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Supplemental Information

Nucleus of the Solitary Tract

Serotonin 5-HT_{2C} Receptors Modulate Food Intake

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Supplemental Figures

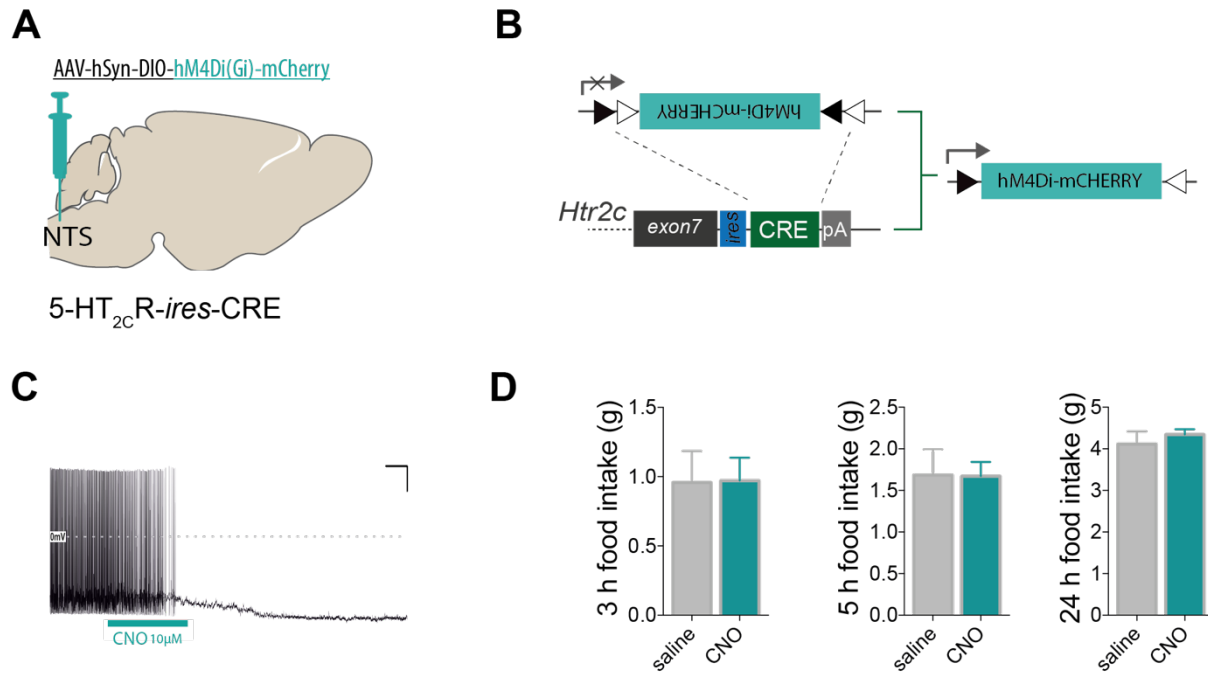


Figure S1, related to Figure 1. (A) Schematic of the strategy used to inhibit the activity of 5-HT_{2C}R-expressing neurons within the NTS: 5-HT_{2C}R^{CRE} mice were stereotaxically injected into the NTS with a Cre-dependent DREADD vector (AAV-hM4Di-mCherry). **(B)** 5-HT_{2C}R^{CRE} construct and Cre-mediated recombination of DREADD allele within the NTS produced 5-HT_{2C}R^{NTS}-hM4Di mice. **(C)** Representative example of electrophysiological recording of an isolated hM4i-transduced 5-HT_{2C}R-expressing neuron from the NTS of 5-HT_{2C}R^{NTS}-hM4Di mice illustrating that CNO (10 µM) caused a reduction in the membrane potential (n=5/5). **(D)** Chemogenetic inhibition of 5-HT_{2C}R^{NTS} neurons via CNO (1 mg/kg, i.p.) administration in 5-HT_{2C}R^{NTS}-hM4Di mice did not alter food intake compared to saline up to 24 hours post-treatment (n= 6-7; 3h: t(11)=0.044, p=0.965; 5h: t(11)=0.038, p=0.970; 24h: t(11)=0.642, p=0.533). Data are presented as mean±SEM.

