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Title	Repeated binge drinking causes plastic increases in central amygdala corticotropin releasing factor neurons in vivo
Running Title	Ethanol increases CeA CRF neurons
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Authorship	Yes
Abstract	Binge ethanol drinking is an increasingly problematic component of alcohol use disorder costing the United States approximately over $150 billion every year. Binge drinking likely causes progressive neuroplasticity alterations in numerous brain regions. However, the precise nature or mechanisms by which they alter binge drinking have not yet been determined. Corticotropin releasing factor (CRF) neurons in the central amygdala (CeA) are thought to modulate binge drinking, but the precise circuit mechanisms remain poorly understood. Here, for the first time we combined optogenetics with in vivo electrophysiology to identify and record from CeA CRF neurons in mice during a repeated binge drinking task. First, we found that CeA CRF neurons were more excitable than CeA non CRF neurons in our binge drinking. We also observed that CeA CRF neurons displayed a heterogeneous spike profile in response to a lick of ethanol including lick predictive, lick excited, lick inhibited, and no response. Lick predictive CeA CRF neurons could be further grouped into 2 classes based on their activity in response to a binge alcohol session, with the majority showing increases in firing and bursting. Furthermore, lick predictive CeA CRF neurons increased their activity over repeated binge drinking sessions, indicating possible synaptic plasticity. These data indicate that microcircuits within the CeA CRF system as well as their projections may modulate specific components of binge drinking.
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Clinical Trial	No
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Social Media	If you would like to supply our social media editor with a "tweet", which may or may not be used or edited at the discretion of the journal, please insert the message here (280 characters): Please enter the Twitter handle of you and/or your co-authors.:

Manuscript Items

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2. Merged file containing manuscript text, all figure files, and all table files. (last updated: 11/27/2018 11:15:22) PDF (1634KB)
    a. Article File (last updated: 11/27/2018 10:45:19) PDF (182KB)
    b. Figure 1 (last updated: 11/27/2018 10:46:43) PDF (631KB)
    c. Figure 2 (last updated: 11/27/2018 10:46:43) PDF (351KB)
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