## Supplemental Figures:

Phenotypic profiling of mGlu<sub>7</sub> knockout mice reveals new implications for neurodevelopmental disorders

Nicole M. Fisher<sup>1,2</sup>, Robert W. Gould<sup>1,2,3</sup>, Rocco G. Gogliotti<sup>1,2</sup>, Annalise J. McDonald<sup>1,2</sup>, Hana Badivuku<sup>1,2</sup>, Susmita Chennareddy<sup>1,2</sup>, Aditi B. Buch<sup>1,2</sup>, Annah M. Moore<sup>1</sup>, Matthew T. Jenkins<sup>1,2</sup>, W. Hudson Robb<sup>1,2</sup>, Craig W. Lindsley<sup>1,2,4,5</sup>, Carrie K. Jones<sup>1,2,6</sup>, P. Jeffrey Conn<sup>1,2,5,6</sup>, Colleen M. Niswender<sup>1,2,5,6</sup>

## Affiliations:

<sup>1</sup>Department of Pharmacology, Vanderbilt University, Nashville, TN 37232, USA <sup>2</sup> Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University, Nashville, TN 37232, USA

<sup>3</sup>Current address: Department of Physiology and Pharmacology, Wake Forest University, Winston-Salem, NC 27109, USA

<sup>4</sup>Department of Chemistry, Vanderbilt University, Nashville, TN 37232, USA
<sup>5</sup>Vanderbilt Institute of Chemical Biology, Vanderbilt University, Nashville, TN 37232, USA
<sup>6</sup>Vanderbilt Kennedy Center, Vanderbilt University Medical Center, Nashville, TN 37232, USA

Corresponding Author:

E-mail: <u>Colleen.Niswender@vanderbilt.edu</u> Phone: 615-343-4303 Fax: 615-343-3088



Figure S1. (A) Distance traveled in open field assay. (B) Time spent in center of open field. For panels A-B, N= 16 *Grm7*<sup>+/+</sup> (9 female, 7 male), 24 *Grm7*<sup>+/-</sup> (15 female, 9 male), 20 *Grm7*<sup>-/-</sup> (13 female, 7 male). (C) Time spent in open arms of elevated plus maze. N= 17 *Grm7*<sup>+/+</sup> (9 female, 8 male), 25 *Grm7*<sup>+/-</sup> (15 female, 10 male), 23 *Grm7*<sup>-/-</sup> (13 female, 10 male). \*p<0.05.



Figure S2. Quantitative EEG of  $Grm7^{-/-}$  mice at 20 weeks of age during the light period (A-C) and dark period (D-F) analyzed for periods of wake, NREM sleep and REM sleep. N=9 female  $Grm7^{+/+}$ , 11 female  $Grm7^{-/-}$  mice.



Figure S3. Quantitative EEG analysis of frequency bands not shown in the main text. N=6 female  $Grm7^{+/+}$ , 7 female  $Grm7^{-/-}$  mice.