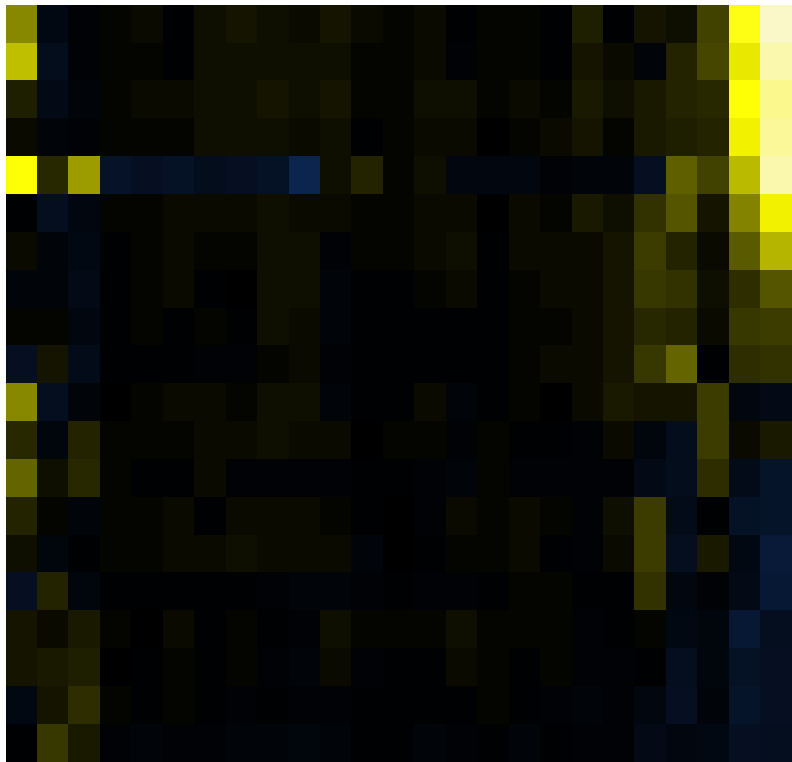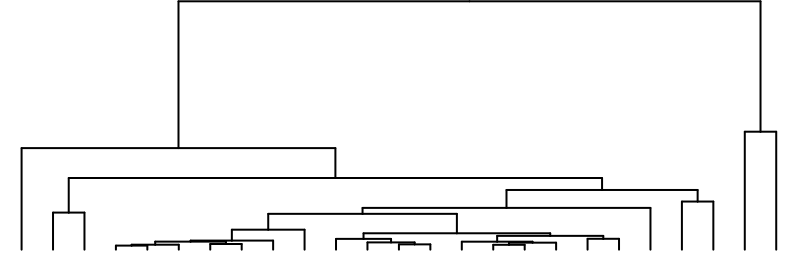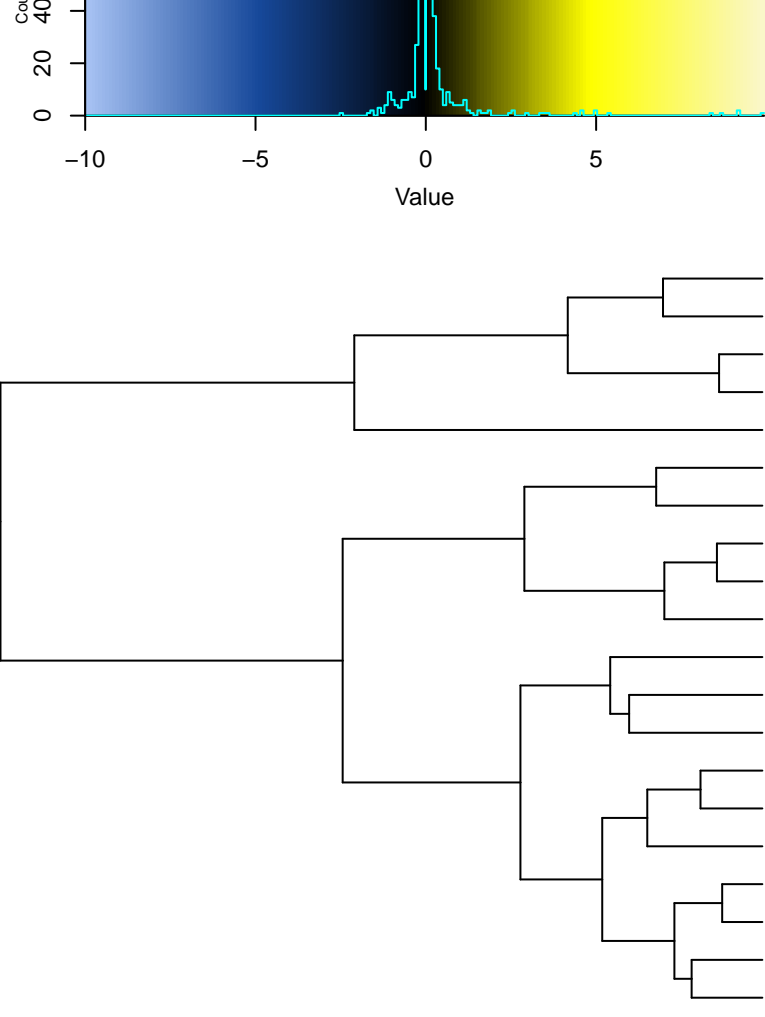**MEM heatmap**

