

Description of Additional Supplementary Information Files

Supplementary Data 1: The TFBS-context deep learning model's performance on independent test sets for different TFs.

Supplementary Data 2: The detailed statistics information involved in this work.

Supplementary Data 3: Information on other obvious TFBSs contained within the TFBS-contexts.

Supplementary Data 4: The MPRA library of the three functional TFs (ELF1, HNF1A, HNF4A) in the HepG2 cell line.

Supplementary Data 5: The MPRA library of the 118 TFs.

Supplementary Data 6: The plasmid and primer sequences used in this work.

Supplementary Data 7: All of the flow cytometry results generated in this work.

Supplementary Data 8: The MPRA results of the library containing three key TFs in the HepG2 cell line.

Supplementary Data 9: The MPRA results of the library containing 118 TFs in the HepG2 cell line.

Supplementary Data 10: The matrix IDs of the PFMs used in this work.

Supplementary Data 11: The list of data from ENCODE used in this work.