

# Certificate of Analysis

For Research Use Only  
Not for Use in Diagnostic Procedures

Product Description: Seraseq™ Tri-Level Tumor Mutation DNA Mix v2, RUO  
 Material Number: 0710-0097 Batch Number: 10329443  
 Volume: 25 µL Concentration: 25 ng/µL  
 Date of Manufacture: 28-Mar-2018 Expiration Date: 28-Mar-2020

Test Method for Concentration: Qubit dsDNA BR Assay  
 Average Concentration (ng/µL): 24.8 ng/µL  
 Test Method for Variant Allele Frequency: In house validated, allele specific, digital PCR assays

| 4% Tier          |                            |
|------------------|----------------------------|
| Mutation         | Avg. dPCR Allele Frequency |
| BRAF COSM476     | 4.0                        |
| EGFR COSM12378   | 4.2                        |
| EGFR COSM6225    | 4.2                        |
| EGFR COSM6240    | 4.2                        |
| FGFR3 COSM715    | 4.2                        |
| FLT3 COSM783     | 3.8                        |
| FOXL2 COSM33661  | 4.2                        |
| IDH1 COSM28747   | 4.3                        |
| PDGFRA COSM28053 | 4.2                        |
| PIK3CA COSM775   | 3.7                        |
| PIK3CA COSM12464 | 3.5                        |
| RET COSM965      | 3.8                        |
| TP53 COSM18610   | Not Assayed                |

| 10% Tier        |                               |
|-----------------|-------------------------------|
| Mutation        | Average dPCR Allele Frequency |
| AKT1 COSM33765  | 9.8                           |
| APC COSM13127   | 8.3                           |
| APC COSM18561   | 8.1                           |
| ATM COSM21924   | 11.3                          |
| ERBB2 COSM682   | 8.3                           |
| GNA11 COSM52969 | 9.4                           |
| GNAQ COSM28758  | 8.0                           |
| KIT COSM1314    | 10.5                          |
| MPL COSM18918   | 10.1                          |
| NCOA4-RET       | 8.7                           |
| PDGFRA COSM736  | 10.4                          |
| PIK3CA COSM763  | 8.2                           |
| SMAD4 COSM14105 | 9.2                           |
| TPR-ALK         | 11.4                          |

| 7% Tier        |                               |
|----------------|-------------------------------|
| Mutation       | Average dPCR Allele Frequency |
| CTNNB COSM5664 | 6.7                           |
| EGFR COSM6224  | 7.4                           |
| GNAS COSM27887 | 6.6                           |
| JAK2 COSM12600 | 6.1                           |
| KRAS COSM521   | 6.3                           |
| NPM1 COSM17559 | 5.0                           |
| NRAS COSM584   | 6.8                           |
| PTEN COSM4986  | 5.6                           |
| PTEN COSM5809  | 5.6                           |
| TP53 COSM10648 | 6.5                           |
| TP53 COSM6530  | 5.9                           |
| TP53 COSM10662 | 6.1                           |
| TP53 COSM10660 | 6.1                           |

**Approval:**

Prepared By *Rojasna p*

Date *25 APR 2018*

QA Verified By *Cheryl G. Hartman*

Date *4/25/18*