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## 1. Tumor and TIL visualization

In Figures 1, 2, 3 we present all combinations of low/high tumor and low/high TIL samples generated by PathLDM. The corresponding GPT summary used for each image is provided at the top of each figure.

Report: The patient has Her2 subtype breast cancer with invasive ductal carcinoma, moderately-differentiated, and intraductal comedo type. Necrosis is present within the intraductal subtype. Lymphovascular invasion is present in lymphatics while calcifications occur in both malignant and benign areas. Surgical margins are free of cancer. One out of fifteen axillary lymph nodes show extensive replacement. No carcinoma is identified on surgical margins, and tumor distance from the closest deep margin is 0.6 cm.

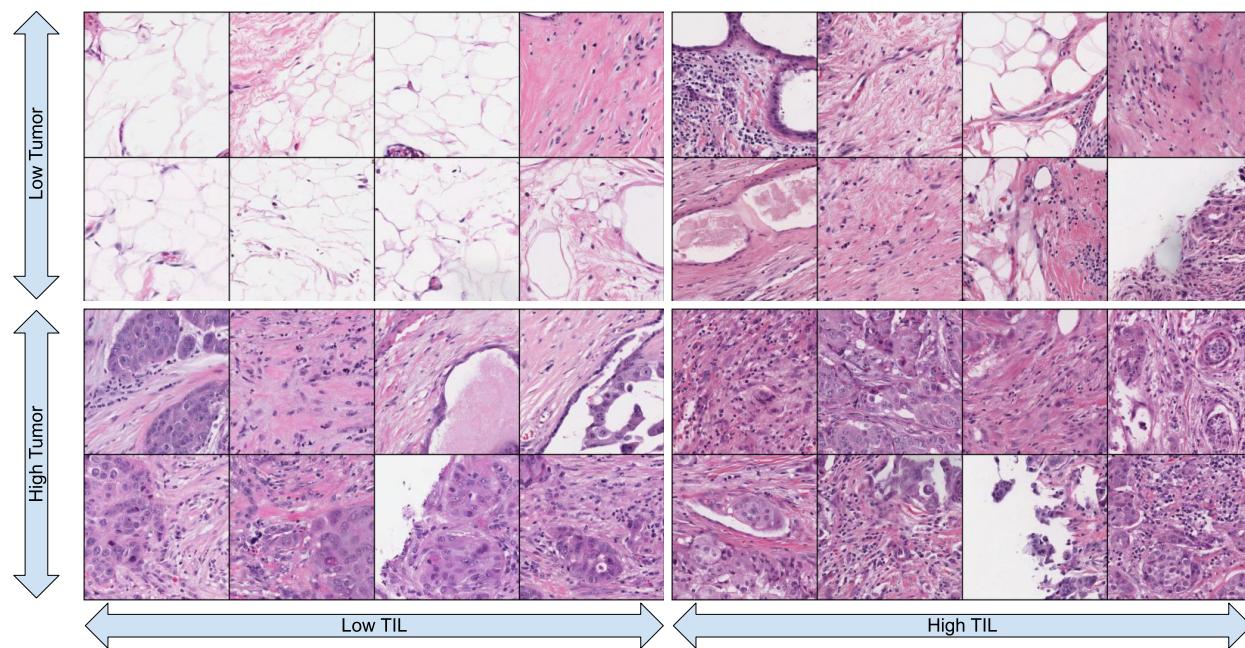


Figure 1

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## 2. GPT-3 summaries

We also provide the summaries of all text reports of TCGA BRCA. Each file contains the prompts, original report and the final summary. Please refer to Figure 1 of the main Submission for an example of our GPT-3.5 usage.

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The breast pathology report reveals moderately differentiated infiltrating ductal carcinoma (LumB subtype) of size 2.8 cm, with no necrosis and negative for lymphatic/venous invasion. Intraductal component present with solid and cribriform pattern, nuclear grade 3 with central necrosis. One of the two sentinel lymph nodes was positive for metastatic carcinoma. ER positive, PR negative and HER2 Neu positive by IHC. Unremarkable breast tissue in additional margins specimens. USUAL ductal hyperplasia, fibrocystic changes identified in margins.

