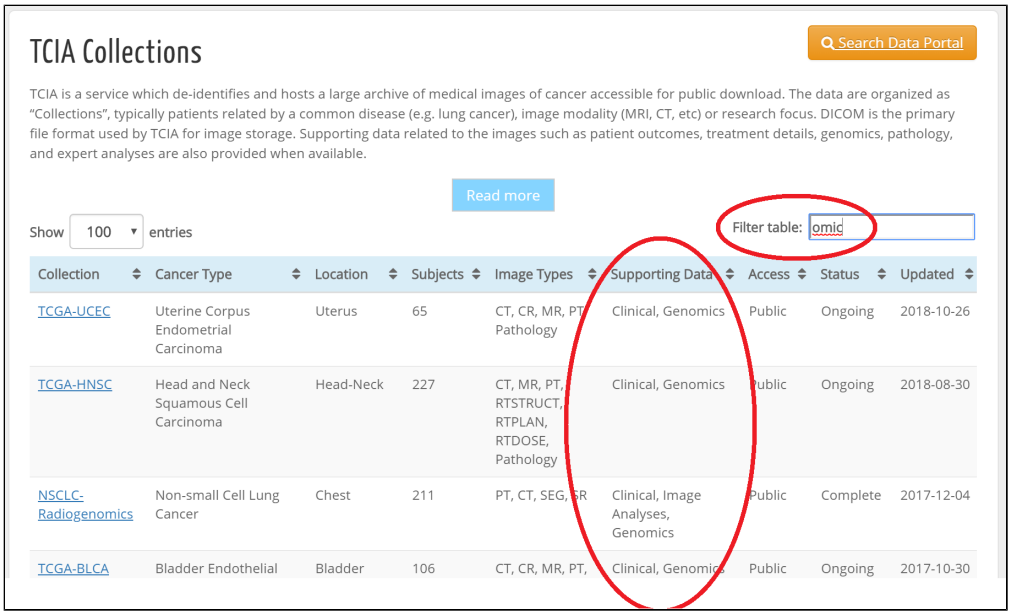
Imaging Proteogenomics

The Cancer Imaging Archive supports a research community that seeks to connect cancer phenotypes to genotypes. To accomplish this, TCIA hosts data sets that connect clinical images with patient genomic data and proteomic data. To access data sets with corresponding genomic and/or proteomic data, use the "Supporting Data" column on the home page to filter for "Genomics" and/or "Proteomics" data sets. Some of these data are contributed by the research community at large, but most of them have been collected as part of the large-scale NIH data collection activities which are summarized below.



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Applied Proteogenomics OrganizationaL Learning and Outcomes (APOLLO)

The Applied Proteogenomics OrganizationaL Learning and Outcomes (APOLLO) network is a collaboration between NCI, the Department of Defense (DoD), and the Department of Veterans Affairs (VA) to incorporate proteogenomics into patient care as a way of looking beyond the genome, to the activity and expression of the proteins that the genome encodes. TCIA is a part of the APOLLO network providing radiological and pathological image collection support to the project. TCIA will make the imaging data available as a public resource according to the data release policies of APOLLO.

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Clinical Proteomic Tumor Analysis Consortium (CPTAC)

The National Cancer Institute's Clinical Proteomic Tumor Analysis Consortium (CPTAC) is a national effort to accelerate the understanding of the molecular basis of cancer through the application of large-scale proteome and genome analysis, or proteogenomics. Data (genomics, proteomics, imaging), assays, and reagents are made available to the public as a Community Resource to accelerate cancer research and advance patient care. CPTAC has been conducted in multiple phases. For their phase 3 prospective data collection activities TCIA has partnered with CPTAC to host both the radiology and pathology imaging data generated by the project. The other data types will be hosted in separate databases managed by the CPTAC program. TCIA will provide links to these external resources as they become publicly available. A summary of the existing data hosted on TCIA can be found on the CPTAC Imaging Proteomics page.

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The Cancer Genome Atlas (TCGA)

In 2006, the National Cancer Institute (NCI) initiated a project in collaboration with the National Human Genome Research Institute (NHGRI) called The Cancer Genome Atlas (TCGA). The focus of the project was to construct an atlas of genomic information for over 20 different cancer types. This effort also demonstrated that national networks can effectively work together to pool their data and develop an infrastructure for making the data publicly available, enabling researchers around the world to make novel discoveries. The resulting genomic, pathology and clinical data are freely accessible for researchers to download via the Genomic Data Commons. To further increase the value of this data, the NCI Cancer Imaging Program Informatics Lab worked with TCGA Tissue Site Source institutions to collect clinical diagnostic images for TCIA that match the genomic data, available for public download. Volunteer teams were also assembled, selected from TCGA Image Source Sites, to catalyze analysis of these data and investigate potential correlations with the genomic, pathology, and clinical data. The results of those efforts are described in the CIP TCGA Radiology Initiative pages.

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