Olink®

Advance precision medicine with next-generation proteomics

95%

of all approved drug targets are proteins.

Proteomics guarantees more robust drug targets, increasing the chance of identifying drug target candidates **4x** more than traditional methods (*Zheng et al. 2020*, Nature Genetics).

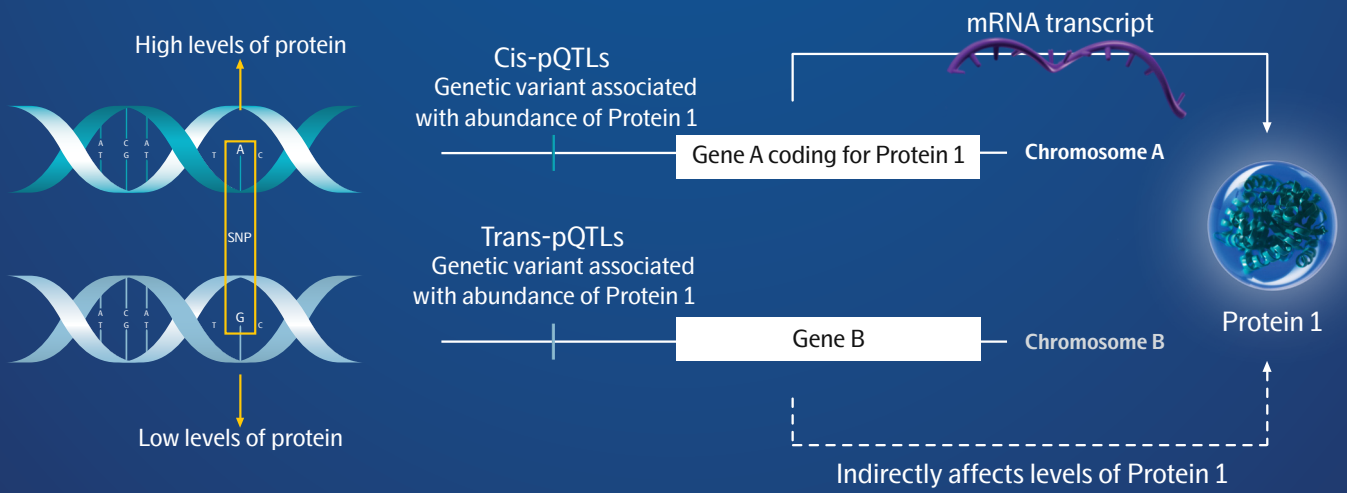
Protein Quantitative Trait Loci

By knowing which proteins cause disease, drug development researchers are better able to validate and prioritize current drug targets and identify new drug targets more effectively.

pQTLs

Protein Quantitative Trait Loci (pQTLs) have the potential to greatly impact drug development. pQTLs are genetic variants that are associated with protein levels, either directly (cis-pQTLs) or indirectly (trans-pQTLs).

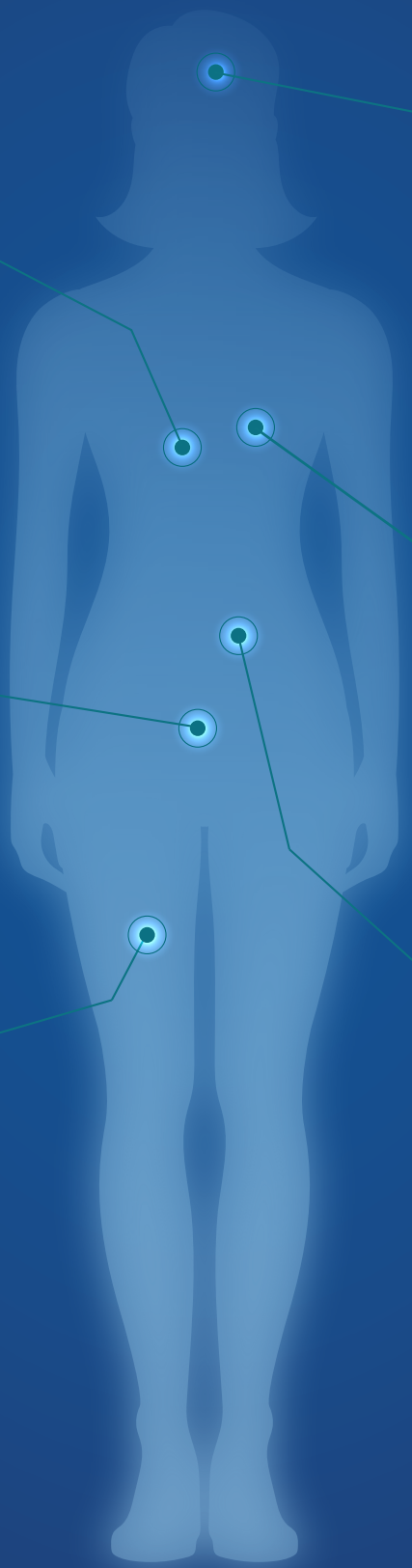
They provide a window into protein-gene interactions, which allow us to determine whether potential drug target proteins cause disease through Mendelian Randomization analysis.



