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RMC Reg. No. 619/8800

Medical Oncology Specialization
Tata Memorial Hospital, Bombay
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N-995

W-60

20/10/2015

Sh Pabbu Baim — 36

D Ph CML CP / G1PAP 1 G firm Oct 2012
En CHR / CMR (20 04 15)

No myc
Orl Glx fem ASEI
N. Follw I write
No st. tendon
H/c / Ahd. N

150/23 PCT/1420
400/4Bx 19/01/17 No myc
Orl mm
11/11/15 N. myc Rt 12345 / 12.3/6.9 PCT/160.0
Orl mm x 4wk / 2/11/2 CRe/sc
+ 12345 x 4wk / 13.1/2.3 P66 / 18/01/212 CRe/sc

Rx C. Glivec / 400 100 (VEENAY)
X C Dmy... 100 OD
T. Folic acid (1) mg OD
C Becolac ... 1 mg OD
C. E-Cod 1 ... 13.9 / 7.8 P66 / 220

26/01/16 / No myc Orl mm x 12345 x 4wk / 13/7 / 7.1 P65 / 196 / 23/02/ CRe/sc
17/11 CRe/sc
17/02/16 No myc Orl mm x 12345 x 4wk / 10.7 / 10/03 / CRe/sc ... 13/7 2 PC2/174
O... 7/04/16
1. R/D - LL F7-SC file 400/4Bx 06/04/2016 / No myc Orl mm + 12345 x 4wk / 04/05 / CRe/sc
10/05/2016 / No myc Orl mm x 12345 x 4wk / 07/06 / CRe/sc
13/06/2016 / No myc Orl mm x 12345 x 4wk / 11/07 / CRe/sc
400/2Bx 19/07/2016 / No myc Orl mm x 12345 x 4wk / 16/08 / CRe/sc
400/2Bx 12/08/16 / No myc Orl mm x 12345 x 4wk / 17/09 / CRe/sc
21/09/16 / No myc Orl mm x 12345 x 4wk / 19/10 / CRe/sc
12/10/16 No myc Orl mm x 12345 x 4wk / 14/11 / CRe/sc
400/2Bx 17/11/16 / No myc Orl mm x 12345 x 4wk / 15/12 / CRe/sc
22/12/16 No myc Orl mm x 12345 x 4wk / 23/01 / CRe/sc
400/2Bx 26/01/17 No myc Orl mm x 12345 x 4wk / 23/02 / CRe/sc
Bcr/ABL RT-PCR ... 23/02/17 No myc Orl mm x 12345 x 4wk / 23/03 / CRe/sc
... 3/10/17
400/4Bx

0141327700

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H-156
W-46

Parbhu Saini 17/10/2012
34

D. CML-CP
For EM / for GIPAP/Glivec

c/o fever
weakness
Pallor No LN, Ht
Sternal tend +
H-SX
C- clear
Abd < Liv 4cm
Sp 7cm

120/400.0/128.0
P35 E03 L04 M02 B04
BCC0 MC05 MM 014 PM E02 B105
... 66.5 / ... / 12.10.12
For ... Hyd / ... / Bcr 05 PM 02 B1 0 2

Rx
C. Glivec 400 1.0D ✓
C. Omez-D 1.0D. Ac
T. Adcob it 1.0D
C. Becadex ... 1 ...
× T. Citlonc 100 1.0D
× C. Myelostat 500 2-0D
× 3 wks / 07/11 CBC ... MF

03/11/2012 c/o fever OK/ ...
T. Lumerac ... 1 2 3 4
T. Nize ...] 5 day

05/11/2012 C Glivec 400/4 ...

04/12/2012 ... on / ... 1 2 3 4 × 4 wk / 03/12 CBC ...

20/12/2012 c/o fever ... lumbar area
o/e No ... 4U ... Abd ...
× 4 wk / 31/12 CBC ...

-Adv BT CT PT PTT
Urine R/E
FP Abd. KUB
USG KUB+P

24/12/2012 ? Renal colic / to see Dr. Vinay Tomar for ...
...
...

