

## Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: log<sub>2</sub> fold-change in transcription rates at gene and mRNA isoform levels

File Name: Supplementary Data 2

Description: log<sub>2</sub> fold-change in half-life at gene and mRNA isoform levels

File Name: Supplementary Data 3

Description: List of studies that measured mRNA half-life in different cell types and organisms.

File Name: Supplementary Data 4

Description: List of gene names generated from half-life quantification method using either 0.5h or 0.5 and 1h time points.

File Name: Supplementary Data 5

Description: log<sub>2</sub> fold-change in mRNA stability at gene and mRNA isoform levels for Rett syndrome mice models quantified from datasets published by Boxer et al.

File Name: Supplementary Data 6

Description: log<sub>2</sub> fold-change in steady-state and transcriptional rates of miRNAs in human Rett syndrome neurons.

File Name: Supplementary Data 7

Description: Enrichment scores of miRNAs and RNA-binding protein binding sites found for mRNAs undergoing buffering.