

# main

August 31, 2021

## 1 Heatmap of sharing

```
[1]: import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from rpy2.robjects import r, pandas2ri
```

```
[2]: pandas2ri.activate()
```

### 1.1 Sign match only

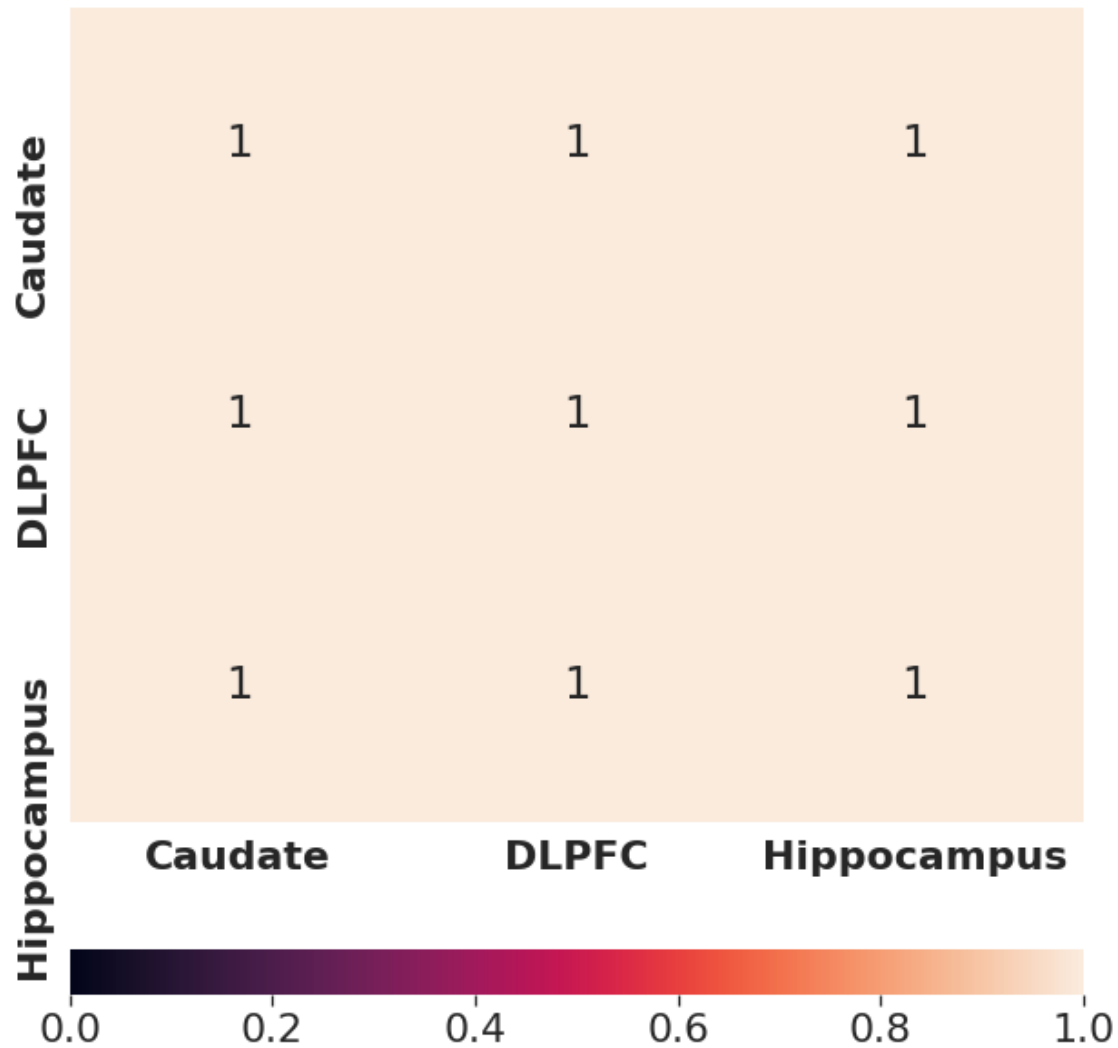
#### 1.1.1 Genes

```
[3]: mat = r('load("../_m/genes/mashr_meta_results.RData"); mashr::
  ↳get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[3]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.0	1.0	1.0
DLPFC	1.0	1.0	1.0
Hippocampus	1.0	1.0	1.0

