

Clinical Study Consulting –Business outline-

I. Consulting for Clinical Proteomic Researches including their Design and both selection and usage of Analysis Techniques.

We provide our expertise consultation for study design, cases (number, group), sample preparation methods, analysis techniques, data analysis and statistical tests, validation assays, and so on.

II. Providing our Guidance for Article Preparation on Clinical Proteomic Research.

We provide our expertise guidance for preparation of articles on proteomic research of disease and/or therapeutics using clinical specimens, which helps to attain Ph.D. in Medical School and institutes.

In our research consultation, we provide our services and know-how on analysis strategy with the guidance by the expert in this field. Development of biomarker researches aims to improve outcomes of patients by choosing right treatments to individual patients, and should be of a clinical significance. Experimental strategies need to be built so that biomarkers, reflecting well a clinical significance, can be explored with a high sensitivity with a clear differentiation.

Analysis in clinical proteomic studies must be performed by considering the following requirements:

1. Concept of Study Objectives and Ethical Consideration
2. Study Design and Protocols,
3. Construction of concrete Protocols and Pipeline.

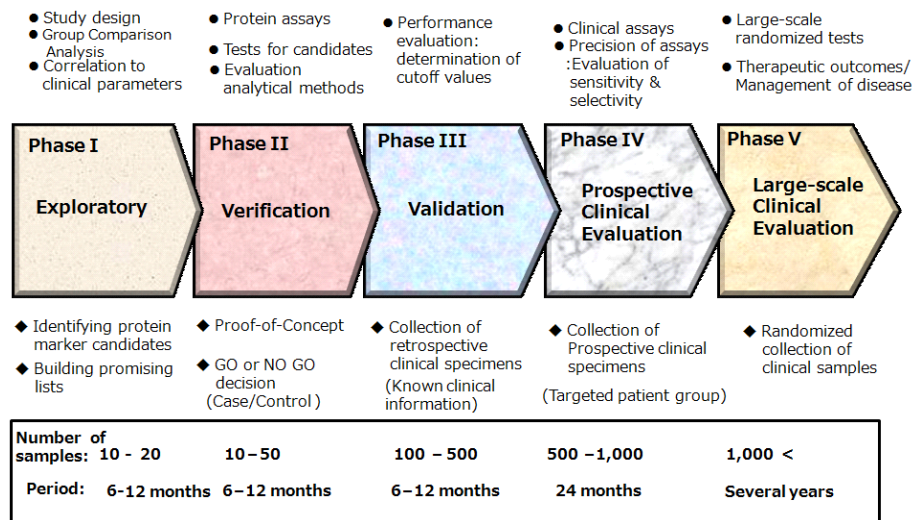


Figure 1. Research pipeline for biomarker development

Development processes can be generally classified from Phase I to V (see Figure 1). In Phase I, a study design aiming to capture biomarkers analysis is constructed, followed by exploratory analysis. Such a discovery study on diagnostic and predictive markers utilizes case groups clinically well evaluated in advance (for example, cases with benign tumors versus cancer cases, good prognosis cases versus poor prognosis cases), and marker candidates are elucidated by:

- A statistical comparison between/among groups, and or
- Correlation to clinical parameters

such as PFS (Progression Free Survival) and OS (Overall Survival) which are linked to outcomes of patients for predictive markers under therapeutics.

Therein, although a relatively small number of clinical specimens (tissue, blood etc.) well-defined specimens need to be chosen. The study period spans from 6 month to 1 year, approximately. This Phase I is the step of Hypothesis Formation. There are various methodologies available from preparation of clinical samples to their analyses, and data to be compared depend on such methodologies.

In Phase II, candidates obtained from Phase I are verified by independent assays for groups, cases versus controls (Proof-of-concept: POC). Around 50-100 clinical specimens (tissue and plasma etc.) are subjected to such (targeted) analyses to evaluate the robustness of a designated assay.

In Phase III, biomarker candidates (or a panel) are evaluated regarding to their performance retrospectively utilizing 100-500 samples with known clinical outcome

already. Therein, a cut-off value for each is determined. Study period is about 6 months to a year.

In Phase IV, the accuracy of biomarker assays is evaluated. Utilizing targeted 500 – 1,000 patients' group the sensitivity and specificity are prospectively evaluated.

Finally, in Phase V, the randomized test is performed for more than 1,000 patients from the targeted population to evaluate the effect on improved outcome, which takes a few years. It is necessary that biomarkers can withstand Regulatory guidelines of the authorities concerning the product, such as safety and quality control.

II. Providing our Guidance for Article Preparation on Clinical Proteomic Research.

We provide our expertise for the efficient preparation (reducing lots of burden) of high-quality articles on proteomic research of disease and/or therapeutics using clinical specimens, which helps to attain Ph.D. in Medical School and institutes.