To learn more about pQTLs and their impact on drug development,download our eBook.

Download

How Olink proteomics advances precision medicine research



Lungs:

A broad discovery, longitudinal analysis of a wellness cohort identified protein biomarkers that can detect metastatic cancer up to 5 years before diagnosis.

Magis et al. 2020, **Untargeted longitudinal analysis of a wellness cohort identifies markers of metastatic cancer years prior to diagnosis**, *Sci Rep* 10, 16275, DOI: nature.com/articles/s41598-020-73451-z.

Brain:

In this neurology study, it is suggested that increased NfL may serve as a biomarker for earlier diagnosis of patients with Hereditary Transthyretin-Mediated Amyloidosis. In a phase III clinical trial of Patisiran vs placebo, it was shown that Patisiran significantly lowered the level of NfL. This was a large scale Olink proteomics study of ~1000 proteins.

Ticau et al. (2021) ***Neurofilament Light Chain as a Biomarker of Hereditary Transthyretin-Mediated Amyloidosis****, Neurology, 96(3), e412-e422; DOI: 10.1212/WNL.0000000000011090.*

Ovaries:

Predictive models using a panel of 28 proteins accurately separated benign tumors from early-stage and/or late-stage ovarian cancer, as well as early-stage from late-stage cancer in this discovery study using **Olink® Explore 1536**.

Gyllensten et al. 2022, **Next Generation Plasma Proteomics Identifies High-Precision Biomarker Candidates for Ovarian Cancer**, *Cancers*, 14:1757, DOI: doi.org/10.3390/cancers14071757.

Heart:

This study found that proteomics-based machine learning algorithms were better at predicting all-cause mortality in cardiovascular risk patients than classical clinical risk prediction methods.

Unterhuber M, Kresoja K, Rommel K, et al. 2021, ***Proteomics-Enabled Deep Learning Machine Algorithms Can Enhance Prediction of Mortality***. *J Am Coll Cardiol* 78 (16) 1621–1631. DOI: doi.org/10.1016/j.jacc.2021.08.018.

Muscle:

A 21-protein biomarker panel developed by Octave Bioscience has met the acceptability criteria for disease activity assessments of Multiple Sclerosis.

Hu et al. 2021, **Analytical Validation of a Multivariate Proteomic Serum Based Assay for Disease Activity Assessments in Multiple Sclerosis** [*powerpoint presentation*], Actrims forum, 26 February, Virtual.

Intestine:

A prototype clinical test is being developed to monitor disease progression and predict treatment response in pediatric Crohn's disease patients. The test is based on protein biomarkers identified using Olink that can predict whether pediatric Crohn's disease patients will develop complications within 5 years of diagnosis.

Hurtado-Lorenzo, A. 2022, **Advancing precision medicine: Prognostic biomarkers for pediatric Crohn's disease**
(Webinar recording) Link: olink.com/news/advancing-precision-medicine-prognostic-biomarkers-for-pediatric-crohns-disease/