# Main functions from overrepresentation analysis plotted by tissue

### Spleen **FUNCTION** ADJ\_P\_VALUE lymphocyte activation $1 \times 10^{-65}$ $3 \times 10^{-56}$ T cell activation $4 \times 10^{-53}$ adaptive immune response $5 \times 10^{-50}$ immune effector process $8 \times 10^{-50}$ positive regulation of immune response regulation of cell activation $3 \times 10^{-49}$ regulation of leukocyte activation $4 \times 10^{-49}$ $8 \times 10^{-48}$ regulation of lymphocyte activation $2 \times 10^{-42}$ leukocyte cell-cell adhesion immune response-regulating signaling pathway $1 \times 10^{-41}$

# Α

### Heart **FUNCTION** ADJ\_P\_VALUE $3 \times 10^{-27}$ muscle cell development $1 \times 10^{-26}$ muscle structure development $2 \times 10^{-24}$ myofibril assembly $2 \times 10^{-24}$ striated muscle cell development $3 \times 10^{-24}$ muscle tissue development $3 \times 10^{-24}$ cardiac muscle tissue development muscle system process $3 \times 10^{-24}$ $2 \times 10^{-23}$ striated muscle tissue development $5 \times 10^{-23}$ muscle cell differentiation

# C

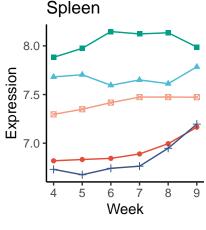
heart contraction

### Muscle - Skeletal **FUNCTION** ADJ\_P\_VALUE $7 \times 10^{-29}$ muscle structure development $8 \times 10^{-27}$ muscle system process $5 \times 10^{-25}$ muscle organ development muscle cell development $1 \times 10^{-21}$ $1 \times 10^{-21}$ muscle contraction $4 \times 10^{-20}$ muscle cell differentiation striated muscle cell differentiation $4 \times 10^{-19}$ $3 \times 10^{-18}$ myofibril assembly $3 \times 10^{-18}$ striated muscle cell development striated muscle contraction $1 \times 10^{-16}$

Ε

G

Storracti	
FUNCTION	ADJ_P_VALUE
digestion	1 × 10 <sup>-4</sup>
regulation of hormone levels	$6 \times 10^{-4}$
gastric acid secretion	$2 \times 10^{-3}$
peptide hormone secretion	$2 \times 10^{-3}$
peptide transport	$2 \times 10^{-3}$
peptide secretion	$3 \times 10^{-3}$
digestive system process	$6 \times 10^{-3}$
amide transport	$6 \times 10^{-3}$
hormone transport	$6 \times 10^{-3}$
hormone secretion	$6 \times 10^{-3}$



## **Function**

8.5

8.0

7.8

7.6

7.4

7.2

7.0

Function

Stomach

5

**Function** digestion

Week

peptide hormone secretion - regulation of hormone levels

8.50

8.25

7.50

Expression 8.00

Expression

Expression

 $1 \times 10^{-22}$ 

- adaptive immune response
- immune effector process

heart contraction muscle cell development

myofibril assembly

muscle structure development

Muscle - Skeletal

8

Week

muscle cell development

muscle system process

muscle structure development

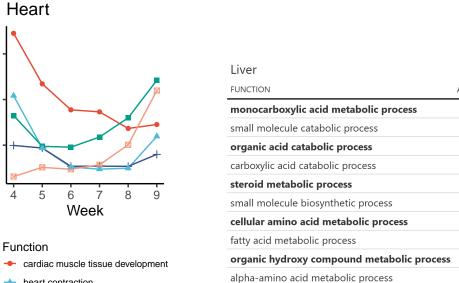
striated muscle cell differentiation

muscle contraction

- lymphocyte activation
- positive regulation of immune response
- T cell activation

Brain	
FUNCTION	ADJ_P_VALUE
synaptic signaling	9 × 10 <sup>-43</sup>
trans-synaptic signaling	9 × 10 <sup>-43</sup>
chemical synaptic transmission	9 × 10 <sup>-43</sup>
anterograde trans-synaptic signaling	9 × 10 <sup>-43</sup>
modulation of chemical synaptic transmission	9 × 10 <sup>-25</sup>
regulation of trans-synaptic signaling	9 × 10 <sup>-25</sup>
neuron projection morphogenesis	$2 \times 10^{-18}$
cell projection morphogenesis	$8 \times 10^{-18}$
plasma membrane bounded cell projection morphogenesis	2 × 10 <sup>-17</sup>
cell part morphogenesis	2 × 10 <sup>-17</sup>



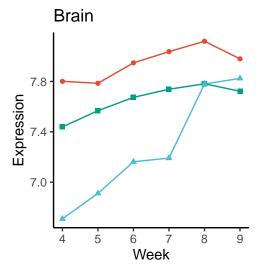


## D

Testis	
FUNCTION	ADJ_P_VALUE
male gamete generation	$1 \times 10^{-35}$
spermatogenesis	$3 \times 10^{-34}$
microtubule-based movement	$2 \times 10^{-26}$
cilium organization	$2 \times 10^{-26}$
cilium assembly	$2 \times 10^{-23}$
microtubule cytoskeleton organization	$2 \times 10^{-23}$
meiotic cell cycle	$2 \times 10^{-23}$
cilium movement	$3 \times 10^{-20}$
nuclear division	$1 \times 10^{-18}$
meiotic cell cycle process	$2 \times 10^{-18}$

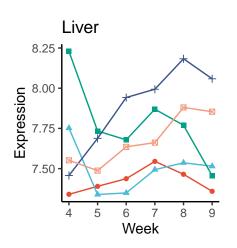


Skin	
FUNCTION	ADJ_P_VALUE
epidermis development	2 × 10 <sup>-21</sup>
skin development	9 × 10 <sup>-21</sup>
keratinization	$6 \times 10^{-17}$
keratinocyte differentiation	$2 \times 10^{-14}$
epidermal cell differentiation	$1 \times 10^{-10}$
intermediate filament cytoskeleton organization	9 × 10 <sup>-10</sup>
intermediate filament-based process	$1 \times 10^{-9}$
intermediate filament organization	$6 \times 10^{-9}$
regulation of water loss via skin	$2 \times 10^{-8}$
establishment of skin barrier	$1 \times 10^{-7}$



### Function

- modulation of chemical synaptic transmission
- neuron projection morphogenesis
- synaptic signaling



### Function

 $7 \times 10^{-51}$ 

 $7 \times 10^{-39}$ 

 $4 \times 10^{-36}$ 

 $2 \times 10^{-35}$ 

 $7 \times 10^{-33}$ 

 $4 \times 10^{-31}$ 

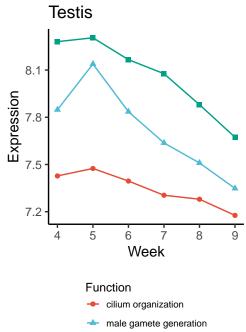
 $1 \times 10^{-28}$ 

 $6 \times 10^{-28}$ 

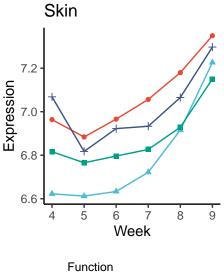
 $9 \times 10^{-28}$ 

 $3 \times 10^{-27}$ 

- cellular amino acid metabolic process
  - monocarboxylic acid metabolic process
- organic acid catabolic process
  - organic hydroxy compound metabolic process
- steroid metabolic process



meiotic cell cycle



# - epidermis development

keratinization

+ skin development

keratinocyte differentiation

Н

9