Color Key and Histogram

6 : UP CD73+10 CD4+5 CCR7+3 CD38+1 T−bet+1 • DN FoxP3−1

4 : UP CD73+9 CCR7+4 CD4+4 CD45RA+1 CD38+1 • DN FoxP3−1

7 : UP CD73+8 CD4+5 CD45RA+1 CD38+1 CCR7+1 • DN FoxP3−1

8 : UP CD73+9 CD4+5 CD45RA+1 CD38+1 • DN None

1 : UP CD73+9 CCR7+5 CD4+4 CXCR5+3 CD45RA+2 dump+1 CD38+1 FoxP3+1 • DN CD8−3 CD127−1 Tox−1 Tim3−1 TCF1−1 CD226−1 CD27−1 TIGIT−1 CD3−1

2 : UP CD73+5 CD45RA+2 CD4+2 CD27+1 • DN FoxP3−1

13 : UP CD73+3 CD4+2 CD45RA+1 CD27+1 • DN CXCR5−1

12 : UP CD73+2 CD45RA+1 CD27+1 CD4+1 • DN CXCR5−1

11 : UP CD45RA+1 CD27+1 CD4+1 CD73+1 • DN None

3 : UP CD45RA+2 CD27+1 CD4+1 CD73+1 • DN CXCR5−1 CCR7−1

5 : UP CCR7+3 CD38+1 • DN FoxP3−1 CD73−1

9 : UP CXCR5+1 CD38+1 CCR7+1 • DN CD45RA−1

10 : UP CCR7+2 CXCR5+1 CD38+1 • DN CD45RA−1 CD27−1 CD4−1 CD73−1

15 : UP CCR7+1 CD27+1 • DN CD45RA−1 CD4−1 CD73−1

16 : UP CD27+1 • DN CD73−2 CD45RA−1 CD4−1

14 : UP FoxP3+1 CD27+1 • DN CD73−2 CCR7−1 CD4−1

17 : UP None • DN CD4−2 CD45RA−1 CD73−1

20 : UP CXCR5+1 • DN CD45RA−1 CD4−1 CD73−1

18 : UP CXCR5+1 • DN CD45RA−1 CCR7−1 CD4−1 CD73−1

19 : UP FoxP3+1 • DN CD45RA−1 CD38−1 CD27−1 CD4−1 CD73−1