



# SURAHA SPECIALITY LABORATORY

(Department of Pathology)

Root cause analysis of outlier parameter for EQAS performance

Format No: SSL/FM/90

SL No	Check Points	Observations
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Name of Parameter (s): T. Bilirubin (SDI - 3.54) T. Protein (SDI - 2.00)	Month: January
Cycle No / Sample No/ Distribution No: JAN, 2023	Year: 2023
CLERICAL ERRORS Date of testing - 11/01/2023	

1.	Transcription error (may be pre- or post-analytical factors)	- NIL -
2.	Wrong method has been registered for analysis or method change not updated	- NIL -

### METHODOLOGICAL PROBLEM

3.	Instrument function checks (e.g., temperatures, blank readings, pressures) not performed as necessary, or results not within acceptable range.	- NIL -
4.	Scheduled instrument maintenance not performed appropriately.	- NA -
5.	Incorrect instrument calibration.	- NA -
6.	Standards or reagents improperly reconstituted and stored, or inadvertently used beyond expiration date.	- NA -
7.	Instrument probes misaligned.	- NIL -
8.	Problem with instrument data processing functions. The laboratory may need to contact the manufacturer to evaluate such problems.	- NIL -
9.	Problem in manufacture of reagents / standards, or with instrument settings specified by manufacturer	- NIL -
10.	Carry-over from previous specimen.	- NIL -
11.	Automatic pipettor not calibrated to acceptable precision and accuracy.	- NA -
12.	Imprecision from result being close to detection limit of method.	- NIL -
13.	QC material not run within expiration date, or improperly stored	- NIL -
14.	QC material not run at relevant analyte concentration	- NIL -
15.	Result not within reportable range (linearity) for instrument / reagent system.	- NIL -



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16.	Obstruction of instrument tubing / orifice by clot or protein.	- NIL -
17.	Incorrect incubation times.	- NIL -

## TECHNICAL PROBLEM

18.	EQA material improperly reconstituted.	- NIL -
19.	Testing delayed after reconstitution of EQA material (with problem from evaporation or deterioration).	- NIL -
20.	Sample not placed in proper order on instrument.	- NIL -
21.	Result released despite unacceptable QC data.	- NIL -
22.	QC data within acceptable limits but showed trend suggestive of problem with the assay.	<i>It shows trend but sample was tested without taking corrective action.</i>
23.	Inappropriate quality control limits / rules. If the acceptable QC range is too wide, the probability increases that a result will fall within the acceptable QC range yet exceed acceptable limits for EQA.	- NIL -
24.	Manual pipetting / diluting performed inaccurately, at an incorrect temperature or with incorrect diluent.	- NIL -
25.	Calculation error or result reported using too few significant digits.	- NIL -
26.	Secondary specimen tubes incorrectly labeled.	- NIL -

## PROBLEM WITH PROFICIENCY TESTING MATERIALS

27.	PT sample with appropriate matrix to that as prescribed by the equipment manufacturer for testing of samples.	- NIL -
28.	Non-homogenous test material	- NIL -
29.	Haemolysis on an immune-haemtology program samples.	- NIL -

## PROBLEM WITH EVALUATION OF RESULTS BY THE PT PROVIDER

30.	Peer group not appropriate.	- NA -
31.	Inappropriate target value	- NA -



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32.	Incorrect data entry by PT provider	- NA -



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## CONCLUSION:

RCA done, however no major cause of outlier was identified. Cause of such errors may be random. The parameter Total Bilirubin shall be sent for ILC to NABL accredited lab and the parameter T. Protein shall be re-run. Both the parameters shall be strictly monitor in the next eqas cycle.

Saswati Sengupta

Root Cause Analysis done by: Close monitoring of control values  
Remarks: T-Bil and T. protein for trend identification to be done.

