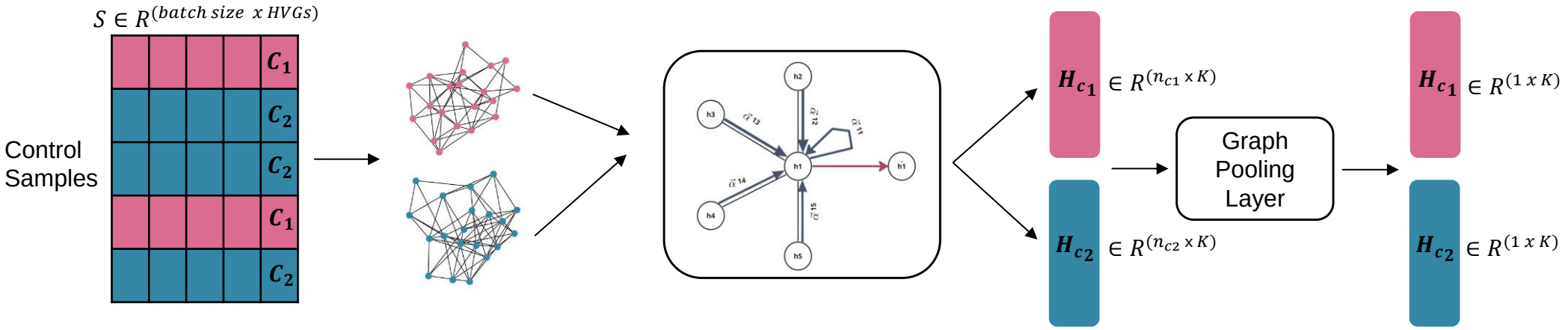
1) Sample a random batch S from D.

2) Get the graphs of the cell types in S.

3) Generate features for the graphs using GAT.

4) Create a cell-type feature vector by applying max pooling across the nodes.



5) Stack the cell graph features based on the cell type labels in S.

6) Define the perturbation embeddings.

7) $X = concat(S,\ C,\ P)$

8) Predict the perturbation response using MLP layers.