README

1. Folder structure:

FinalProject
- **Code**
  - BME_342_final_project_template.ipynb
  - imc_preprocessing.py
- **IMC_images**
- metadata.csv
- panel.csv
- README.docx

Marked green = Folders

2. File information:

code folder:
There are two scripts in the this folder:
- BME_342_final_project_template.ipynb (can be used as a template for the project)
- imc_preprocessing.py (can be imported from the main script for preprocessing)

IMC_images folder:
This folder contains 984 hot-pixel filtered IMC images (in .tiff format) from 494 clear-cell renal cell carcinoma (RCC) patients.

panel.csv:
This file contains the list of channels present in the images and their respective markers.

metadata_general.csv:
This file contains image information and all important patient-level metadata. Here is a brief description of the column names:

“sample_id”: Sample identifier
“width_px”: Image width
“height_px”: Image height
"PID": Patient identifier (Each patients has around 2 images).
"TMA": TMA origin (The study was measured on two separate TMAs)
"gender": Gender
"age": Age
"age_bin": Age bin

“necrose”: Tumor necrosis (2 classes)
"PDL1_score": PD-L1 status (2 classes)
"genomic_risk": Genomic risk groups (3 classes)
“metabolic_subtype”: Metabolic subtype (4 classes)
"surv_censor_event": Survival risk category 2 (2 classes; Median survival time split only for patients with survival event)

Marked blue = Clinical categories for classification (Information available for most patients)
Marked purple = Multi-Omic categories for classification (Genomic information available for 168 patients. Metabolic information is available for 442 patients)
Marked orange = Survival categories for classification (Category 1 information available for most patients; Category 2 information available for around 159 patients)

IMPORTANT NOTE: The images were resized to (224,224,n_channels). In metadata.csv you find the original image dimensions. Make sure to exclude images that have original image sizes that could be problematic for further analysis.