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# DNA TEST REPORT – MEDGENOME LABORATORIES

| | | | |
|---|---|---|---|
| Order ID/Sample ID: | **100423/246596; 100423/246591** | Sample Type: | Blood (2.5 ml) in EDTA tube |
| Full name/Ref no: | **Mr. Ankur Bhardwaj (246596)**<br>**Mr. Roop Singh (236639)** | Date & time of Sample Collection: | NA |
| Referring Clinician: | Dr. Amit Verma,<br>Molq,<br>Gurgaon | Date & time of Sample Receipt:<br>Order Date & time<br>Date & time of Report: | 26-02-2019; 04.25 PM<br>27-02-2019; 04.55 PM<br>02-04-2019; 06.30 PM |
| **Test Requested:** | **Additional family member (investigational) testing (MGM1157)** | | |

## CLINICAL DIAGNOSIS / SYMPTOMS / HISTORY

The index patient, Ms. Krishnadevi Bhardwaj with no family history of cancer. She was found to harbor a heterozygous variation in the *BRCA2* gene. Her son and brother are being evaluated for the same variation.

## RESULT SUMMARY

Analysis for: **Variation detected by Next Generation Sequencing in the *BRCA2* gene of Ms. Krishnadevi Bhardwaj (90971)**

| Sl. no. | Sample ID | Name, Gender, Age | Relationship to index patient | Gene Name | Exon / Intron | Variation reported in the index patient | Variation detected in family member* | Clinical condition of family member |
|---|---|---|---|---|---|---|---|---|
| **1.** | **246596** | **Mr. Ankur Bhardwaj, Male, 32yrs** | **Son** | ***BRCA2*** | **Exon 3** | **chr13:32893238G>G/A (HET); c.92G>G/A; p.Trp31Ter** | **Present (Heterozygous)** | **Asymptomatic** |
| **2.** | **246591** | **Mr. Roop Singh, Male, 64yrs** | **Brother** | | | | **Present (Heterozygous)** | **Asymptomatic** |

* The variant analysis in Sanger sequencing is based on *the BRCA2* Reference sequence ENST00000544455 [1]. The exon number and nucleotide numbers will differ based on the reference file chosen and the database used.

## INTERPRETATION

A heterozygous nonsense variation in exon 3 of the *BRCA2* gene **(chr13:32893238G>G/A; c.92G>G/A)** that results in a stop codon and premature truncation of the protein at codon 31 **(p.Trp31Ter)** was detected in index patient, Ms. Krishnadevi Bhardwaj (Sample ID: 90971) by NGS and was further validated by Sanger sequencing.

The same pathogenic variation was detected in heterozygous condition in the asymptomatic son of the index patient, Mr. Ankur Bhardwaj (Fig. 1 A) and asymptomatic brother of the index patient, Mr. Roop Singh (Fig. 1 B). **Males with *BRCA2* gene variations are at increased risk of developing cancers of prostate and breast [2]. Incomplete penetrance and variable age of cancer development have been reported in *BRCA2* gene variants [3]. Hence the results have to be carefully correlated with clinical condition of the individuals tested.**

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## TEST METHODOLOGY

Exon 3 of the *BRCA2* gene was PCR - amplified and the product was sequenced using Sanger sequencing. In case of mosaicism in leucocytes, the detection limits of Sanger sequencing for presence of variation is ~12%. The sequence was aligned to available reference sequence ENST00000544455 [1] to detect variation using variant analysis software programs.

**Report prepared by:**

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Senior Genome Analyst

**Results verified by:**

**Dr. Sheetal Sharda, MD (Paediatrics), DM (Medical Genetics), MNAMS.**
Consultant - Clinical Geneticist

**Report released by:**

**V L Ramprasad, PhD**
Chief Operating Officer

## REFERENCES

1. ENSEMBL: http://www.ensembl.org
2. Liede, A., Karlan, B. and Narod, S. (2004). Cancer Risks for Male Carriers of Germline Mutations in *BRCA2* or *BRCA2*: A Review of the Literature. Journal of Clinical Oncology, 22(4), pp.735-742.
3. Petrucelli N, Daly MB, Pal T. BRCA1- and BRCA2-Associated Hereditary Breast and Ovarian Cancer. 1998 Sep 4 [Updated 2016 Dec 15]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2019

