

HUNTing for biomarker answers?

Introducing HUNT Biosciences Ltd

... the commercial arm of the HUNT Study and Biobank

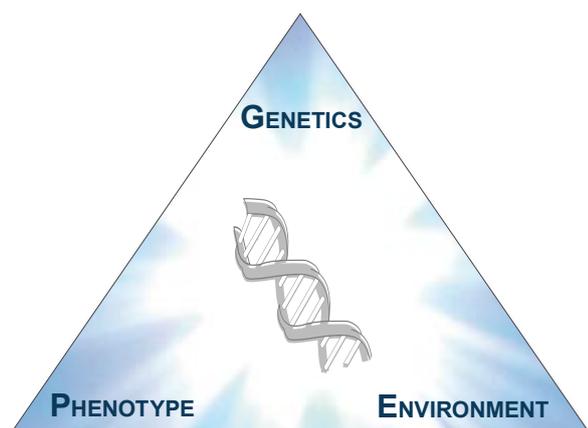
- **a fully established Norwegian population-based prospective biobank**
- **leveraging more than 20 years of medical records and biological samples**



Hunt Biosciences – your access to unique assets

The HUNT Study and Biobank is a unique resource for genetic epidemiology-based R&D. Starting with an astonishing 88% participation, the Biobank offers longitudinal studies of an unbiased population, combining detailed and precise phenotypic and environmental information/exposure variables with a state-of-the-art sample repository. HUNT Biosciences opens these assets for the development of improved diagnostic and therapeutic solutions by industry partners.

- A state-of-the art Biobank Facility opened in 2007.
- Fully automated solutions for sample handling and fractionation.
- Quality controlled DNA isolation and amplification facilities.
- Scalable automated sample storage and retrieval system.



Genetics:

- Purified and quality tested DNA from 65.000 donors available today.
- From 2008 (the HUNT 3 study):
 - DNA from about 90.000 individuals and 35.000 RNA samples.
 - Immortalised cells for cell line production from 65.000 individuals.
 - Genetic expression analysis from tumor biopsies.

Phenotype:

- Precise information on health status and extensive lifestyle data.
- Cross-linkage to local clinical data files, as well as national registries, such as:



- The “Medical Birth” and “Cause of Death” registries.
- The “National Prescription Registry”.
- The “Cancer Registry” and other validated clinical end-point registries on e.g. myocardial infarction, venous thromboembolism, stroke and fractures.

Environment:

- Coverage of more than 800 exposure variables in an easily accessible database.
- Prospective information due to prolonged observation period.

Collaborations and ongoing medical research projects

The HUNT Study provides data on a large number of diseases observed in this general population. It has been validated by more than 250 ongoing or completed research projects with particular emphasis on diabetes type 2, osteoporosis, cardiovascular, kidney and lung diseases. Further indications include urine incontinence, hemochromatosis, reflux disease/dyspepsia, thyroid diseases, headache and musculoskeletal complaints, anxiety and depression.

HUNT is an integrated part of three EU projects in FP 6 and its role in EU funded medical research is expected to be further extended and deepened in the Framework 7 programs.

HUNT cooperates actively with UK Biobank, based on a bilateral national agreement signed in 2005. This includes the development of integrated solutions for data management and automated sample handling.

HUNT Biosciences – what we can do for you

HUNTING for high-quality confirmatory data on novel biomarkers

The HUNT Biobank is ideally positioned to match the growing needs in biomarker discovery and validation. Well-defined case-control cohorts can be selected from a large and well-equipped biobank. The vast amount of phenotypic information connected to each DNA sample would provide high-quality confirmatory data on newly discovered markers.

- Precise and extremely broad phenotypic information resulting in high specificity.
- Information on disease onset and progression through clinical measurements and data on medication provide additional insight.
- Genetic risk factors can be interlinked with lifestyle and environmental data to generate specific risk profiles.
- Longitudinal information and genealogy data offer additional validation in as much as 10.000 trios.

HUNTING for new treatments in the era of predictive, preventive and personalised medicine

Subjecting disease-specific cohorts from HUNT Biobank to whole genome mapping studies will generate comprehensive maps of genetic variability for defined diseases. Combined with the large amount of precise phenotypic and environmental information collected during the HUNT studies, they provide a strong basis for the discovery and development of novel diagnostic and therapeutic products:

- Association studies to identify genetic risk factors, novel markers and target pathways.
- Identification of patient subgroups to support genotype-driven clinical investigations and patient stratification.
- Novel pharmacogenetic insights by combining information on genotype, clinical parameters and medication.
- Core strengths in key public health areas such as cardiovascular diseases, diabetes, obstructive lung disease, osteoporosis and mental health.

HUNTING for improved product performance: Support of post-marketing investigations

The connection of HUNT data and the National Prescription Registry generates novel opportunities for post-marketing investigations. Individuals treated with the drug of interest as well as with competitive products exhibiting a similar or different mode-of-action, can be identified and analysed to obtain a detailed understanding of treatment results, dosing and side-effects.

- SNP analysis to determine genetic variations in targeted pathway(s) and in genes associated with potential side-effects.
- Individual SNP profiles can subsequently be connected to extensive phenotypic information (clinical, lifestyle and environmental data).
- Identification of responders/non-responders and identification of patients at risk for certain side-effects
- Patient stratification for development of follow-up products.





An asset for all – built on trust

HUNT represents a regional cohort of close to 100.000 individuals and is part of CONOR, the Cohort of Norway. In addition to professionally stored genetic samples, the HUNT surveys comprises more than 800 clinical data points and environmental exposure variables collected since the early 1980s. This unique resource operates as a satellite to the Norwegian University of Science and Technology (NTNU). A specially designed National Biobank building with state-of-the-art infrastructure was recently opened.

The Norwegian authorities have earned the population's trust through a well-established framework and rigorous routines for protection of person information. Based on this trust and the unique system of unambiguous personal identification numbers, HUNT offers integration of biobank data with other national registries on clinical information and medical end-points, as well as genealogical and family linkage information.

HUNT Biosciences was recently established in order to offer a professional interface with industry and facilitate commercial use without compromising the interests of the donor population.