

**Figure S1** Performance of the mammalian model on the mammalian validation dataset. The performance is presented as a) a plot of ROC and b) a graph of a precision-recall.



**Figure S2** Cross-species performance. The rows of heatmaps represent a model type and the columns indicate a dataset type. Values in the heatmaps are a) AUROC b) AUPR.



**Figure S3** The clusters of learned motifs from RSAT for human, mouse and zebrafish. The blocks of different colors along the heatmaps represent different clusters.



**Figure S4** A comparison of percentages of potential bins in different categories for human, mouse and zebrafish. The X-axis represents different categories, including all bins, exon bins and last exon bins. Potential bins are the ones with confidence above the moderate threshold.







**Figure S6** The distribution of distances from the most salient non-A nucleotides to mapped miCLIP m6A. The distribution of distances from the most salient non-A nucleotides in the independent test sequences with confidence above the moderate threshold to mapped miCLIP m6A in human, mouse and zebrafish. The X-axis denotes the distance.



**Figure S7** The distribution of the most salient As. The distribution of the most salient As in the independent test sequences with confidence above the moderate threshold by different

categories, including miCLIP-Seq m6A, Met-DB predicted m6A and the other in human, mouse and zebrafish.