```
[4]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_gene.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_gene.png")
```



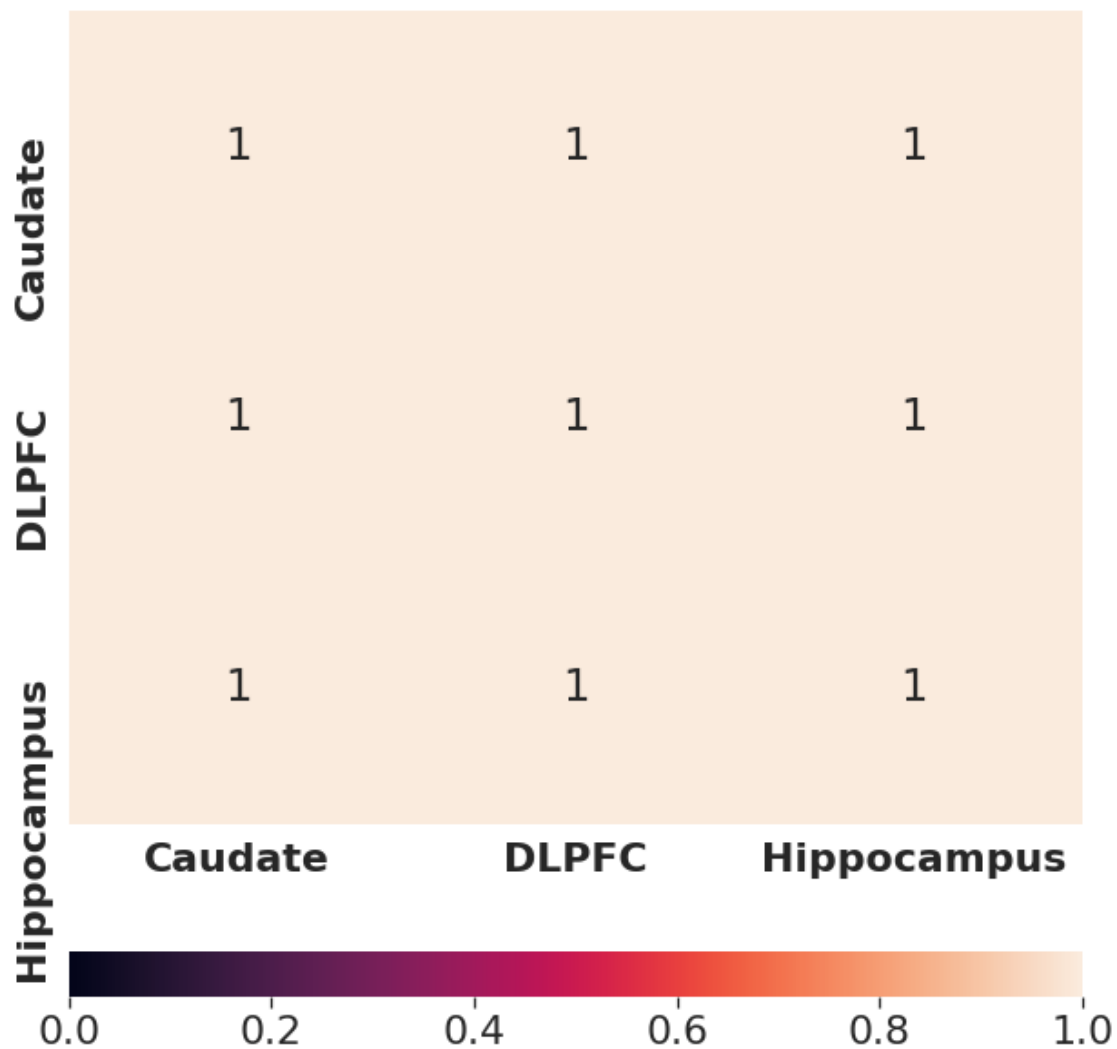
### 1.1.2 Transcripts

```
[5]: mat = r('load("../_m/transcripts/mashr_meta_results.RData"); mashr::
  ↳get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[5]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.998077	1.0
DLPFC	0.998077	1.000000	1.0
Hippocampus	1.000000	1.000000	1.0

```
[6]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_tx.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_tx.png")
```



