**Figure S1.  Venn diagram of enhancers in three cell types used as inputs to the biclustering algorithms.** Enhancers were identified as distal p300 ChIP-Seq peaks.
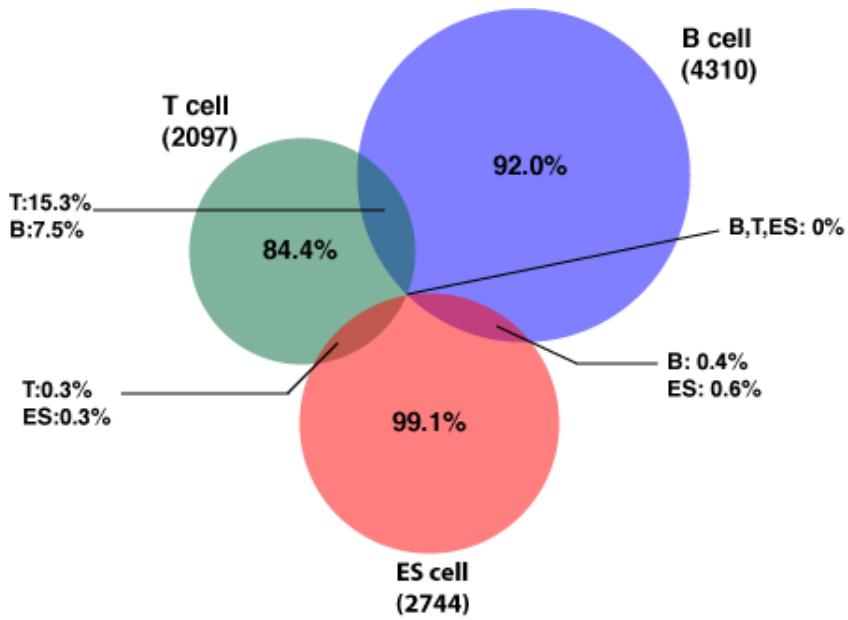
**Figure S3. Promoter coverage of all 26 possible histone states involving at least two histone modification marks.** Y-axis, percentage of enhancers in biclusters that are associated with a given histone state. Histone marks of each state is indicated at the bottom of the histogram. Each column represents a histone state with the filled square indicating the presence of a histone mark in the state and empty square otherwise.