CODE : C000014810

'T'S NAME AND ADDRESS :
NT MALHOTRA (DR)
ARAIN SINGH CIRCLE,

PUR 340001
AJASTHAN INDIA
0141-3245299

CAP ACCREDITED

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MAHARASHTRA, INDIA
Tel : 022 6780 1177, 1-800-222-660, Fax : 022 - 67801212
CIN - U74899DL1995PLC070603
Email : srl.mumbai@srl.in

PATIENT NAME : PAPPU RAM SAINI

ACCESSION NO : **0002OD047071** AGE : 36 Years SEX : Male PATIENT ID :

DRAWN : 14/04/2015 17:02 RECEIVED : 16/04/2015 03:26 DATE OF BIRTH :

REFERRING DOCTOR : DR. Hament Malhotra REPORTED : 20/04/2015 15:28

Test Report Status **Final** CLIENT PATIENT ID : NSM000450/15

Results

MOLECULAR BIOLOGY

BCR-ABL TRANSCRIPT QUANTIFICATION

BCR-ABL TRANSCRIPT QUANTIFICATION		
METHOD : REAL TIME PCR	0.00	%

9829989993

Interpretation(s)
BCR-ABL TRANSCRIPT QUANTIFICATION-
Real Time Reverse Transcriptase Polymerase Chain Reaction
The BCR/ ABL gene rearrangement is found in 95% of patients with CML and 5% of children & 15% to 30% of adults with acute lymphoblastic leukemia(ALL).These cases are characterized by an aberrant gene rearrangement between the ABL protooncogene on chromosome 9 and the breakpoint cluster region (BCR) on chromosome 22.
Clinical Utility: Quantitative analysis of BCR/ABL transcript levels by Real Time PCR helps to monitor patients on therapy. Baseline and follow up assessments help to reliably identify the degree of molecular response, early impending relapse, and resistance to therapy.During early chronic phase, Major Molecular Response (MMR), which refers to a 3 fold reduction from a standard baseline value , is usually considered as a successful treatment outcome. The ultimate goal of treatment is to achieve Complete Molecular Response (CMR),which refers to not detectable (or 0%) BCR/ABL transcript levels by Real Time PCR.
Interpretation: BCR-ABL transcript quantification is expressed as a % of the control gene, i.e., ABL. The sample showing amplification curve for both BCR/ABL transcript and control gene are considered as positive for the test and are reported as a % expression of BCR/ABL over ABL. The sample showing no amplification curve for BCR/ABL target but showing amplification curve for the control are considered as negative for the test and are reported as 0.0% expression. In the absence of amplification curve for the control gene, the test is reported as invalid, denoting degradation of RNA. This test is not configured to distinguish between the major and minor breakpoints. The analytical sensitivity of this test is 1 tumor cell in 1,00,000 normal cells.
Recommendations: Quantitative analysis of BCR/ABL transcript level by Real time PCR should ideally be performed before the start of therapy in order to determine the baseline value. The results of this test should always be interpreted in the context of the clinical findings and other haematological & cytogenetic investigations. Samples must be received in the lab within 48 hrs of collection. Specimen processing after 48 hrs of collection may lead to erroneous results due to labile nature of RNA.
Limitations: PCR is a highly sensitive technique; common reasons for paradoxical results are contamination during specimen collection, selection of inappropriate specimens and inherent PCR inhibitors in the specimen.

Note: This test is standardized and validated at SRL Limited

References
1. Br J Hematology (1999); 107:587-99.
2. Haematologica (2000); 85:1248-54.
3. Haematology (2003);279-292

End Of Report
Please visit www.srlworld.com for related Test Information for this accession

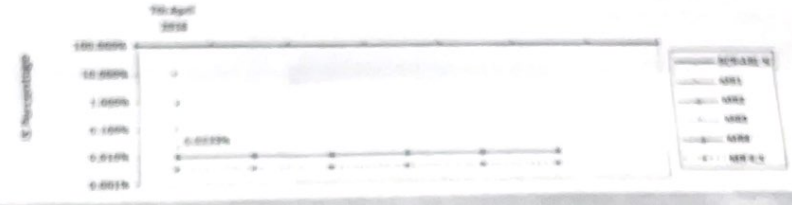
Dr. B. R. Das, PhD
Mentor-Molecular Diagnostics

hema CÔRE™

Your Test Results

P210 b2b2 (e13a2) - major transcript	Detected
P190 b1a2 - minor transcript	Not Detected
P230 c3a2 - micro transcript	Not Detected
*Observed copies of ABL1	56621
*Observed copies of BCR-ABL1	15
BCR-ABL1/ABL1 ratio (%)	0.0003
Conversion Factor for IS	0.59
BCR-ABL1 IS (%)	0.0018

Patient IDSL Historical Results



COMMENTS

1. The hybrid transcript of BCR-ABL was quantitated using Real Time PCR assay. Signals for BCR-ABL were detected in leukocytes of the specimen. Follow-up is recommended, if clinically indicated.