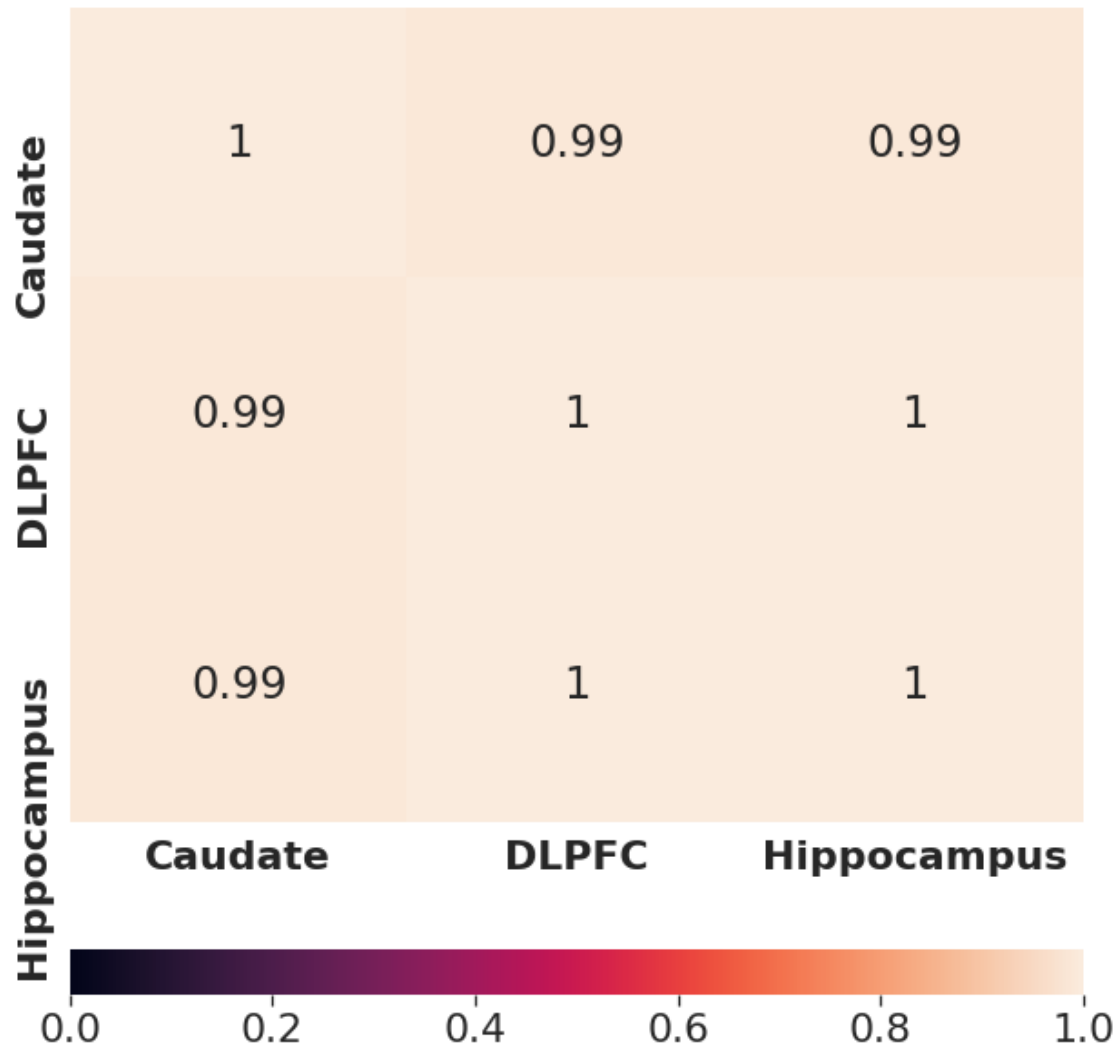
### 1.1.3 Exons

```
[7]: mat = r(''load("../../_m/exons/mashr_meta_results.RData"); mashr::  
  ↳get_pairwise_sharing(m2, factor=0)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[7]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.989175	0.990476
DLPFC	0.989175	1.000000	1.000000
Hippocampus	0.990476	1.000000	1.000000

