


Task 7: Tissue Location Prediction from Gene Symbol

Instruction	According to the relevant data reported in the scientific literature, the Gene symbol of a given protein can be used to predict which tissues the protein is expressed in.
Input	TMEM198
Ground Truth	adrenal gland, appendix, breast, bronchus, cerebral cortex, colon, fallopian tube, gallbladder, kidney, nasopharynx, prostate , rectum, salivary gland, seminal vesicle, skeletal muscle, small intestine, stomach, urinary bladder
OPI-tuned model	adrenal gland, appendix, bone marrow, breast, bronchus, caudate, cerebellum, cerebral cortex, cervix, colon, duodenum, endome trium, epididymis, esophagus, fallopian tube, gallbladder, heart muscle, hippocampus, kidney, liver, lung, lymph node, nasopharynx, oral mucosa, ovary, pancreas, parathyroid gland, placenta, prostate, rectum, salivary gland, seminal vesicle, skeletal muscle, skin, small intestine, smooth muscle, soft tissue, spleen, stomach, testis, thyroid gland, tonsil, urinary bladder
 GPT-4o	<p>The gene TMEM198 encodes a transmembrane protein that has been studied for its potential role in various tissues. According to scientific literature, TMEM198 is associated with specific tissue expression patterns, which can provide insights into its biological function.</p> <p>While the detailed tissue expression data for TMEM198 may vary depending on the study and the methodology used, general datab ases like GTEx (Genotype-Tissue Expression) can be used to predict and analyze the tissue-specific expression of TMEM198. Typically, proteins encoded by TMEM198 may show differential expression in tissues like the brain, liver, or other organs depending on the biological context.</p> <p>To obtain precise and up-to-date tissue expression profiles, it is recommended to consult resources like GTEx, BioGPS, or relevant scientific publications that provide experimental data on TMEM198's expression across various tissues.</p>
 Llama-3.1-8B-Instruct	<p>According to the relevant data reported in the scientific literature, TMEM198 is a protein that is expressed in the following tissues: * Brain * Kidney * Liver * Lung * Spleen * Testis Please note that the expression patterns of proteins can vary across different species, and this information may not be applicable to all organisms. Additionally, the expression patterns of a protein can also vary depending on the specific conditions or disease states.</p>
 Claude 3.5 Sonnet	<p>To accurately predict protein expression patterns in tissues based on gene symbols, we would need to consult scientific databases and recent literature. However, I can provide some general information about TMEM198 and how one might go about investigating its tissue expression: TMEM198 stands for "Transmembrane Protein 198". As the name suggests, it's a protein that spans cellular membranes. To predict which tissues express TMEM198, researchers would typically use resources such as:</p> <ol style="list-style-type: none">1. Gene expression databases like GTEx (Genotype-Tissue Expression project)2. Protein atlases like the Human Protein Atlas3. Literature searches in scientific databases for studies that have examined TMEM198 expression <p>Without access to these resources in real-time, I can't provide definitive information about TMEM198's tissue-specific expression. However, transmembrane proteins are often found in various tissues throughout the body, as they play crucial roles in cellular communication, transport, and signaling. To get accurate, up-to-date information on TMEM198's tissue expression, I'd recommend:</p> <ol style="list-style-type: none">1. Checking the GTEx portal for RNA-seq data across different tissues2. Examining the Human Protein Atlas for protein-level data3. Conducting a literature search for any studies that have specifically investigated TMEM198 expression patterns <p>Would you like me to explain how you might go about using these resources to investigate TMEM198's expression, or do you have any other questions about this topic?</p>