Your workflow is figure 1a.  (not provided)

Your CYs example is figure 1b (not provided)

The PCA of the samples according to the 20K\_simulated genes is figure 2b.

The thumbnails of the 5 extracted simulated patterns are figure 3a

The heat map of the extracted pattern simulated profiles is figure 3b

The PCA of the samples based on the extracted pattern simulated profiles is figure 3c.