```
[8]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_exon.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_exon.png")
```



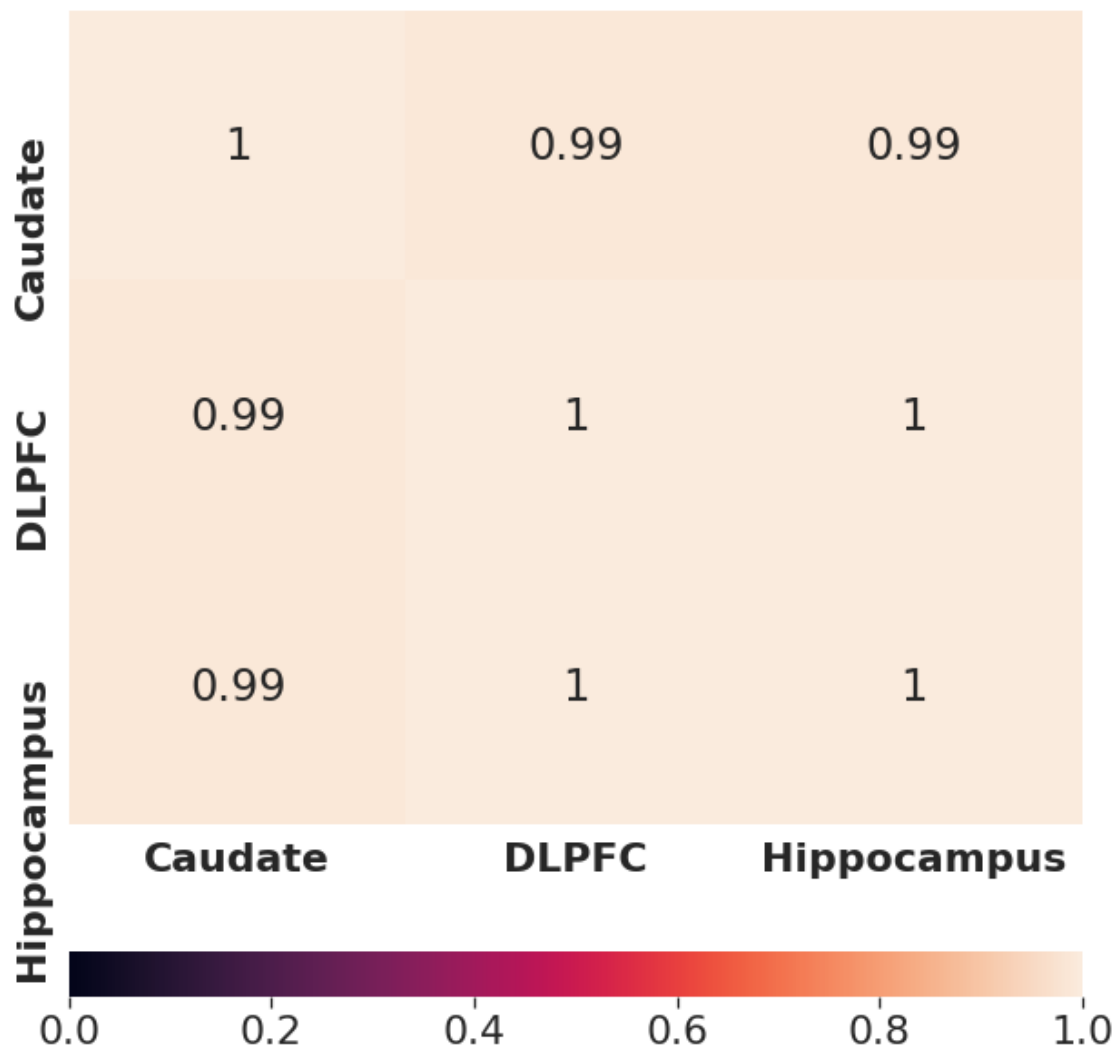
#### 1.1.4 Junctions

```
[9]: mat = r('load("../_m/junctions/mashr_meta_results.RData"); mashr::
      ↪get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[9]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.991266	0.991228
DLPFC	0.991266	1.000000	1.000000
Hippocampus	0.991228	1.000000	1.000000

```
[10]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_jxn.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_jxn.png")
```



