THE HUMAN PROTEIN ATLAS

Launch of the tissue-based map of the human proteins.

Stockholm November 6, 2014

A decade after the completion of the human genome, the Human Protein Atlas program today launched a tissue-based atlas covering the protein complement of the human genome. Based on 13 million annotated images, an interactive database has been created to show the distribution of proteins in all major tissues and organs in the human body.

A decade on from the Human Genome, the Human Protein Atlas, a major multinational research project supported by the Knut and Alice Wallenberg Foundation, today launched an open source tissue-based interactive map of the human proteome. The Human Protein Atlas maps for the first time the human proteins in all major organs and tissues, showing both proteins restricted to certain tissues, such as the brain, heart, or liver, and those present in all. This important new knowledge resource will prove invaluable to researchers world-wide, particularly in human health since the vast majority of drugs on the market are designed against proteins. As an open access resource, it is expected to help accelerate the development of new diagnostics and drugs to benefit mankind.

Started in 2003, two years after the first draft of the human genome, it has taken a team of scientists and IT engineers over 1,000 man years to complete the Human Protein Atlas to yield an interactive database containing 13 million annotated images. Today, over 100 scientists work in this project, bringing together competence from many different research areas. The interactive database is aimed for researchers interested in human biology as well as researchers working in the field of translational medicine.

Earlier this year (May 29), Nature published a thematic issue called "The Human Proteome" with three articles announcing various international efforts to describe the protein complements of the genome, including an article describing the Swedish-based Protein Atlas effort and its plan to release a first draft based on transcriptomics and protein profiling (www.nature.com/nature/journal/v509/n7502/full/509645a.html) later in the year. This release, scheduled for today, comes after more than 300 peer-review publications from the Protein Atlas team during the last ten years and is

accompanied with a poster in the journal Science (published on Nov 7) complemented with a digital version of the poster at the Protein Atlas portal (www.proteinatlas.org).

"This is a truly exciting moment to be able to launch this resource to the scientific community with detailed lists of proteins located to the different parts of the human body. The combination of several omics technologies has allowed us to map proteins down to the single cell level in a team of multi-disciplinary expertise spanning biotechnology, IT, and medicine. The resource is completely free with unrestricted access (www.proteinatlas.org)." says Prof Mathias Uhlen, Director of the program.

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About

Human Protein Atlas

The Human Protein Atlas project, funded by the Knut and Alice Wallenberg Foundation, has been set up to allow for a systematic exploration of the human proteome using Antibody-Based Proteomics. This is accomplished by combining high-throughput generation of affinity-purified antibodies with protein profiling in a multitude of tissues and cells assembled in tissue microarrays. Confocal microscopy analysis using human cell lines is performed for more detailed protein localization. The program hosts the Human Protein Atlas portal with expression profiles of human proteins in tissues and cells. The main sites are located at AlbaNova and SciLifeLab, KTH - Royal Institute of Technology, Stockholm, Sweden, the Rudbeck Laboratory, Uppsala University, Uppsala, Sweden and Lab Surgpath, Mumbai, India. For more information on the Human Protein Atlas, visit our website at www.proteinatlas.org.