



CLINICAL PROTEOMIC
TECHNOLOGIES FOR CANCER

<http://proteomics.cancer.gov>



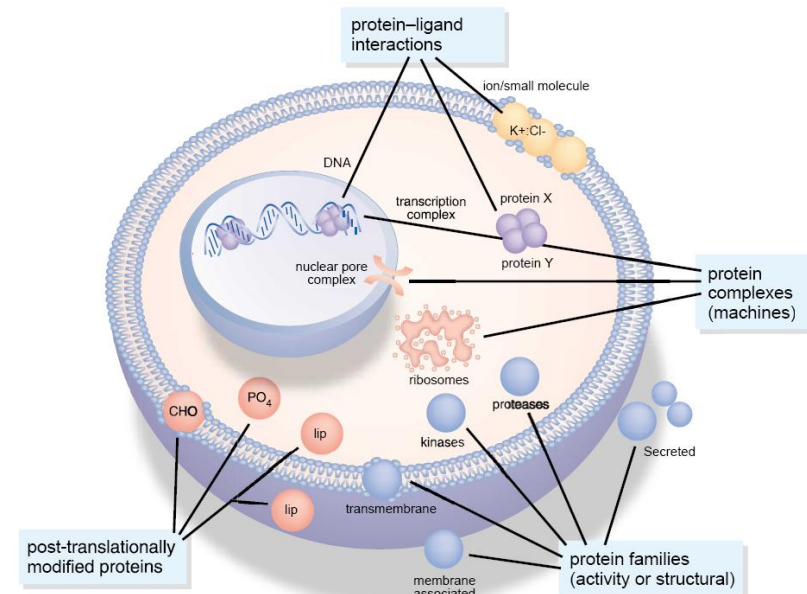
Proteomics and the NCI Henry Rodriguez OTDIR

Clinical proteomic technologies offer the potential opportunity to enable:

- Early detection of cancer
- Molecular imaging probe and sensor development
- Discovery of targeted drugs
- Rationally developed clinical trials
(e.g., stratification, intermediate endpoints)

Clinical Proteomics Today

- **No** single technology platform can satisfy all of the desired proteomic measurements
- **No** mature, “true” proteomic technology
- **No** performance criteria
 - Poor confidence in protein measurement results
 - Difficulty in assessing agreement of different experiments
 - Conflicting reports in the literature
 - Lost opportunities

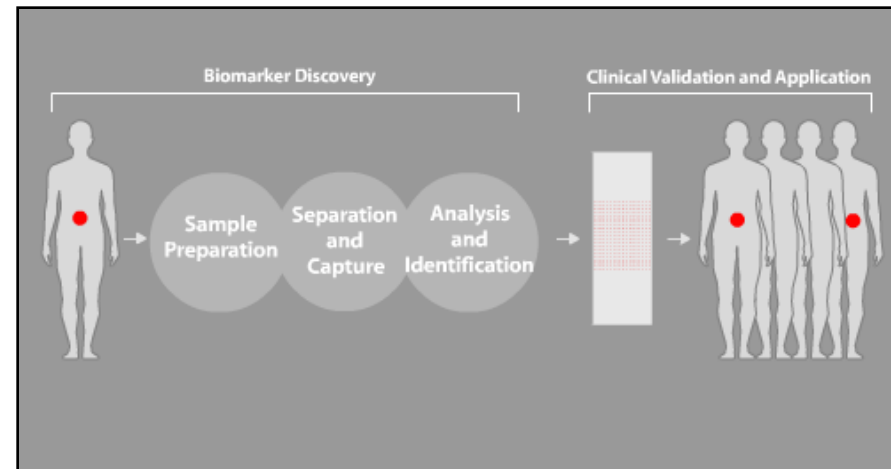


Scott D. Patterson & Ruedi H. Aebersold, Proteomics: the first decade and beyond, *Nature Genetics* 33, 311-323 (2003)

Sources of Variability

- **Experimental Design**
- **Platform evaluation**
 - Technical (resolution, accuracy, dynamic range, sensitivity, reproducibility)
 - Cross verification among platforms
- **Specimen collection, handling, storage and processing**
- **Data acquisition/analysis**
- **Data Reporting**

NCI Online Tutorial



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If proteomics to successfully make its way into clinical diagnostics, universally accepted metrics needed at many steps along pipeline to clarify experimental results and make them comparable.

Run to Run -- Instrument to Instrument -- Lab to Lab

Clinical Proteomic Technologies for Cancer (CPTC = Team Science)

- Launched 4Q/2006
- Define proteomic platform performance characteristics (developing SOPs, reference materials, reagents, standards, etc.) at every step/bottleneck of the biomarker discovery pipeline.
- All to be in Public Domain - Products and Data

<http://proteomics.cancer.gov>

The screenshot shows the homepage of the Clinical Proteomic Technologies for Cancer (CPTC) website. The header includes the National Cancer Institute logo and the text "National Cancer Institute U.S. National Institutes of Health | www.cancer.gov". Below the header is the CPTC logo and navigation links: "Home | Site Map | Contact Us | Search". A secondary navigation bar lists "About CPTC | Programs | Resources & Funding | News & Events | About Proteomics | CPTAC Intranet". The main content area is divided into several sections: "CPTC Programs" with a dropdown menu and four program categories (Technology Assessment, Advanced Platforms and Computational Sciences, Proteomic Reagents and Resource Core, Mouse Initiative); "Summary" with a brief description of the initiative and a CPTC logo; "Special Features" with three sub-sections: "Pioneers of Proteomics" featuring Gilbert Omenn, M.D., Ph.D.; "Interactive Tutorial" for Proteomic Technologies and Cancer; and "Funding Opportunities" available from CPTC; and "Recent news" with several news items including funding opportunities and workshops. At the bottom, there are links for "Home | Text-Only Version | Contact Us | Policies | Accessibility | Search | Site Map" and logos for the National Cancer Institute, FIRSTGOV, and the Proteomic Technologies Teaming Site.

Annual Report
(Year 1)
now available

The image shows the cover of the 2007 Annual Report for Clinical Proteomic Technologies for Cancer. The cover features the CPTC logo at the top, the text "National Cancer Institute" on the left side, and the title "CLINICAL PROTEOMIC TECHNOLOGIES FOR CANCER" at the top right. Below the title is a molecular structure image. At the bottom, it says "2007 ANNUAL REPORT" and "Building the Foundation for Clinical Cancer Proteomics". The U.S. Department of Health and Human Services logo is visible in the bottom left corner.