Glutamate metabolism All SiRCle Clusters SLC1A3 SLC38A1 **GLUL** SLC7A11 **OPLAH** GOT1 **NAGS** Condition GPT2 Stage 1 Stage 4 SLC7A7 VAE Integrated Rank (Mean) SLC1A7 -1 **GPT** SLC3A2 SLC38A5 SLC6A1 **SLC25A13** ALDH4A1 SLC6A13 GLUD1 **GLS** ACY1 GOT2 2 VAE integrated value