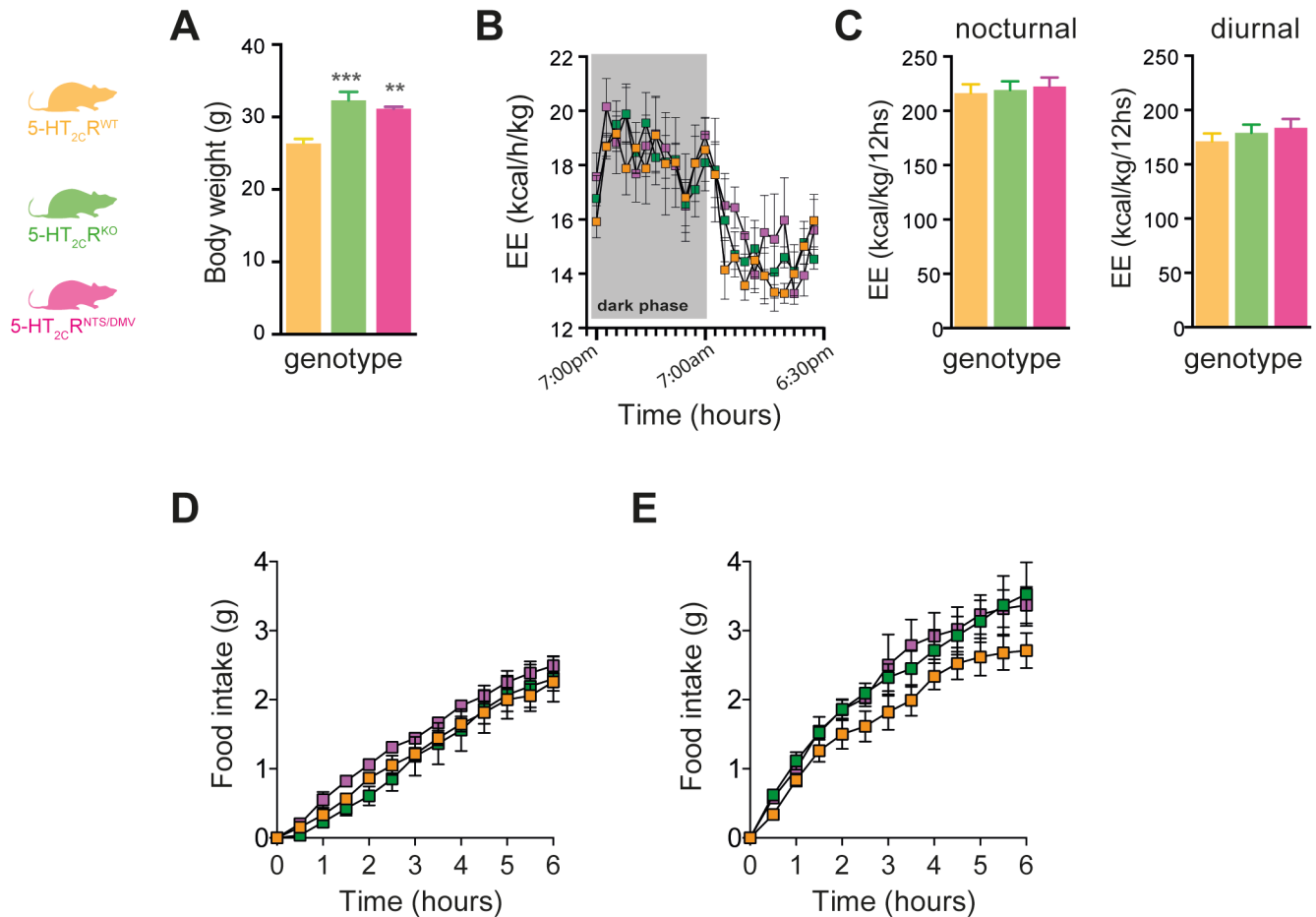


Figure S2, related to Figure 2. (A) Body weight of 4 month old male wild type ($5-HT_{2C}R^{WT}$), *loxtb5-HT_{2C}R* null mice ($5-HT_{2C}R^{KO}$) and *loxtb5-HT_{2C}R* null mice with 5-HT_{2C}R_s exclusively restored within the NTS/DMV following stereotaxic delivery of AAV-hSyn-Cre-mCherry into the NTS/DMV ($5-HT_{2C}R^{NTS/DMV}$) (n=5-6 per group, $F_{2,16} = 14.40$, $p = 0.0003$). (B) Representative recording of circadian energy expenditure (EE) measured by indirect calorimetry illustrating no effect of genotype on EE (kcal/h/kg) during the dark or light phase of the daily cycle in $5-HT_{2C}R^{WT}$ (n=5), $5-HT_{2C}R^{KO}$ (n=5) or $5-HT_{2C}R^{NTS/DMV}$ (n=6) mice (Effect of genotype $F_{2,13} = 0.26$, $p = 0.7739$; effect of time $F_{23,299} = 15.56$, $p < 0.001$; interaction $F_{46,299} = 0.66$, $p = 0.9544$); (C) Data expressed as cumulative nocturnal and diurnal EE also illustrate no differences by genotype in EE. (D) Cumulative *ad libitum* dark cycle food intake illustrating no differences by genotype. (E) Cumulative light cycle food intake after an overnight fast illustrating no significant differences by genotype. Sidak's post hoc comparisons ** $p < 0.01$, *** $p < 0.001$ compared to $5-HT_{2C}R^{WT}$ mice. Data are presented as mean \pm SEM.