Reviewed By: Saswati Sengupta



Test Name: TP

Date: 16/02/2023

PatientId: 00000000000002

PatientName:

LabName: SURAHA

DrName: MUKTI

Sample Abs: 0.1601

Result: 4.73 g/dL

Flag: Low

Lab Name SURAHA SPECIALITY LABORATORY

Details About RobustAnalysis

Lab No 16610

Detail About Monthly Summary

Month January

Detail about SDI

Year 2023

Constituent Group Chemistry II

Click on the analyte to view Graphical Data

All Analyser Result

Print

Date of Result Entered : 18/01/2023

Date of Report Published : 09/02/2023

Sl.No	Analyte	Method / Principle Name	Analyzer Name	No of Participants	DV	Participants		Your Value	SDI	U
						CV	SD			
1	<a href="#">GLUCOSE II</a>	GOD-POD II	Agape	472	170.54	8.84	15.07	177.1 mg/dL	0.44	1.39
2	<a href="#">UREA II</a>	Urease UV / GLDH II	Agape	430	30.78	11.49	3.54	36.5 mg/dL	1.62	0.34
3	<a href="#">CREATININE II</a>	Jaffes Kinetic-Alkaline Picrate II	Agape	346	1.30	11.47	0.15	1.12 mg/dL	-1.21	0.02
4	<a href="#">T.BILIRUBIN II</a>	Diazonium Salt ( Colorimetric ) / Jendrassik II	Agape	372	3.21	14.87	0.48	4.91 mg/dL	3.54	0.05
5	<a href="#">T-PROTEIN II</a>	Biuret - Colorimetric II	Agape	326	5.40	8.33	0.45	6.3 g/dL	2.00	0.05
6	<a href="#">ALBUMIN II</a>	BCG - Colorimetric II	Agape	319	3.31	9.23	0.31	3.65 g/dL	1.11	0.03
7	<a href="#">URIC ACID II</a>	Enzymatic / Uricase Colorimetric II	Agape	362	4.66	16.12	0.75	6 mg/dL	1.78	0.08
8	<a href="#">CHOLESTROL II</a>	CHOD-PAP II	Agape	435	107.88	11.75	12.67	123.1 mg/dL	1.20	1.22
9	<a href="#">TRIGLYCERIDE II</a>	GPO-PAP / Enzymatic Colorimetric / End Point II	Agape	323	104.14	11.50	11.98	106 mg/dL	0.16	1.33

SDI Range	Interpretation
Within -1.00 to +1.00	Excellent.
Within ±1.01 to ±2.00	Good.
Within ±2.01 to ±2.99	Accept with caution. Warning Signal.
Beyond ±3.0	Unacceptable performance. Action Signal.

Saswati Sengupta

Links

Modify Address	Modify Methods	Submit Lab Results	View Lab Monthly Summary
Yearly Summary	Change Password	Home	Sign-out



Associate : SSL23  
 Name : MS SARASWATI MANNA  
 Age / Gender : 20Y / FEMALE  
 ID Number : SSL/3886/B-1042/31  
 Referred By : DR.G.S.PANDA, DGO,MD

Sample Type : O.S.S.  
 Received On : 16/02/2023  
 Reported On : 16/02/2023

### DEPARTMENT OF CLINICAL BIOCHEMISTRY

Test Description	Result	Unit	Bio. Ref. Interval
Bilirubin Total <i>Methodology : Diazonium Salt/Jendrassik</i> <i>Specimen : serum</i>	3.18	mg/dl	0.20-1.00

**Comment:**

REMARKS : The result may be correlated with clinical findings.  
 Patients identification not verified and sample is not drawn by us.