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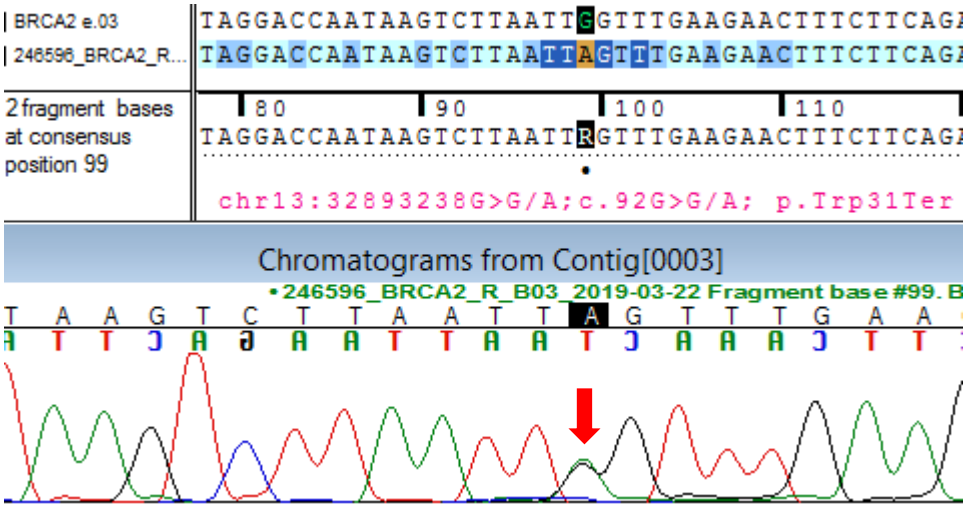
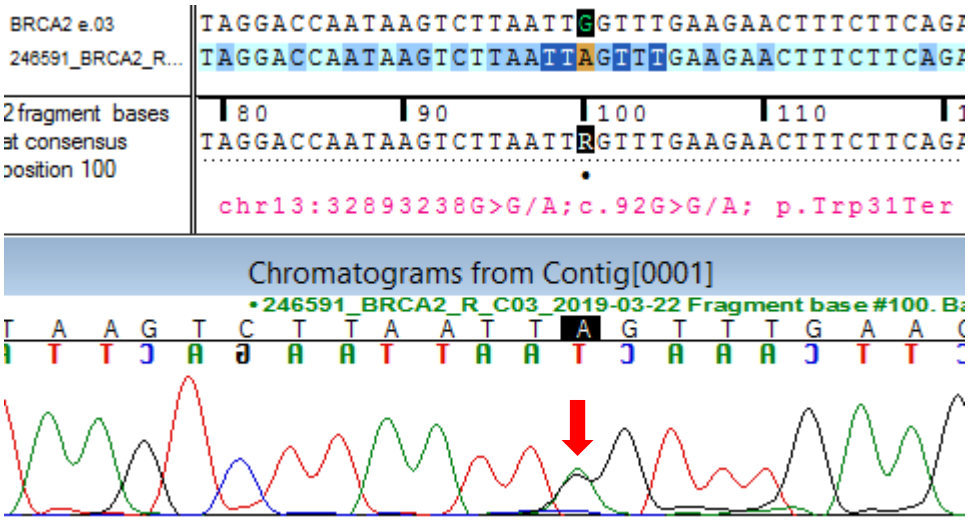
## ANNEXURE-I

**Fig1: Sequence chromatogram and alignment to the reference sequence showing the variation in exon 3 of the *BRCA2* gene (chr13:32893238G>G/A; c.92G>G/A; p.Trp31Ter) detected in heterozygous condition in Mr. Ankur Bhardwaj (A) and Mr. Roop Singh (B).**

**A. 246596 – Son of the index patient (Mr. Ankur Bhardwaj)**




**B. 246591 – Brother of the index patient (Mr. Roop Singh)**

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