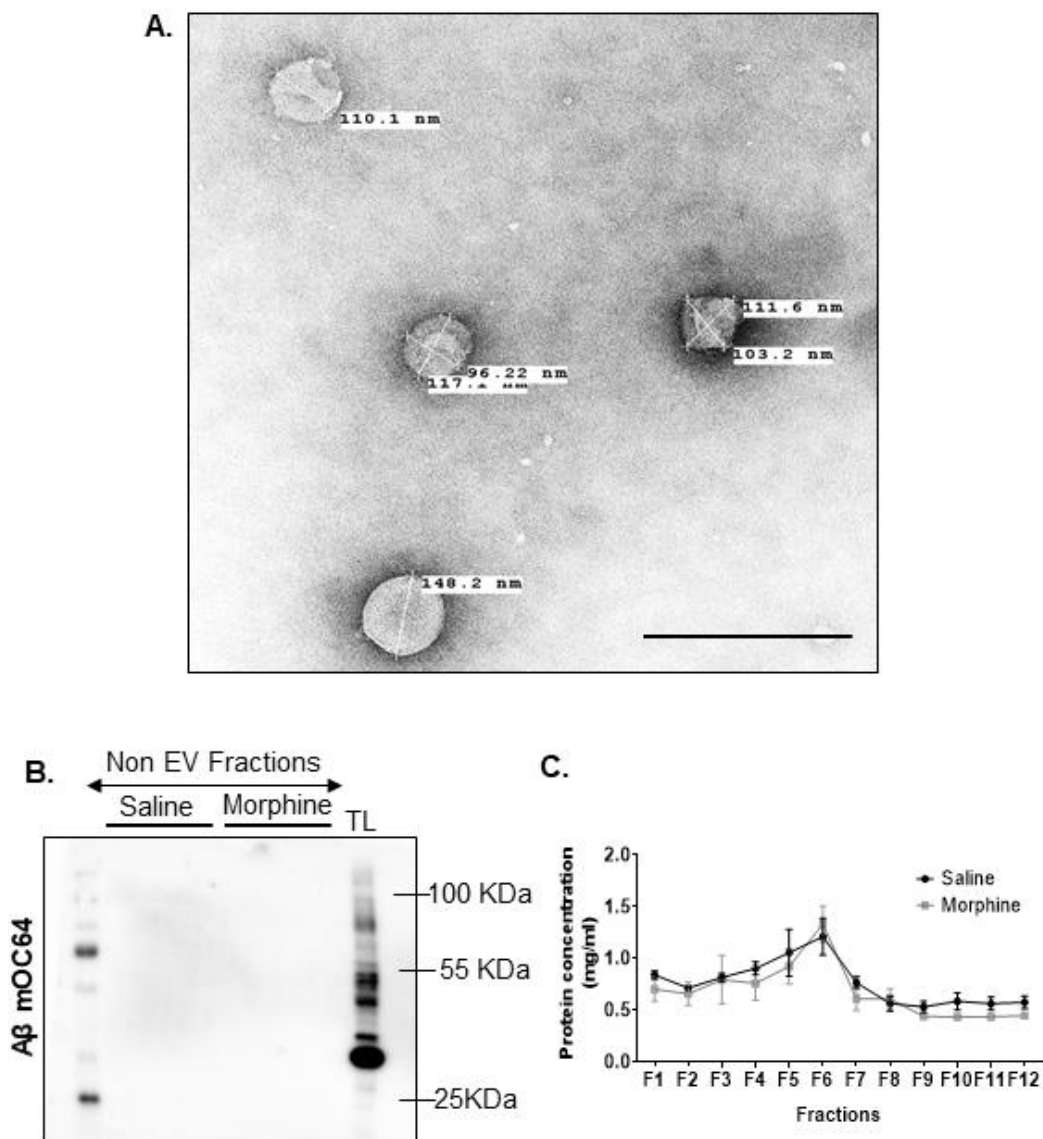


### B. Basal Ganglia



**Supplementary Figure 2. Expression of A $\beta$  1-42 in the FC of morphine-dependent macaques.** Representative immunohistochemistry photomicrographs showing differential expression of A $\beta$  mOC64 protein in GFAP<sup>+</sup> astrocytes in morphine dependent macaque FCs (A) and BGs (B). Scale bar, 10  $\mu$ m.  $n=4$  macaques/ group. Abbreviations: A $\beta$ -amyloid beta, GFAP- glial fibrillary acidic protein.

# SUPPLEMENTARY DATA



**Supplementary Figure 3. Characterization of brain-derived EVs from macaques.** (A) Topographic profiling of F4-F7 EVs using transmission electron microscopy (TEM) under tapping mode revealed a heterogeneous population of spherical particles. (B) Representative western blot images for A $\beta$ mOC64 from non-EV fractions from saline and morphine dependent macaques. (C) Protein concentration in EVs from F1-F12 assessed by ZetaView.  $n = 4$  macaques/group.