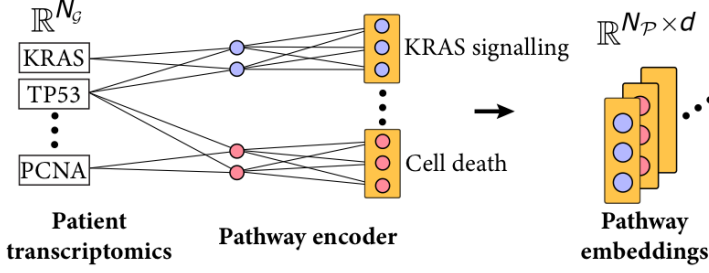


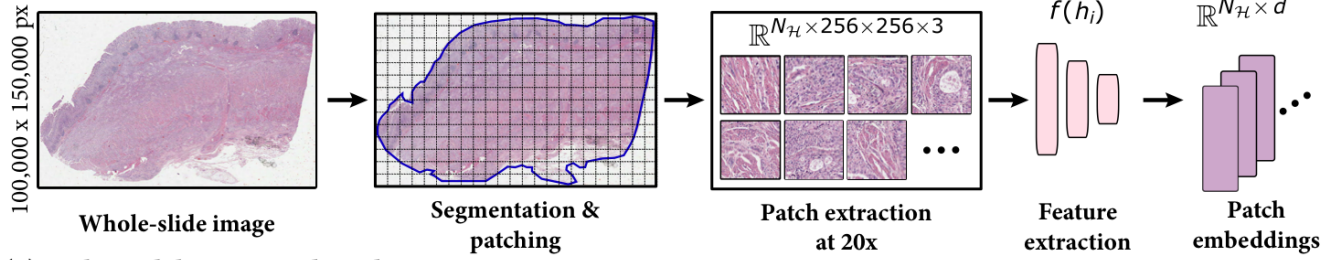
## (1) Pathway Tokenizer from Transcriptomics



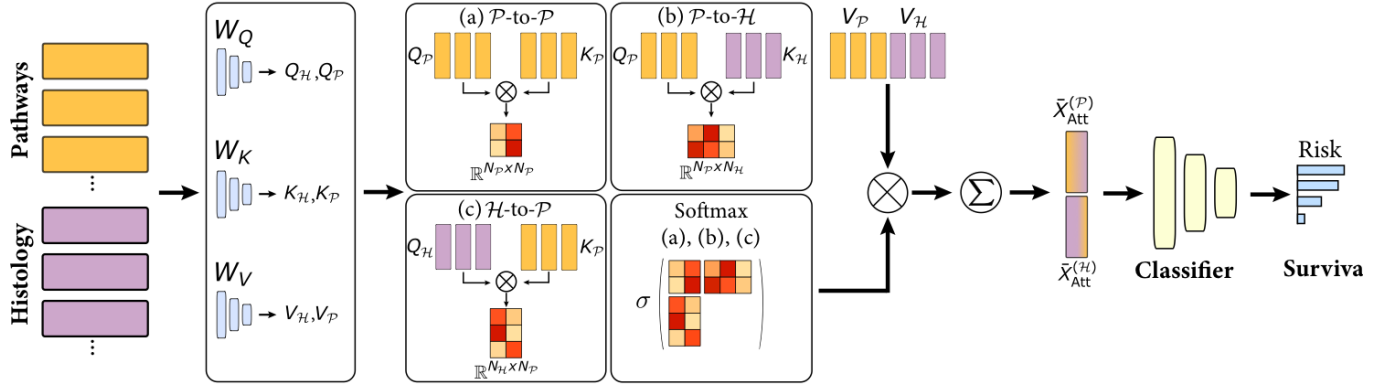
## Legend

$N_P$	: Number of pathways ( $N_P = 331$ )
$d$	: Token dimension ( $d = 256$ )
$N_G$	: Number of genes ( $N_G = 4,999$ )
$N_H$	: Number of patches ( $N_H = 7,000$ to $100,000$ )
$\otimes$	: Dot product
$\oplus$	: Average
$\sigma$	: Row-wise softmax

## (2) Histology Patch Tokenizer from WSI



## (3) Multimodal Fusion and Prediction

Figure 2: **Block diagram of SURVPATH.** (1) We tokenize transcriptomics into *biological pathway* tokens that are semantical