## 1.2 Factor 0.5

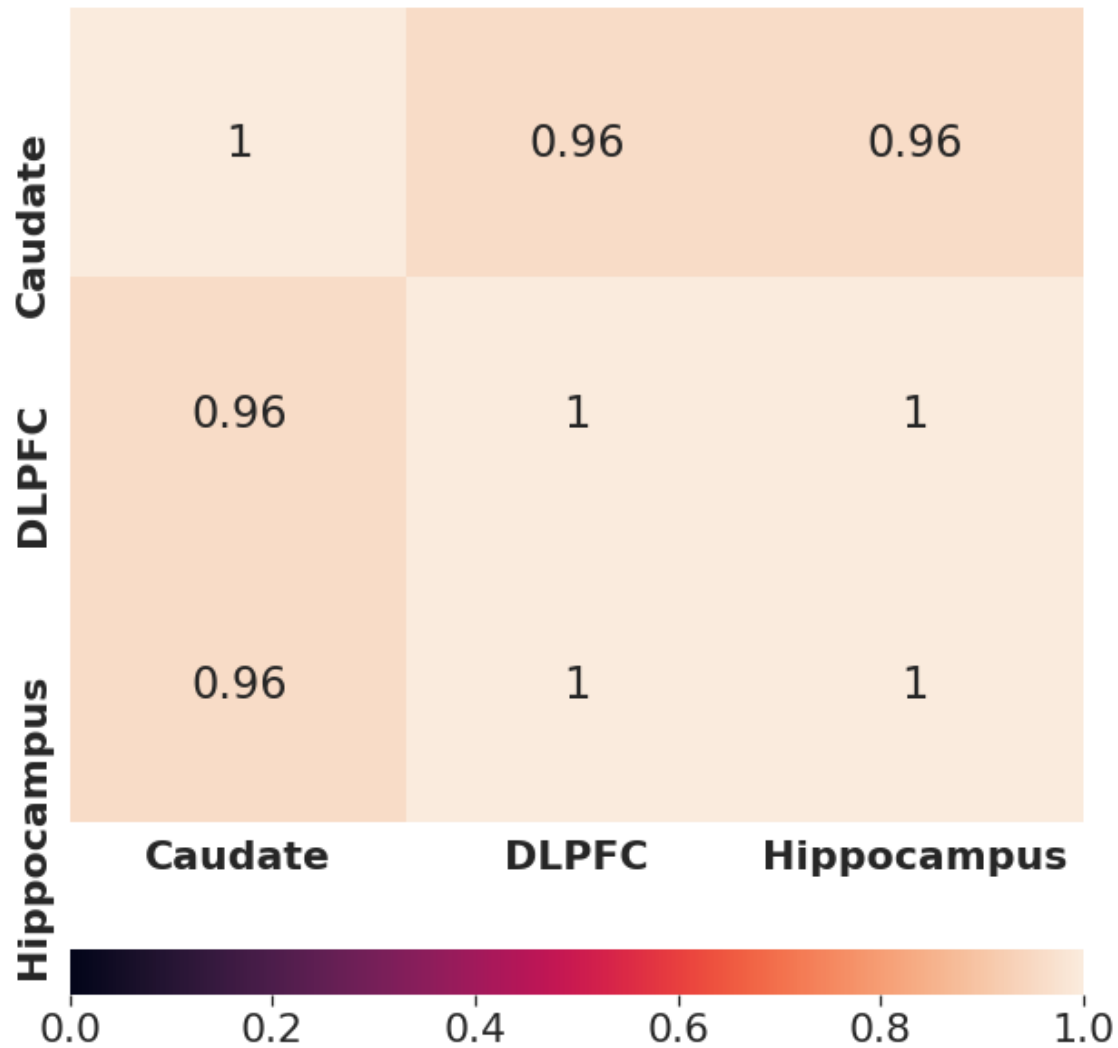
### 1.2.1 Genes

```
[11]: mat = r(''load("../_m/genes/mashr_meta_results.RData"); mashr::  
  ↳get_pairwise_sharing(m2)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[11]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.960784	0.960784
DLPFC	0.960784	1.000000	1.000000
Hippocampus	0.960784	1.000000	1.000000

