



Supplementary Figure S1: Similar types of changes to protein isoform sequence (AA residues) can arise from vastly different mechanisms.

(A) A deleted region of protein in the alternative isoform (i.e., deletion p-block) could result from exon skipping or an alternative splice donor. (B) A shortened N-terminal region could arise from alternative transcription start sites (altTSS) or alternative splicing in the 5' UTR. (C-D) A substituted protein region, in which one subsequence of protein is replaced with a different subsequence, (C) when internal, could arise from mutually exclusive exons or a unique frameshift pattern (“snapback” frameshift, see main manuscript), and (D) when at the C-terminal end, can arise from alternative last exon or a frameshift.