'18 Biomarker, Imaging, & QOL Studies Funding Program (BIQSFP)

INTEGRATED BIOMARKER Study Checklist

Integrated Biomarker Studies – These are intended to validate markers for possible use as an integral marker in future trials or in clinical practice. Integrated studies should test a specific hypothesis with a preplanned statistical design and are not hypothesis-generating or exploratory. Integrated studies must be included in the protocol as a secondary objective.

> **Real Time (RT) Integrated Studies** -- Some integrated studies may require that specimens be collected and/or assays be performed during the trial; for example, biomarker assays that require a fresh tumor biopsy or real time processing of a blood or tissue sample.
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> **Non-Real Time (NRT) Integrated Studies** -- Other integrated studies do not require real time assays/tests or sample collection or processing.

INSTRUCTIONS: Please complete a Study Checklist for **each** INTEGRATED biomarker. Refer to the 2018 BIQSFP Guidelines (*https://www.cancer.gov/about-nci/organization/ccct/funding/biqsfp*) for additional information.

1. **STUDY TITLE & PROTOCOL NUMBER:**

2. **OBJECTIVE & HYPOTHESIS:** Briefly describe the BIQSFP study objective, specific hypothesis(es), and role(s) of the assay in the trial. For example, is the biomarker a test for prognosis, a test for response, a stratification factor, a risk classifier or score, or does it have some other use (describe in detail)?

3. **ASSAY SUMMARY INFORMATION:** Complete the table below.

Analyte	Assay	Specimen source/ requirement(s)	Time of specimen collection	Time of specimen analysis

Provide justification for the test to be completed in real time (if applicable). ☐ **Not Applicable**

4. **BACKGROUND & SIGNIFICANCE:** Provide data on the potential clinical utility of the integrated assay as it will be used in the trial.
   A. Provide background information that justifies the use of this assay result as a marker for this trial.
   B. Describe the expected distribution of the biomarker in the study population.
   C. If cut points will be used, specify the cut point(s) and describe how these will be used in the trial. Provide the rationale for the cut point(s) selected. What proportion of subjects is expected to have values above and below the proposed assay value cut points? What magnitude of effect (e.g., treatment benefit) or outcome (e.g., prognosis) is expected for patients with assay results above and below the proposed cut point(s)?
   D. Describe under what conditions treating physicians and/or patients will be able to access the assay test results.

5. **DESCRIPTION OF ASSAY**
   A. Specify the analyte(s), technical platform, and sources of assay components (e.g., reagents, chips, and calibrators).

B. Describe the specimens and anticipated methods for specimen acquisition, fixation or stabilization and processing.
C. Describe the scoring procedures and type of data to be acquired
   - quantitative/ continuously distributed
   - semi-quantitative/ordered categorical
   - qualitative/non-ordered categorical

6. ANALYTICAL PERFORMANCE OF ASSAY

A. For *in vitro* tests, describe the status of studies defining the accuracy, precision, reportable range, reference ranges/intervals (normal values), and failure rate of the assay as it is to be performed in the trial (e.g., performance of test on specimens intended to be used in the clinical trial). Describe the use of positive and negative controls, calibrators, and reference standards for clinical assays. Describe any critical preanalytic variables.
B. If the assay will be performed at more than one site, describe how inter-laboratory variability in the measurements listed in 6A above will be assessed. Describe how these sources of variation will be minimized to maintain performance at all sites within acceptable limits and to prevent drift or bias in assay.
C. Applicants are encouraged to submit an assay Standard Operating Procedure (SOP) as an appendix, to support validation of the test(s) being proposed, if appropriate. If a laboratory validation study has been performed to meet the requirements of CLIA, please submit that data.

7. STATISTICAL PLAN

A. Identify the clinical endpoints and the biomarker measurements involved in the analysis
B. Specify the case selection method if only a subset of patients will be included.
C. Justify the numbers of patients to be studied and biomarker assays/tests to be performed
D. Describe the statistical analysis methodology and underlying assumptions.
E. If the trial objectives include an evaluation of the association of the integrated marker with a new clinical endpoint or factor not previously studied, the statistical section of the concept should explain how the magnitude of the association or effect will be measured and provide power calculations for any statistical tests that are planned.

8. PERFORMANCE SITE: Identify the specific individual(s) and laboratory(ies) who will perform the assay(s) for the trial.

9. BUDGET

A. Include a budget that clearly details the direct and facilities and administrative costs requested using the PHS 398 budget form (***http://grants.nih.gov/grants/funding/phs398/phs398.html***) along with a narrative justifying each requested cost.
B. Include cost comparisons to justify the laboratory site chosen to complete the assay.
C. Provide plans for cost-sharing with entities that might eventually commercialize the test (when appropriate.)

10. NIH BIOSKETCH -- Include an NIH biosketch for each study Principal Investigator (PI). Form SF424 can be found at: ***https://grants.nih.gov/grants/forms/biosketch.htm***

Please complete and submit to the appropriate CTEP/DCP PIO and to the BIQSFP mailbox (ncibiqsfp@mail.nih.gov).