```
[12]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_gene.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_gene.png")
```



### 1.2.2 Transcripts

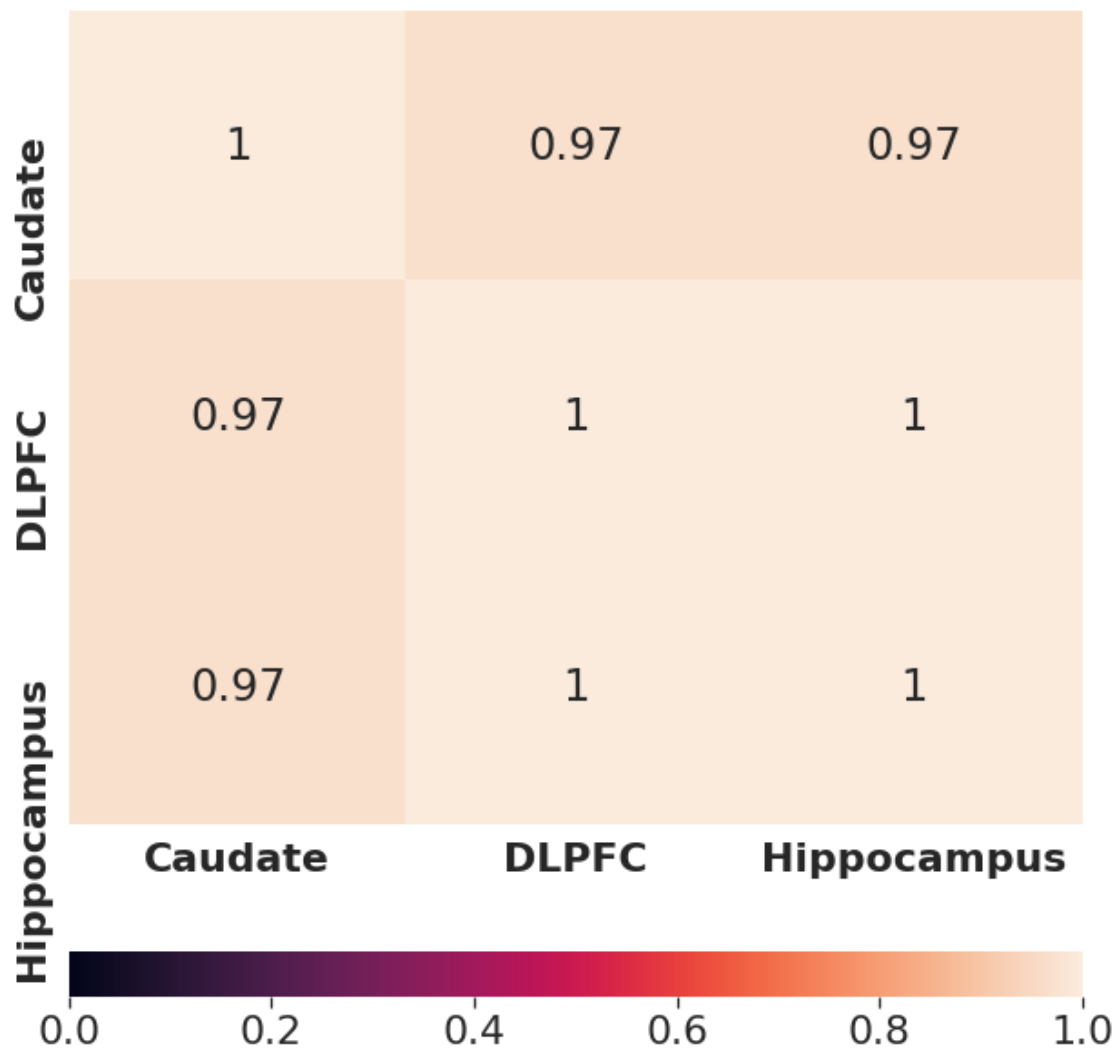
```
[13]: mat = r('load("../_m/transcripts/mashr_meta_results.RData"); mashr::
  ↳get_pairwise_sharing(m2)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[13]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.971154	0.969231
DLPFC	0.971154	1.000000	1.000000
Hippocampus	0.969231	1.000000	1.000000



```
[14]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_tx.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_tx.png")
```



