

| Patient                   | Specimen Information                | Ordered By |
|---------------------------|-------------------------------------|------------|
| Name: Ryan Sutton         | Primary Tumor Site: Pancreatic      |            |
| Date of Birth: 2003-10-26 | Specimen Site: Regional lymph nodes |            |
| Sex: Male                 | Specimen ID: 8576                   |            |
| Case Number: 2504         | Specimen Collected: 2024-04-07      |            |
| Diagnosis: Adenocarcinoma | Test Initiated: 2024-04-07          |            |

| Biomarker | Method | Analyte   | Result              | Therapy association |  | Biomarker level |
|-----------|--------|-----------|---------------------|---------------------|--|-----------------|
| ER        | IHC    | protein   | Positive   3+, 100% | BENEFIT             | abemaciclib, palbociclib, ribociclib, endocrine, therapy, everolimus   | level 2         |
| PR        | IHC    | protein   | Positive   2+, 95%  | BENEFIT             | abemaciclib, palbociclib, ribociclib, endocrine therapy  | level 2         |
| TMB       | seq    | DNA tumor | 13 m/Mb High        | BENEFIT             | pembrolizumab  | level 2         |
| ERBB2     | IHC    | Protien   | Negative   0        | LACK OF BENEFIT     | trastuzumab, ado-trastuzumab emtansine, pertuzumab, fam-trastuzumab deruxtecan-nxki, lapatinib, neratinib, tucatinib | level 1         |

Cancer-Type Relevant Biomarkers

| BioMarker    | Method | Analyte   | Result                |
|--------------|--------|-----------|-----------------------|
| PD-L1(SP142) | IHC    | Protien   | Positive  1+, 86%     |
| AR           | IHC    | Protien   | Negative  2+, 22%     |
| ZEB2         | Seq    | RNA-Tumor | Mutation not detected |

Genomic Signatures

| BioMarker                            | Method | Analyte   | Result  |
|--------------------------------------|--------|-----------|---|
| Microsatellite instability           | Seq    | DNA tumor | Low   |
| Tumor mutational burden              | Seq    | DNA tumor | 13 mutations/Mb High                              |
| Genomic loss of heterozygosity (LOH) | Seq    | DNA tumor | High - 20% of tested genmoic segments exhibit LOH |

Genes Tested with Pathogenic Alterations or likely Pathogenic Alterations

| Gene  | Method | Analyte   | Variant Interpretation | Protien Alteration | Exon | DNA Alteration | Allele Frequency % |
|-------|--------|-----------|------------------------|--------------------|------|----------------|--------------------|
| HDAC2 | Seq    | DNA tumor | Benign                 | p.H362R            | 9    | c.1085A>G      | 29.74              |
| H3.3  | Seq    | DNA tumor | Benign                 | p.D839E            | 3    | c.2027A>G      | 33.32              |
| FOXL2 | Seq    | DNA tumor | Likely Benign          | p.R140W            | 13   | c.515G>A       | 17.39              |

Gene Variants of Unknown Significance

| Gene  | Method | Analyte   | Variant Interpretation            | Protien Alteration | Exon | DNA Alteration | Allele Frequency % |
|-------|--------|-----------|-----------------------------------|--------------------|------|----------------|--------------------|
| KLF1  | Seq    | DNA tumor | Variant of uncertain significance | p.R1012X           | 2    | >              | 14.62              |
| DPYD  | Seq    | DNA tumor | Variant of uncertain significance | p.E1705V           | 7    | c.5439G>T      | 14.92              |
| ARID2 | Seq    | DNA tumor | Variant of uncertain significance | p.A374E            | 14   | 1              | 16.44              |
| IDH2  | Seq    | DNA tumor | Variant of uncertain significance | p.M1R              | 17   | c.2T>G         | 1.83               |
| NTRK1 | Seq    | DNA tumor | Variant of uncertain significance | p.W266*            | 20   | c.798G>A       | 4.53               |

Immunohistochemistry Results

| Biomarker    | Result            | Biomarker | Result            |
|--------------|-------------------|-----------|-------------------|
| ERBB2        | Negative  3+, 82% | PTEN      | Negative  2+, 44% |
| PD-L1(SP142) | Positive  1+, 48% | ER        | Positive  3+, 87% |
| MSH6         | Negative  1+, 8%  |           |                   |
| MSH2         | Positive  3+, 61% |           |                   |
| MLH1         | Positive  1+, 13% |           |                   |

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

PRKCA    HDAC1    DICER1    FGFR4

Specimen Information

Specimen ID: 8576

Specimen Collected: 2024-04-07

Specimen Recieved: 2024-04-07

Testing Initiated: 2024-04-07

Gross Description: 8576

Pathological Diagnosis:

Left breast, central, 12:00, suspicious mass, 12-gauge core needle biopsy: Infiltrating moderately-differentiated mammary carcinoma, grade 2, Nottingham score 6 (architectural grade 3, nuclear grade 2, mitotic figures 1).

Dissection Information:

Molecular testing of this specimen was performed after harvesting of targeted tissues with an approved manual microdissection technique. Candidate slides were examined under a microscope and areas containing tumor cells (and separately normal cells, when necessary for testing) were circled. A laboratory technician harvested targeted tissues for extraction from the marked areas using a dissection microscope.

Clinical Trials Connector

| CHEMOTHERAPY CLINICAL TRIALS |           |        |           |   |
|------------------------------|-----------|--------|-----------|---|
| Drug class                   | Biomarker | Method | Analyte   | Investigational agents  |
| Anti hormonal therapy        | ER        | IHC    | protein   | anastrozole, letrozole, exemestane, fulvestrant, tamoxifen, goserelin, leuprolide |
| Anti hormonal therapy        | PR        | IHC    | protein   | anastrozole, letrozole, exemestane, fulvestrant, tamoxifen, goserelin, leuprolide |
| Anti inflammatory agents     | PIK3CA    | NGS    | DNA tumor | aspirin   |

| TARGETED THERAPY CLINICAL TRIALS |           |        |           |  |
|----------------------------------|-----------|--------|-----------|--|
| Drug class                       | Biomarker | Method | Analyte   | Investigational agents   |
| Akt inhibitors                   | ARID1A    | NGS    | DNA tumor | AZD5363, MK-2206, ipataserib   |
| immunomodulatory agents          | TMB       | NGS    | DNA tumor | avelumab, atezolizumab, durvalumab, ipilimumab, nivolumab, pembrolizumab |
| PARP inhibitors                  | NBN       | NGS    | DNA tumor | BGB-290, BMN-673, olaparib, rucaparib, talazoparib                       |
| Akt/mTor inhibitors              | PIK3CA    | NGS    | DNA tumor | AZD5363, BYL719, MK-2206, ipataserib, everolimus, temsirolimus           |