Dr. Shalu Verma Kumar, DVM, Ph.D., Molecular Scientist
Reg. No. 5254

Dr. Rahul Katara, Ph.D., Molecular Scientist

Page 1 of 4

CÔRE DIAGNOSTICS™

Refrigerated Frozen

Vial ID Barcode

10885567

Period:

hema CŌRE™
Your Test Results

Case Number	18014624
Patient Name	Papu Ram Saini (NS0010645)
Age/Sex	38 Yrs/Male
Patient Location	Jaipur
Hospital Name	Aakriti Labs
Physician Name	Dr. Hemant Malhotra
Date & Time of Accessioning	03/04/2018 12:00 Hrs
Date & Time of Reporting	07/04/2018 15:17 Hrs

TEST INFORMATION

Background

1. Chronic myeloid leukaemia (CML), is characterized by the translocation between chromosomes 9 (9q34.1) and 22 (22q11.2). The t(9;22)(q34.1;q11.2) is detected cytogenetically in more than 91-96% of adult CML patients; in 5% of pediatric ALL-B CALLA positive; and 15-30% of adult ALL-B CALLA positive patients. At the molecular level, breaks in the *BCR*, and *ABL1* genes result in the formation of fusion mRNA transcripts.

Assay Description, and Methodology

1. This assay quantifies the Major (p210), Minor (p190), and Micro (p230) transcripts. Its internal reference gene is *ABL1*. It is in accordance with EAC Guidelines, and uses an (EU) CE-IVD approved kit with high sensitivity (>MR4.5). Its IS conversion factor is established in accordance with the guidelines of Europe Against Cancer (EAC), and has been calibrated using WHO International Standards for CML.
2. Total cellular RNA is extracted via silica-membrane-based purification from whole blood or bone marrow collected in EDTA. The assay is an RT-qPCR that uses oligonucleotide hydrolysis principle.
3. Molecular Response (MR) is measured using % *BCR-ABL* ratio. The formula used is: % *BCR-ABL1* = [No. of copies of *BCR-ABL1* transcripts/No. of copies of control gene transcripts] x 100.
4. For the P210 transcript, this ratio is further normalized to the international scale (IS) and reported as *BCR-ABL1/ABL1* % (IS). The formula used is: % BCR-ABL^{IS} = [Sum of *BCR-ABL1* copy number/Sum of *ABL1* copy number* x *CF* x 100. Where *denotes minimum of 10,000 copies.
5. Molecular response is thus expressed and reported as BCR-ABL% on a log scale relative to the standard baseline (100% IS), where 10%, 1%, 0.1%, and 0.0032% correspond to a decrease of 1, 2, 3, and 4.5 logs, respectively, below the standard baseline, i.e. 100% BCR-ABL^{IS}.
1. The Limit of Detection [LoD] is equal to 2 copies of *BCR-ABL1* transcript. Per Cross et al. (2015), the control gene [*ABL1*] copy numbers for scoring molecular response: MR4.0 = 10,000-31,999 copies of ABL1; MR4.5 = 32,000-99,999 copies of ABL1; MR5.0 ≥100,000 copies of ABL1. This calculation is contingent upon the assay's LOD.
7. Linearity: Major *BCR-ABL1* linearity ranges from 0.0008 to 98 Mbcr NCN, for Minor it ranges from 0.002 to 82 mbcr NCN and Micro *BCR-ABL1* linearity range was 0.005 to 76 µbcr NCN. Here NCN is a normalised copy number obtained from the ratio between *BCR-ABL1* copy number/ABL1 copy number. Specificity of this assay is 100%.
8. The results should be correlated with clinical data. To monitor response to TKI therapy, NCCN Guidelines Version 2.2017 for CML recommend using this test at diagnosis; Every 3 months after initiating treatment. After *BCR-ABL1* 0.1% – <1% (IS) has been achieved, every 3 months for 2 years and every 3–6 months thereafter; If there is 1-log increase in BCR-ABL1 transcript levels with MMR, the test should be repeated in 1–3 months.

Disclaimer: The assay is designed to perform the reactions at the specified analytical sensitivity given that the template RNA is not heavily fragmented, and does not contain materials that could inhibit the amplification reaction.