## End of Report ##

*S. Sengupta*

**Dr. Saswati Sengupta**

MBBS, MD(Path)

Reg. No. : 62563 (WBMC)



ISO 9001:2015





PATIENT NAME : MS SARASWATI MANNA

REF. DOCTOR :DR. SURAHA SPECIALITY LABORATORY

CODE/NAME & ADDRESS : C000131225  
 SRISHTI DIAGNOSTICS  
 30, RASH BEHARI AVENUE,  
 KOLKATA 700026  
 9123818736

ACCESSION NO : **0031WB013818**  
 PATIENT ID : 871528730  
 CLIENT PATIENT ID:  
 ABHA NO :

AGE/SEX : 20 Y Female  
 DRAWN : 16/02/2023 12:27:26  
 RECEIVED : 16/02/2023 15:48:28  
 REPORTED : 16/02/2023 17:25:20

Test Report Status	Final	Results	Biological Reference Interval	Units
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## BIOCHEMISTRY

**BILIRUBIN, TOTAL, SERUM**

BILIRUBIN, TOTAL	3.16	< 10.0	mg/dL
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METHOD : DIAZONIUM SALT

**Interpretation(s)**

BILIRUBIN, TOTAL, SERUM-Bilirubin is a yellowish pigment found in bile and is a breakdown product of normal heme catabolism. Bilirubin is excreted in bile and urine, and elevated levels may give yellow discoloration in jaundice. Elevated levels results from increased bilirubin production (eg, hemolysis and ineffective erythropoiesis), decreased bilirubin excretion (eg, obstruction and hepatitis), and abnormal bilirubin metabolism (eg, hereditary and neonatal jaundice).

An elevated bilirubin level in a newborn may be temporary and resolve itself within a few days to two weeks. However, if the bilirubin level is above a critical threshold or rapidly increases, an investigation of the cause is needed so appropriate treatment can be initiated.

Source: Wallach's Interpretation of Diagnostic tests, 9th ed) Wallach's interpretation of diagnostic tests, 9th ed

**\*\*End Of Report\*\***Please visit [www.srlworld.com](http://www.srlworld.com) for related Test Information for this accession**CONDITIONS OF LABORATORY TESTING & REPORTING**

1. It is presumed that the test sample belongs to the patient named or identified in the test requisition form.
2. All tests are performed and reported as per the turnaround time stated in the SRL Directory of Services.
3. Result delays could occur due to unforeseen circumstances such as non-availability of kits / equipment breakdown / natural calamities / technical downtime or any other unforeseen event.
4. A requested test might not be performed if:
  - i. Specimen received is insufficient or inappropriate
  - ii. Specimen quality is unsatisfactory
  - iii. Incorrect specimen type
  - iv. Discrepancy between identification on specimen container label and test requisition form
5. SRL confirms that all tests have been performed or assayed with highest quality standards, clinical safety & technical integrity.
6. Laboratory results should not be interpreted in isolation; it must be correlated with clinical information and be interpreted by registered medical practitioners only to determine final diagnosis.
7. Test results may vary based on time of collection, physiological condition of the patient, current medication or nutritional and dietary changes. Please consult your doctor or call us for any clarification.
8. Test results cannot be used for Medico legal purposes.
9. In case of queries please call customer care (91115 91115) within 48 hours of the report.

**SRL Limited**

Fortis Hospital, Sector 62, Phase VIII,  
 Mohali 160062

**Dr. Chaitali Ray, PHD**  
 Senior Biochemist cum  
 Management Representative

**PERFORMED AT :**

SRL Ltd  
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 Email : [customercare.saltlake@srl.in](mailto:customercare.saltlake@srl.in)

**SURAHA SPECIALITY LABORATORY  
(DEPARTMENT OF PATHOLOGY)**

Laboratory 1 : SURAHA SPECIALITY LABORATORY  
 Laboratory 2 : SRL DIAGNOSTICS  
 Laboratory 3 :

Sl. No	Date of Testing	ID No	Parameter	Lab 1	Lab 2	Lab 3	Mean	SD	Z-Score	Corrective action ( ≥ 2 Z-score)	Reviewed By
1	16-02-2023		t.bill	3.18	3.16		3.17	0.014142	0.707107		Sarwah Sengupta
1	16-02-2023		T.PROTEIN	6.3	4.73		5.515	1.110158	0.707107		Sarwah Sengupta

Z- Score = ( Lab 1 - Mean)/SD