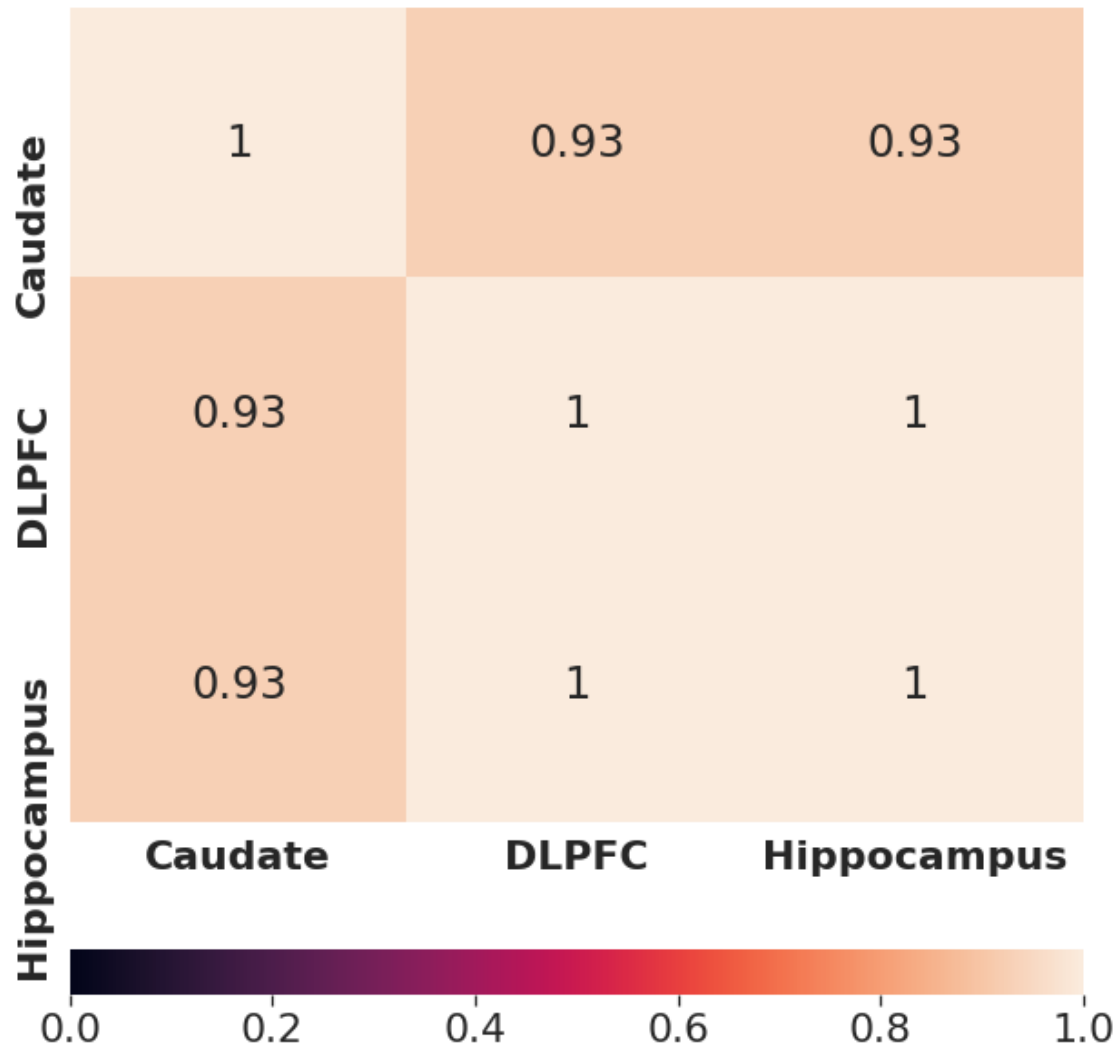
### 1.2.3 Exons

```
[15]: mat = r(''load("../../_m/exons/mashr_meta_results.RData"); mashr::  
      ↪get_pairwise_sharing(m2)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[15]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.929635	0.927891
DLPFC	0.929635	1.000000	0.998192
Hippocampus	0.927891	0.998192	1.000000