Dr. Shalu Verma Kumar, DVM, Ph.D., Molecular Scientist
Reg. No. 3214

Dr. Rahul Katara, Ph.D., Molecular Scientist

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Certificate No. : MC-3256

CŌRE DIAGNOSTICS™

Case Number	18014624
Patient Name	Papu Ram Saini (NS0010645)
Age/Sex	38 Yrs/Male
Patient Location	Jaipur
Hospital Name	Aakriti Labs
Physician Name	Dr. Hemant Malhotra
Date & Time of Accessioning	03/04/2018 12:00 Hrs
Date & Time of Reporting	07/04/2018 15:17 Hrs

REFERENCE

- Druker BJ, et al. IRIS Investigators. Five-year follow-up of patients receiving imatinib for chronic myeloid leukemia. N Engl J Med. 2006 Dec 7;355(23):2408-17.
- Branford S et al. Rationale for the recommendations for harmonizing current methodology for detecting BCR-ABL transcripts in patients with chronic myeloid leukaemia. Leukemia. 2006 Nov;20(11):1925-30.
- Baccarani M etal., European LeukemiaNet. Evolving concepts in the management of chronic myeloid leukemia: recommendations from an expert panel on behalf of the European LeukemiaNet. Blood. 2006 Sep 15;108(6):1809-20.
- Beillard E et al. Evaluation of candidate control genes for diagnosis and residual disease detection in leukemic patients using 'real -time' quantitative reverse-transcriptase polymerase chain reaction (RQ-PCR) - a Europe against cancer program. Leukemia. 2003 Dec;17(12):2474-86.
- Cross NC et al. Laboratory recommendations for scoring deep molecular responses following treatment for chronic myeloid leukemia. Leukemia. 2015 May;29(5):999-1003.

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Reg. No. 3214

Dr. Rahul Katara, Ph.D., Molecular Scientist

CŌRE DIAGNOSTICS™

hemaCORE
Your Test Result

1906656
PAPPU SAINI
40 Yrs/Male
Jaipur, Rajasthan, India
Mahatma Gandhi Hospital , Jaipur
Dr Hemant Malhotra
11/06/2019 11:22 Hrs
13/06/2019 09:20 Hrs

TEST NAME

BCR-ABL1 Quantitative International Scale [IS]

SPECIMEN INFORMATION

Peripheral Blood Collected on 10/06/2019 at 14:30 Hrs

CLINICAL HISTORY

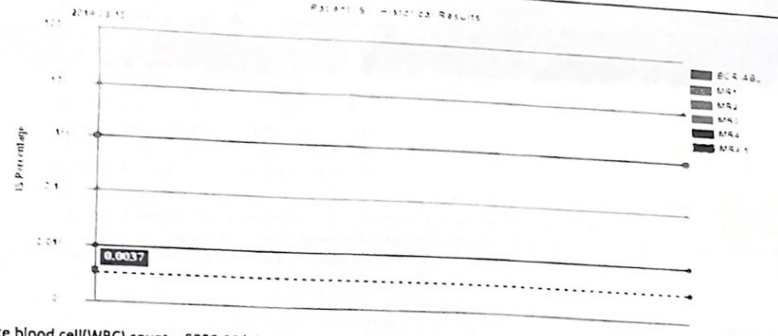
On Glivec 400mg

METHODOLOGY

Real Time Polymerase Chain Reaction (RT PCR)

TEST RESULT

P210 (b3a2, b2a2) major transcript	Detected
P190 (e1a2) minor transcript	**Not detected**
P230 (c3a2) micro transcript	**Not detected**
Observed copies of ABL1	399640
Observed copies of BCR-ABL1	28
BCR-ABL1/ABL1 ratio [%]	0.00690000
Conversion Factor for IS	0.54
BCR-ABL1 IS [%]	0.0037



White blood cell(WBC) count = 5350.00/µl; Platelet count = 165000.00/µl; Hemoglobin = 12.60 g/dL

Dr Lata Kini MD Oncopathologist
Reg No 5641

Dr Rahul Katara Ph D Molecular Scientist

Case ID	19066565
Patient Name	PAPPU SAINI
Age/Sex	40 Yrs/Male
Hospital Location	Jaipur, Rajasthan, India
Hospital Name	Mahatma Gandhi Hospital , Jaipur
Physician Name	Dr. Hemant Malhotra
Date & Time of Accessioning	11/06/2019 11:22 Hrs
Date & Time of Reporting	13/06/2019 09:20 Hrs

Disclaimer: The assay is designed to perform the reactions at the specified analytical sensitivity given that the template RNA is not heavily fragmented, and does not contain materials that could inhibit the amplification reaction.

REFERENCES

- Druker BJ, et al. IRIS Investigators. Five-year follow-up of patients receiving imatinib for chronic myeloid leukemia. N Engl J Med. 2006 Dec 7;355(23):2408-17.
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- Cross NC et al. Laboratory recommendations for scoring deep molecular responses following treatment for chronic myeloid leukemia. Leukemia. 2015 May;29(5):999-1003.

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