

PLEASE NOTE:

THESE REAGENTS MUST NOT BE SUBSTITUTED FOR THE MANDATORY POSITIVE AND NEGATIVE CONTROL REAGENTS PROVIDED WITH MANUFACTURED TEST KITS.

NAME AND INTENDED USE

The Seraseq[®] ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% are formulated for use with PCR (qPCR or dPCR) as well as targeted Next Generation Sequencing (NGS) assays that detect cancer-relevant somatic mutations present in the blood stream as circulating cell-free tumor DNA. This product is intended as a quality reference material for BRAF-based translational and disease research testing to monitor library preparation, sequencing, and variant detection under a given set of bioinformatics pipeline parameters. This product is *For Research Use Only. Not for use in diagnostic procedures.*

REAGENTS

Table 1. Seraseq ctDNA BRAF V600E Mutation Mix at AF1% & AF0.1%.

Material No.	Product
0710-0716	Seraseq ctDNA BRAF V600E Mutation Mix AF1%
0710-0717	Seraseq ctDNA BRAF V600E Mutation Mix AF0.1%

Each Material # is available as an individual product. Information in this Package Insert applies to both products.

WARNINGS AND PRECAUTIONS

For Research Use Only. Not for use in diagnostic procedures.
CAUTION: Handle Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% as though they are capable of transmitting infectious agents. This product is formulated using a reference cell line, GM24385, which is a B-lymphocytic, male cell line from the Personal Genome Project offered by the NIGMS Human Genetic Cell Repository (<https://catalog.coriell.org/1/NIGMS>).

Safety Precautions

Use Centers for Disease Control and Prevention (CDC) recommended universal precautions for handling reference materials and human specimens¹. Do not pipette by mouth; do not smoke, eat, or drink in areas where specimens are being handled. Clean any spillage by immediately wiping up with 0.5% sodium hypochlorite solution. Dispose of all specimens and materials used in testing as though they contain infectious agents.

Handling Precautions

Do not use Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% beyond the expiration date. Avoid contamination of the product when opening and closing the vial.

STORAGE INSTRUCTIONS

Store Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% frozen at -20°C or colder. Aliquoting of the product into low DNA binding tubes may be advisable to limit the number of freeze-thaw cycles. Shelf life when stored under these conditions is two years from date of manufacture.

INDICATIONS OF REAGENT INSTABILITY OR DETERIORATION

Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% is a mixture of DNA and synthetic DNA constructs. When thawed, it should appear as a clear liquid. Alterations in this appearance may indicate instability or deterioration of the product and vials should be discarded.

PROCEDURE

Materials Provided

Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% are derived from DNA purified from a reference cell line, GM24385, plus constructs containing variants mixed at a defined allele frequency. Processing of the purified DNA is used to produce an average DNA fragment size of approximately 170 base pairs (Figure 1). The purified DNA is present in a 1 mM Tris, 0.1 mM EDTA, 10 mM KCl, pH 8.0 aqueous buffer. Material is ready to use in NGS assays in steps that follow circulating cell-free DNA isolation. No further purification or DNA isolation is needed provided that the assays are compatible with this buffer.

Materials Required but not Provided

Refer to instructions supplied by manufacturers of the test kits to be used.

Instructions for Use

Thaw the product vial on ice. Mix by vortexing to ensure a homogenous solution and spin briefly. Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% may generally be input directly into library preparation following procedures used for clinical specimens. Refer to your usual assay procedures in order to determine the amount of material to use.

EXPECTED RESULTS & INTERPRETATION OF RESULTS

Table 2 indicates each of the somatic deletions represented in Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1%. Detection of mutations may differ across different NGS panels and different test reagent lots. While the presence and frequency of each mutation in this product is evaluated during manufacture using functional NGS or digital PCR assays, there may be differences in observed allele frequencies due to assay characteristics. Each laboratory must establish assay-specific expected values for each lot of Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1%. When results for the product are outside of the established acceptance range, it may indicate unsatisfactory test performance. Possible sources of error include: deterioration of test kit reagents, operator error, faulty performance of equipment, contamination of reagents, or changes in bioinformatics pipeline parameters. Additional support documents are available online at www.seracare.com/oncology.

LIMITATIONS OF THE PROCEDURE

Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% MUST NOT BE SUBSTITUTED FOR THE CONTROL REAGENTS PROVIDED WITH MANUFACTURED TEST KITS. TEST PROCEDURES provided by manufacturers must be followed closely. Deviations from procedures recommended by test kit manufacturers may produce unreliable results. This product is offered for Research Use Only. Not for use in diagnostic procedures. Data are provided for informational purposes. SeraCare Life Sciences does not claim that others can duplicate test results exactly. Note that based on your particular assay protocol and regions interrogated, variants other than

BRAF V600E specified in this product may be detected at varying allele frequencies. Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1% are not calibrators and should not be used for assay calibration. Adverse shipping and/or storage conditions or use of expired product may produce erroneous results.

REFERENCES

1. Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

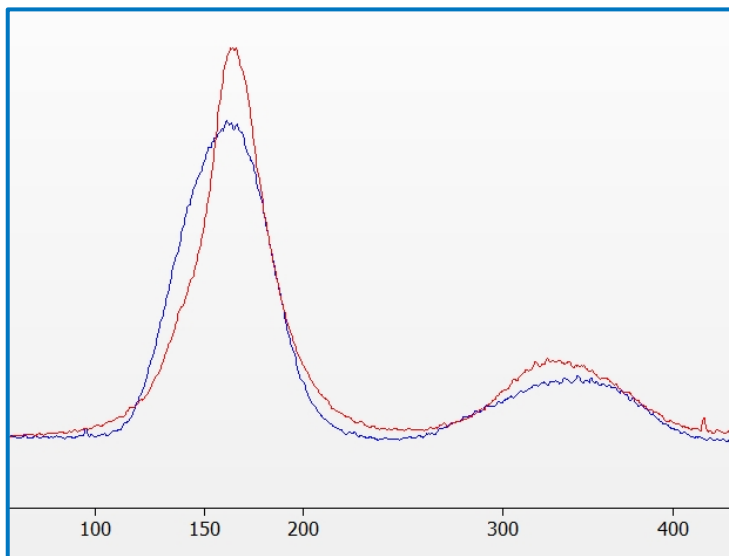


Figure-1: Representative DNA fragment size distribution for Seraseq ctDNA BRAF V600E Mutation Mix AF0.1% (blue) versus natural circulating cell-free DNA (red).

Table 2: Somatic mutation(s) present in Seraseq ctDNA BRAF V600E Mutation Mix AF1% & AF0.1%

Gene	Gene ID	AA Change	HGVS	Variant Type	Target Allele Freq (AF)
BRAF	COSM476	p.V600E	c.1799T>A	SNV	1%
BRAF	COSM476	p.V600E	c.1799T>A	SNV	0.1%