```
[16]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_exon.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_exon.png")
```



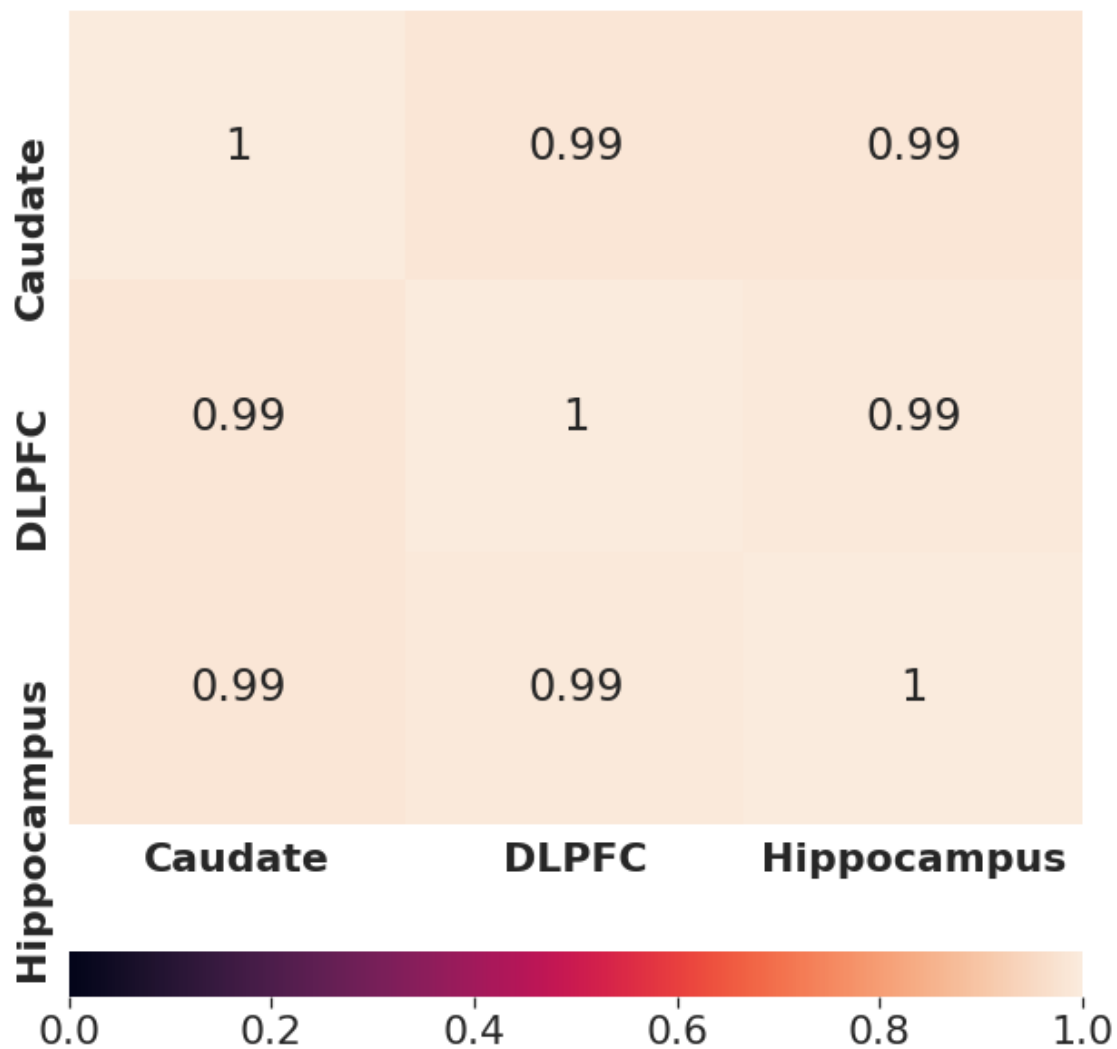
#### 1.2.4 Junctions

```
[17]: mat = r('load("../_m/junctions/mashr_meta_results.RData"); mashr::
      ↪get_pairwise_sharing(m2)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[17]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.9869	0.986842
DLPFC	0.986900	1.0000	0.995000
Hippocampus	0.986842	0.9950	1.000000

```
[18]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_jxn.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_jxn.png")
```



```
[ ]:
```