



INFRAFRONTIER via



canSERV

# Digital pathology and Machine Learning-based image analysis

## What service do we offer?

### Digital pathology and Machine Learning-based image analysis

This service offers tailored analysis protocol packages (APPs) for digital image data analysis of histological tissue slides. It utilizes the Visiopharm software, equipped with tissue align and tissue micro array modules, as well as machine learning (ML) capacity for detection. The Visiopharm software reads about 50 different image formats. ML is trained for efficient detection and analysis of clear and unique structural features (e.g. tumors, blood vessels, connective tissue), specific to the research question. Thresholding is also available for detection. APPs are tailored according to the specific research question, and they are modified to work with a specific staining. APP design and analysis service is done in close collaboration with the customer to quantify various histological aspects of cancer.

**APPLY NOW!!**



### Included in the service:

*This is included in the service provision by default.*

- Designing customized detection and quantification of cancer-related parameters with the Visiopharm software in images compatible with the Visiopharm software and having clearly distinguishable and unique, stained structure(s) to be detected.
- Design and quality control in collaboration with the customer, based on pathological expertise provided by the customer.
- Analysis of sample cohorts (including maximum of 80 images and 150 GB)
- Static storage of images and layer data (for up to two years) and transfer of analysis data either as Visiopharm layer data format or as Excel data.
- Co-ownership and access to the APP(s) developed.



### Additional support:

*This can be provided on demand if there is canSERV funding available, or on a fee-for-service or collaborative basis and will require further negotiations with the applicant.*

- Logistics support and advice to ship materials.
- Tissue processing, paraffin embedding, sectioning and hematoxylin-eosin staining.
- Whole slide (26 mm x 76 mm or for double sized slides 52 x 76 mm, thickness max 1,2 mm) bright field imaging of stained and mounted slides using Hamamatsu S60 NanoZoomer bright field slide scanner either with 20x or 40x modes.
- Transfer of scanned images.

### Who provides this service?

#### **Transgenic and Tissue Phenotyping Core Facility, Biocenter Oulu, University of Oulu (Finland)**



[Biocenter Oulu](#) research infrastructure operates at the University of Oulu, Finland, and serves academic and non-academic customers in research and R&D projects. Our open access services are available through Ilab reservation system to all customers. [Transgenic and Tissue Phenotyping \(TTP\) Core Facility](#) provides a wide range of services for planning, generation, archiving, recovery, and re-derivation of gene-modified (GM) mouse lines as well as for tissue phenotyping: histology, digital pathology, and image analysis. Histopathological services include tissue processing, sectioning, staining, bright field whole slide imaging, tailored analysis design, and image analysis (under the license of Visiopharm and for academic customers only).

TTP Core Facility serves as the Finnish European Mouse Mutant Archive (EMMA) node in INFRAFRONTIER ESFRI infrastructure (<https://www.infrafrontier.eu/>) holding about 380 publicly available mouse lines.

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## References:

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## INFRAFRONTIER

[INFRAFRONTIER, the European Research Infrastructure for Modelling Human Diseases](#), is a non-profit organisation dedicated to advancing disease understanding and treatment through cutting-edge models. Operated by a [network of over 20 leading biomedical research institutes](#), it empowers research on human health and disease. Committed to excellence, INFRAFRONTIER adheres to rigorous scientific benchmarks and prioritises animal welfare. Through [collaboration with other infrastructures](#), it fosters global data sharing and contributes to tackling significant health challenges. INFRAFRONTIER serves as a platform for innovative technologies and knowledge exchange, leveraging the power of disease modelling to improve human health.

INFRAFRONTIER offers a host of cutting-edge in vivo services in [canSERV](#) like generation of precision cancer models, in-depth cancer phenotyping and more! These free-of-charge services are offered by INFRAFRONTIER partners that are world-class experts in disease modelling.