**Template for Reporting Results of Quantitative IHC Biomarker Testing of Specimens From Patients With Carcinoma**

**Version:** 1.1.0.0

**Protocol Posting Date:** November 2021

The use of this protocol is recommended for clinical care purposes but is not required for accreditation purposes.

**Authors**

Alexander Baras, MD, PhD\*; Joseph D. Khoury, MD; Brett W. Baskovich, MD; Andrew M. Bellizzi, MD; George G. Birdsong, MD; Patrick L. Fitzgibbons, MD, FCAP; Frank Schneider, MD; Raja R. Seethala, MD.

With guidance from the CAP Cancer and CAP Pathology Electronic Reporting Committees.
\* Denotes primary author.

**Accreditation Requirements**

Completion of the template is the responsibility of the laboratory performing the biomarker testing and/or providing the interpretation. When both testing and interpretation are performed elsewhere (eg, a reference laboratory), synoptic reporting of the results by the laboratory submitting the tissue for testing is also encouraged to ensure that all information is included in the patient’s medical record and thus readily available to the treating clinical team. This template is not required for accreditation purposes. At this point, the breast biomarker template should be used for ER, PR, Ki67, and HER2 reporting. The purpose of this template is to support a generic and extensible reporting framework for various IHC based biomarkers.

**Summary of Changes**

**v 1.1.0.0**

* Added accreditation requirements statement
* Reordering of the biomarkers
* Added Controls questions for HER2 and Ki-67
* Addition of a generic repeating section for reporting additional biomarkers

**Reporting Template**

**Protocol Posting Date: November 2021**

**Select a single response unless otherwise indicated.**

**CASE SUMMARY: (Quantitative IHC Biomarker Reporting)**

**SPECIMEN INFORMATION**

**+Case Identifier: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Block Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Anatomic Site: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Diagnosis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Biomarker(s) Assessed (select all that apply)**

\_\_\_ PD-L1 IHC

**PD-L1 IHC Results**

**+Interpretation**

\_\_\_ Positive

\_\_\_ Negative

\_\_\_ Cannot be determined (indeterminate)

**+Percentage of Tumor Cells with Staining (TPS): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Number of Tumor and Immune Cells with Staining per 100 Tumor Cells (CPS): \_\_\_\_\_\_\_\_**

**+Specify Percentage of Tumor-associated Immune Cells with Staining: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Specify Percentage of Tumor Area Occupied by Tumor-associated Immune Cells:\_\_\_\_\_**

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PD-L1 Methods**

**+Antibody**

\_\_\_ 22C3

\_\_\_ SP142

\_\_\_ SP263

\_\_\_ 28-8

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Controls (select all that apply)**

\_\_\_ Internal control cells present; expected immunoreactivity

\_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_ MMR IHC

**MMR IHC Results**

**+Interpretation**

\_\_\_ No loss of nuclear expression of MMR proteins

\_\_\_ Loss of nuclear expression of MLH1 and PMS2

\_\_\_ Loss of nuclear expression of MSH2 and MSH6

\_\_\_ Loss of nuclear expression of only PMS2 or MSH6

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Cannot be determined (indeterminate)

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**MMR Staining**

**+Nuclear MLH1 staining**

\_\_\_ Intact

\_\_\_ Loss

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Nuclear PMS2 staining**

\_\_\_ Intact

\_\_\_ Loss

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Nuclear MSH2 staining**

\_\_\_ Intact

\_\_\_ Loss

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Nuclear MSH6 staining**

\_\_\_ Intact

\_\_\_ Loss

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**MMR IHC Methods**

**+Controls (select all that apply)**

\_\_\_ Internal control cells present; expected immunoreactivity

\_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_ HER2 IHC

**HER2 IHC Results**

**+Interpretation**

\_\_\_ Positive

\_\_\_ Negative

\_\_\_ Equivocal

\_\_\_ Cannot be determined (indeterminate)

**+Scoring System**

\_\_\_ Breast

\_\_\_ Gastric

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Score**

\_\_\_ 0

\_\_\_ 1+

\_\_\_ 2+

\_\_\_ 3+

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Specify Percentage of Cells with Uniform Intense Complete Membrane Staining: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**HER2 IHC Methods**

**+Antibody**

\_\_\_ HercepTest

\_\_\_ 4B5

\_\_\_ SP3

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Controls**

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_ Estrogen Receptor IHC

**Estrogen Receptor IHC Results**

**+Interpretation**

\_\_\_ Positive

\_\_\_ Negative

\_\_\_ Cannot be determined (indeterminate)

**+Specify Tumor Cell Percent Positive: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Tumor Cell Staining Intensity**

\_\_\_ Strong

\_\_\_ Moderate

\_\_\_ Weak

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Estrogen Receptor IHC Methods**

**+Antibody**

\_\_\_ SP1

\_\_\_ 6F11

\_\_\_ 1D5

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Controls (select all that apply)**

\_\_\_ Internal control cells present; expected immunoreactivity

\_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_ Progesterone Receptor IHC

**Progesterone Receptor IHC Results**

**+Interpretation**

\_\_\_ Positive

\_\_\_ Negative

\_\_\_ Cannot be determined (indeterminate)

**+Specify Tumor Cell Percent Positive: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Tumor Cell Staining Intensity**

\_\_\_ Strong

\_\_\_ Moderate

\_\_\_ Weak

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Progesterone Receptor IHC Methods**

**+Antibody**

\_\_\_ 1E2

\_\_\_ 636

\_\_\_ SP2

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Controls (select all that apply)**

\_\_\_ Internal control cells present; expected immunoreactivity

\_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_ Ki-67 IHC

**Ki-67 IHC Results**

**+Specify Tumor Cell Percent Positive: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ki-67 IHC Methods**

**+Antibody**

\_\_\_ MIB1

\_\_\_ Other (specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**+Controls**

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information (eg., Laboratory-developed Test): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Specify Quantitative Imaging Analytics Performed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Other Biomarker(s) (may repeat for up to 10 biomarkers)**

**Specify Biomarker : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Results**

**+Interpretation**

\_\_\_ Positive

\_\_\_ Negative

\_\_\_ Cannot be determined (indeterminate)

**+Tumor Cell Staining Intensity : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**+Comments : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Methods**

**+Specify Antibody : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+Controls  (select all that apply)**

\_\_\_ Internal control cells present; expected immunoreactivity

\_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls

\_\_\_ External controls available, expected immunoreactivity

\_\_\_ External controls available; no immunoreactivity in expected cells

**+Assay Information**

\_\_\_ Food and Drug Administration (FDA) cleared test / vendor (specify) : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_ Laboratory-developed test

**+Specify Quantitative Imaging Analytics Performed : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**COMMENTS**

**Comment(s) : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**