

# Differentiating technical and biological variation in hippocampal gene expression

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# Graphical Abstract

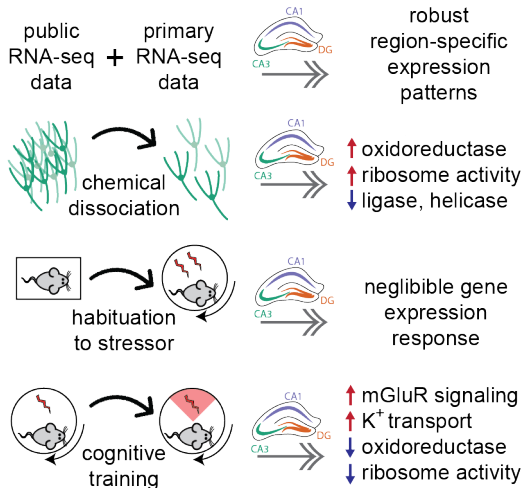


Figure 1

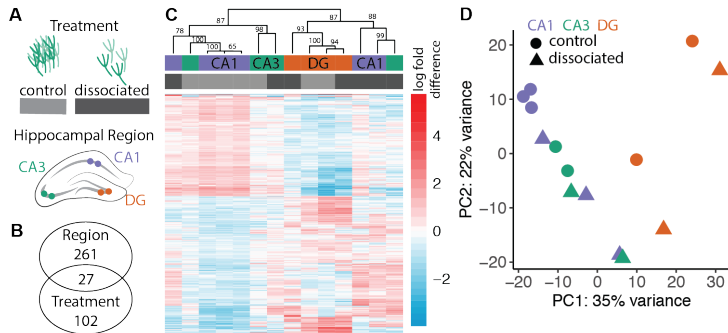


Figure 2

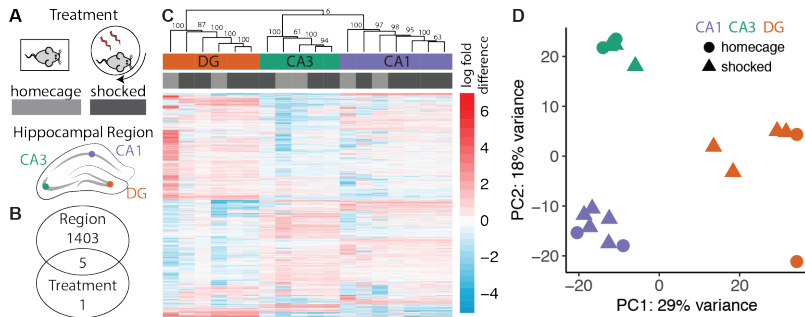
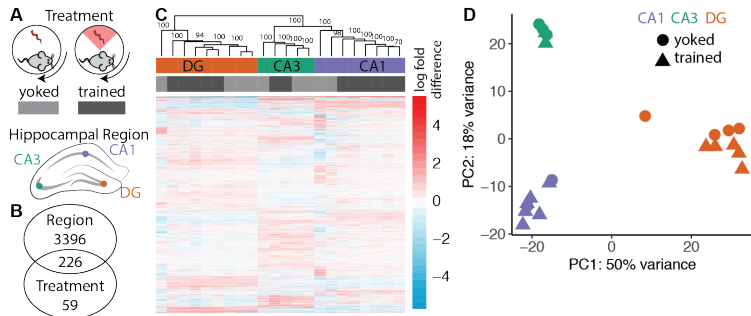
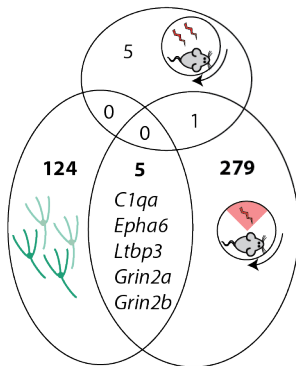


Figure 3



# Figure 4

## A. Number of genes influenced by behavioral and technical manipulations



## B. Dissociation-induced molecular functions

**9/244 ligase, forming carbon–nitrogen bonds**

**16/428 ligase**

*95/1066 receptor binding*

**60/318 structural molecule**

**40/87 structural constituent of ribosome**

*14/55 rRNA binding*

*2/84 ATP–dependent helicase*

*4/126 helicase*

*12/62 oxidoreductase, acting on NAD(P)H*

**43/589 oxidoreductase**



$p < 1e-05$

$p < 1e-04$

$p < 3e-04$

UP

Down

## C. Cognitive training -induced molecular functions

*122/801 poly(A) RNA binding*

**14/87 structural constituent of ribosome**

*6/36 oxidoreductase, acting on NAD(P)H, quinone*

*9/25 glutamate receptor*

*94/790 signal transducer*

*77/666 receptor*

*29/121 potassium ion transmembrane transporter*

*125/880 transporter*

*109/727 transmembrane transporter*



$p < 1e-05$

$p < 1e-04$

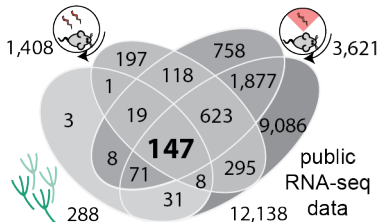
$p < 0.0011$

UP

Down

# Figure 5

## A. Shared genes with region-specific expression



## B. Robust region-specific molecular functions

*2/7 calcium:cation antiporter*  
*6/99 calcium ion transmembrane transporter*  
*6/125 divalent inorganic cation transmembrane transp*  
*2/5 calcium, potassium:sodium antiporter*  
*6/120 potassium ion transmembrane transporter*  
**14/361 calcium ion binding**  
*6/112 ligand-gated channel*  
*10/311 passive transmembrane transporter*  
*4/26 calcium channel regulator*  
*3/24 proteoglycan binding*  
*5/74 Rho GTPase binding*



$p < 0.05$   
 $p < 0.1$   
 $p < 0.24$