SUPPLEMENTARY MATERIAL

Unbiased cell-based screening in a neuronal cell model of Batten disease highlights an interaction between Ca^{2+} homeostasis, autophagy, and CLN3 function

Uma Chandrachud[1], Mathew W. Walker[2], Alexandra M. Simas[1], Sasja Heetveld[1], Anton Petcherski[1,3], Madeleine Klein[1], Hyejin Oh[1], Pavlina Wolf[1], Wen-Ning Zhao[1], Stephanie Norton[1], Stephen J. Haggarty[1], Emyr Lloyd-Evans[2], Susan L. Cotman[1]

[1]*Center for Human Genetic Research, Massachusetts General Hospital, Harvard Medical School, Boston, MA 02114 USA*

[2]*Sir Martin Evans Building, School of Biosciences, Cardiff University, Cardiff, CF10 3AX, UK*

[3]*NeuroToponomics Group, Center for Membrane Proteomics, Goethe Universität Frankfurt am Main, 60438, Frankfurt am Main, Germany*

*Running title: *Identification of autophagy modifiers in Batten disease*

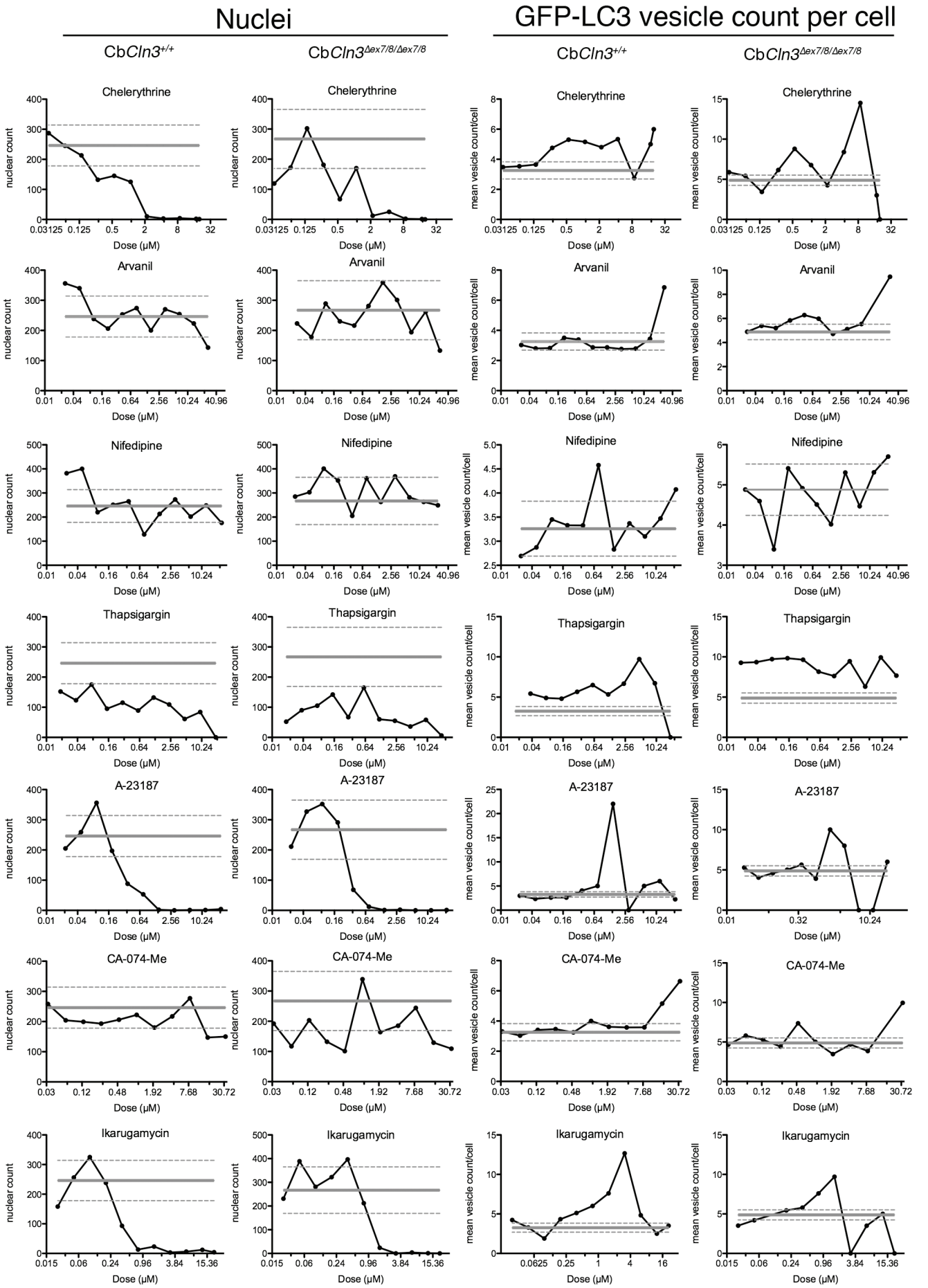
To whom correspondence should be addressed: Susan L. Cotman, Center for Human Genetic Research, Department of Neurology, 185 Cambridge St., Boston, MA, USA, Tel.: (617) 726-9180; Fax: (617) 643-3203; E-mail: cotman@helix.mgh.harvard.edu

LEGENDS TO SUPPLEMENTARY FIGURES:

Supplementary Figure 1: Follow-up dose response for hit compounds:

Left columns ('Nuclei'): Graphs of nuclear count (y-axis) for each follow-up dose (x-axis, μM) tested are shown in the left set of plots for the indicated compounds, which are provided as an indication of the relative toxicity following the compound dose-response experiment. Right columns ('GFP-LC3 vesicle count per cell'): Graphs of mean vesicle count/cell (y-axis) for each follow-up dose tested (x-axis, μM) are shown in the right set of plots for the indicated compounds. The gray line shown in each graph represents the mean for DMSO-treated wells, and the dashed lines represent ± two standard deviations from the mean.

Supplementary Figure 1



SUPPLEMENTARY TABLES and LEGENDS
Supplementary Tables 1 and 2 are uploaded as separate .xls (or .xlsx) files.

File name: Supplementary Table 1.xlsx
Supplementary Table 1. Hit list from primary GFP-LC3 screen run on duplicate plates of wildtype (Cb*Cln3*$^{+/+}$) and homozygous mutant (Cb*Cln3*$^{\Delta ex7/8/\Delta ex7/8}$) cells.
Predicted mechanism of action information was determined using the PubChem database (pubchem.ncbi.nlm.nih.gov) and/or Enzo Life Sciences (BIOMOL) supplier data (www.enzolifesciences.com).

File name: Supplementary Table 2.xls
Supplementary Table 2. All compounds primary screen data. Per plate z-scores are shown for each of the 320 compounds in the primary screen, for Cb*Cln3*$^{+/+}$ and for Cb*Cln3*$^{\Delta ex7/8/\Delta ex7/8}$ cells. The mean z-score for the duplicate plates is also shown for each compound in both the Cb*Cln3*$^{+/+}$ and for Cb*Cln3*$^{\Delta ex7/8/\Delta ex7/8}$ cells.