INFRAFRONTIER via canSERV

In-depth cancer-based phenotyping

Provider: Netherlands Cancer Institute (NKI)

What service do we offer?

In-depth cancer-based phenotyping

This service combines mouse breeding and experimental animal pathology. The mouse breeding includes the breeding, genotyping and selection of the mice that will be phenotyped. The mouse handling involves the bi-weekly palpation of the mice, measuring the tumours and checking for metastasis and overall welfare. It also involves sacrificing the mice for dissection and freezing down and storing the viable tumour pieces. A health check will be performed and tumours genotyped. The experimental animal pathology encompasses the complete necropsy of 15 mice, followed by complete histology (tissue trimming, processing, paraffin embedding, sectioning, staining with H&E), and histopathology report of all abnormalities of several body parts and organs.

APPLY NOW!!

Included in the service:

This is included in the service provision by default.

- Breeding of the mice
- Genotyping and selection of the mice
- Bi-weekly palpation of the mice checking for tumours and/or metastasis and wellbeing of the mice.
- Sacrificing the mice performing a health check and full necropsy of 15 mice combined with freezing down and storage of viable tumour pieces.
- Histology which includes tissue trimming, processing the tissues by paraffin embedding, sectioning and haematoxylin and eosin staining.
- Create a histopathology report of all abnormalities (phenotypes) of several body parts and organs.

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.

NKI can offer a complete range of pathology services for animal experiments. Activities include animal dissection and tissue sampling, processing, embedding and sectioning, and a wide range of histochemistry and immunohistochemistry stains. NKI can also transplant the tumour pieces of the phenotypes models via orthotopic/ectopic xenograft models in immunodeficient or syngeneic mouse strains to look into outgrowth potential or perform pre-clinical intervention and imaging studies with these tumour pieces in its Mouse Cancer Clinic.

Who provides this service?

The Mouse Clinic for Cancer and Ageing (MCCA) at The Netherlands Cancer Institute (Netherlands)

NETHERLANDS CANCER INSTITUTE
ANTONI VAN LEEUWENHOEK

The Netherlands Cancer Institute (NKI) is a dedicated cancer centre in The Netherlands, placed at the international forefront of both patient treatment and cancer research. To enable preclinical in-vivo modelling and treatment of cancer, the NKI has established the Mouse Clinic for Cancer and Ageing (MCCA), which houses a transgenic facility and a mouse cancer clinic. The MCCA Transgenic Facility provides all services related to the generation of genetically engineered mouse models (GEMMs) and has developed novel pipelines for the accelerated production of models using CRISPR/Cas9-based gene editing as well as GEMMs-derived embryonic stem cells (GEMM-ESCs). A unique archive for the distribution of GEMM-ESC lines has been created as part of the EMMA project. The MCCA Mouse Cancer Clinic performs preclinical intervention and imaging studies using advanced cancer models, such as transgenic models, orthotopic transplantation models, and patient derived xenografts (PDX).

The NKI is a highly valued and productive member of INFRAFRONTIER and EurOPDX.

Contact: Dr Marieke van de Ven <m.vd.ven@nki.nl>

References:

- Mertens S, Huismans M.A, Verissimo C.S, et al. **Drug-repurposing screen on patient-derived organoids identifies therapy-induced vulnerability in KRAS-mutant colon cancer**. *Cell Rep.* 2023; 42(4):112324 doi10.1016/j.celrep.2023.112324

- Zimmerli D, Brambillasca CS, Francien Talens F, et al. **MYC promotes immune-suppression in triple-negative breast cancer via inhibition of interferon signaling**. *Nat Commun*. 2022; 13(1):6579. doi: 10.1038/s41467-022-34000-6

- Mainardi S, Mulero-Sánchez A, Prahallad A, et al. **SHP2 is required for growth of *KRAS*-mutant non-small-cell lung cancer in vivo.** *Nat Med*. 2018; 24(7):961-967. doi: 10.1038/s41591-018-0023-9

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.