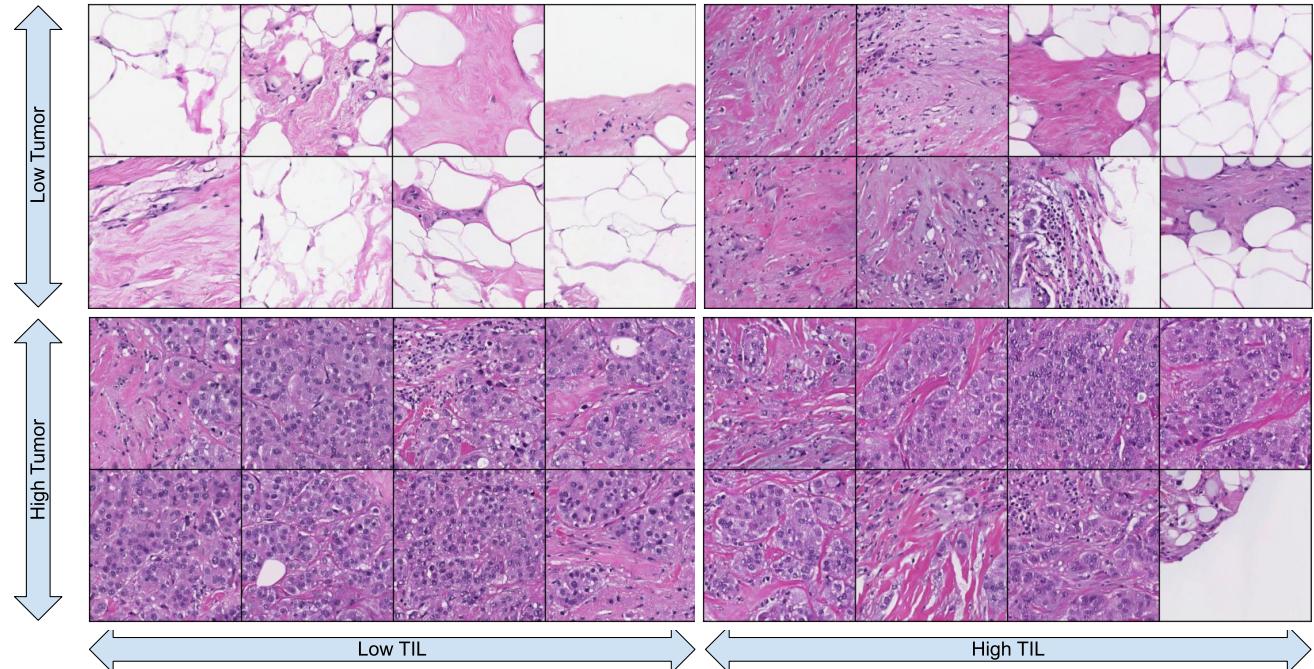
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Figure 2

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The pathology report indicates invasive ductal carcinoma, with 2 separate nodules; one poorly differentiated with comedonecrosis, the other moderately differentiated with areas of high-grade DCIS. Necrosis is also present. There is a microscopic focus of solid-type DCIS at the medial margin and a microcalcification with comedonecrosis suspicious for DCIS at the inferior margin. No mention of tumor-infiltrating lymphocytes or lymphovascular invasion was made in the report

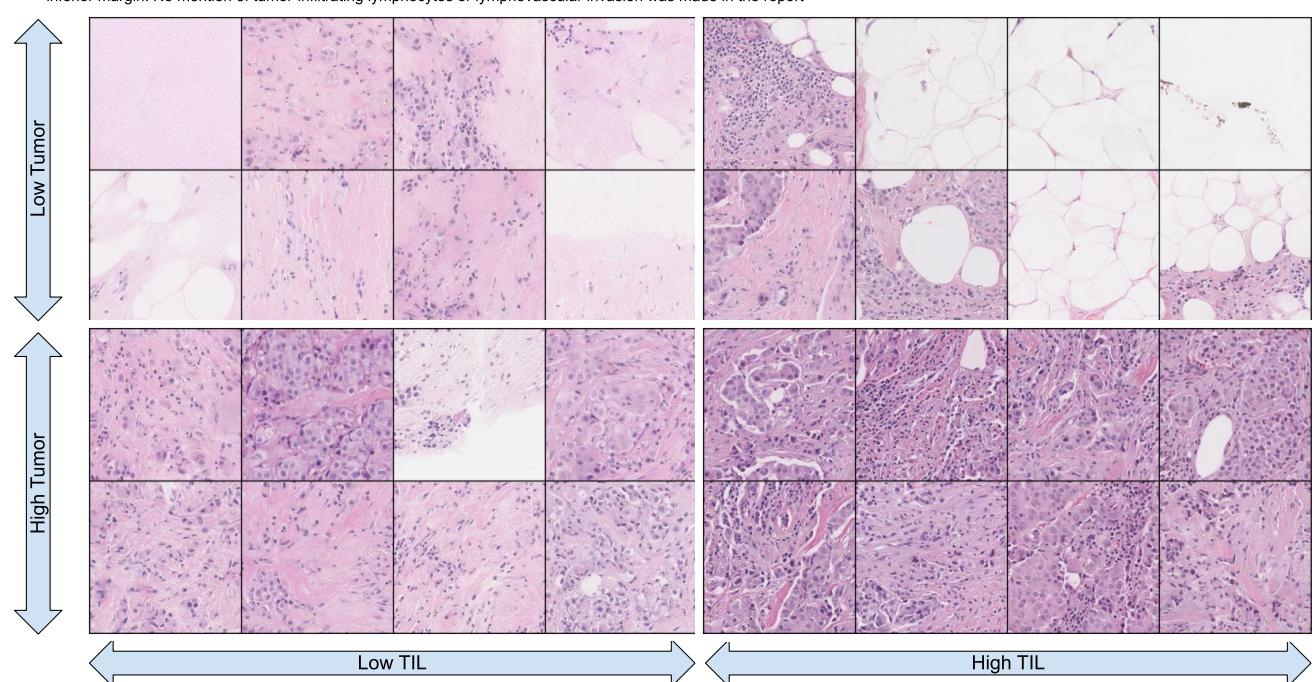
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Figure 3

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