

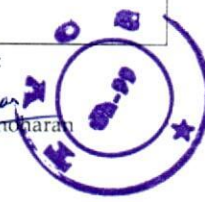


CERTIFICATE OF CALIBRATION

FT-Q-25		Page 1 of 2	
ULR No.	: CC21442300001142F	Date of Issue	: 03-03-2023
Certificate No.	: TVCSPL 23/03/393-02	Recom. Due Date	: 29-02-2024
Date of Calibration	: 01-03-2023	Customer Details	: SRF No. : 393
M/s. REGIONAL RESEARCH INSTITUTE OF UNANI MEDICINE, NO.1,WEST MATHA CHURCH ROAD,ROYAPURAM, CHENNAI-600013.		Calibrated at	: Lab
		Date of Receipt	: 01-03-2023
		Cond. On Receipt	: Satisfactory
Details of Test Instrument:			
Description	: Micropipette	Model No.	: Biohit
Range	: 5-50µl	Serial No.	: HQ70316
Least Count	: 0.5µl	Id. No.	: RRIUMC EQ BC 015
Make	: Erba	Accuracy	: As per Manual
Operating Range	: 25µl	Location : Instrumentation Room, Dept Of Bio Chemistry	
Details of Standard Used			
Name	: Certificate No.	Valid upto	Traceability
Weighing Machine	: TVCSPL 22/03/392-01	07-Mar-23	TVCSPL, Chennai.
Weighing Machine	: TVCSPL 23/02/366-03	26-Feb-24	TVCSPL, Chennai.
Work Instruction	: WI-M-03	Environmental Details : Temperature : 25±2°C Relative Humidity : 50±10 % RH	
MECHANICAL CALIBRATION			
(Volume)			
Calibration Results			
1. Lower Volume :	5 µl	No. of Measurements :	10
<input type="text" value="5.042"/>	<input type="text" value="5.045"/>	<input type="text" value="5.039"/>	<input type="text" value="5.027"/>
<input type="text" value="5.015"/>	<input type="text" value="5.051"/>	<input type="text" value="5.037"/>	<input type="text" value="5.049"/>
<input type="text" value="5.044"/>	<input type="text" value="5.020"/>		
Mean Value :	5.037 µl		
Error Limits(±)			
Systematic Error :	0.037 µl	0.125	µl
Systematic Error :	0.74 %	2.50	%
Random Error :	0.01 µl	0.08	µl
Random Error :	0.25 %	1.50	%
Measurement Uncertainty :	± 0.094	µl	

Calibrated by :
Vishnu Priyai
 Ms.K.Vishnu Priyai
 (Calibration Engineer)

Authorised by:
Anand Manoharan
 Mr.Anand Manoharan
 (QM & TM)



...redefining the true value





ULR No. : CC214423000001142F Page 2 of 2
 Certificate No. : TVCSPL 23/03/393-02

MECHANICAL CALIBRATION

(Volume)

Calibration Results

2. Middle Volume : 25 μ l No. of Measurements : 10

25.06	24.94	25.09	25.04
25.01	25.09	25.16	24.94
25.09	25.07		

Mean Value : 25.05 μ l

Error Limits(\pm)

Systematic Error :	0.05	μ l	0.50	μ l
Systematic Error :	0.21	%	1.00	%
Random Error :	0.07	μ l	0.20	μ l
Random Error :	0.28	%	0.40	%

Measurement Uncertainty : \pm 0.26 μ l

3. Nominal Volume : 50 μ l No. of Measurements : 10

49.96	50.08	50.15	49.93
49.96	49.50	49.89	50.13
50.09	49.93		

Mean Value : 49.96 μ l

Error Limits(\pm)

Systematic Error :	-0.04	μ l	0.50	μ l
Systematic Error :	-0.08	%	1.00	%
Random Error :	0.19	μ l	0.20	μ l
Random Error :	0.37	%	0.40	%

Measurement Uncertainty : \pm 0.26 μ l

Remarks

1. The reported Expanded Uncertainty is calculated at 95.45 % C.L with coverage factor $k=2$
2. The above Micropipette was within the error limits

* End of Certificate *

Calibrated by :

Vishnu Priyai
 Ms.K.Vishnu Priyai
 (Calibration Engineer)

Authorised by:

Anand Manoharan
 Mr.Anand Manoharan
 (QM & TM)





CERTIFICATE OF CALIBRATION

FT-Q-25		Page 1 of 2	
ULR No.	: CC214423000001218F	Date of Issue	: 07-03-2023
Certificate No.	: TVCSPL 23/03/416-01	Recom. Due Date	: 05-03-2024
Date of Calibration	: 06-03-2023	SRF No.	: 416
Customer Details	M/s. True Value Calibration Services Pvt. Ltd., No. 92, S. R. B. Nagar Main Road, Kolathur, Chennai - 600 099.	Calibrated at	: LAB
		Date of Receipt	: 06-03-2023
		Cond. On Receipt	: Satisfactory
Details of Test Instrument:			
Description	: Electronic Micro Balance	Model No.	: MSE 3-6P-000-DM
Range	: 0 to 1.1g/2.1/3.1g	Serial No	: 36101007
Least Count	: 0.001mg/0.002mg/0.005mg	Identification No.	: TVCSPL/MECH/WB-011
Make	: Sartorius	Class(OIML)	: Class I
Working range	: 1mg to 2g	Location	: MASS LAB 1
Verification Interval(e)	: 0.01mg		
Details of Standard Used :			
Name	Certificate No.	Valid upto	Traceability
E1 Class Standard Weights	TVCSPL 22/05/694-03	03-May-23	TVCSPL, Chennai.
Work Instruction	: WI-M-01		
Environmental Details	Temperature: 25±5 °C	Relative Humidity:	40-70 % RH

Calibrated by :
K. Kameswaran
Mr.K.Kameswaran
(Calibration Engineer)

Authorised by:
Anand Manoharan
Mr.Anand Manoharan
(QM & TM)



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Email : calibrationservices@live.com
www.truevaluecalibration.com
CIN No :U29268TN2015PTC103428



Quality is Assured

ULR No. : CC214423000001218F
 Certificate No. : TVCSPL 23/03/416-01

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MECHANICAL CALIBRATION
 (Weighing Scale & Balance)
Calibration Results

1. Weighing Error Test

Sr. No.	Applied Mass (g)	Test Reading (g)	Error (g)	MPE(±)g
1	0.001002	0.001000	-0.000002	0.000005
2	0.002002	0.002001	-0.000001	
3	0.005002	0.005000	-0.000002	
4	0.010001	0.010001	0.000000	
5	0.020001	0.020001	0.000000	
6	0.050003	0.050001	-0.000002	
7	0.100003	0.100001	-0.000002	
8	0.200003	0.200000	-0.000003	
9	0.499999	0.500000	0.000001	
10	1.000007	1.000000	-0.000007	0.000010
11	2.000008	2.000000	-0.000008	
12	3.000015	3.000000	-0.000015	

2. Repeatability

Sr. No.	@ Zero (g)	50% of Range (g)	100% of Range (g)
1	0.000000	1.000000	2.000002
2	0.000000	1.000000	2.000000
3	0.000000	1.000000	2.000000
4	0.000000	1.000000	2.000002
5	0.000000	1.000000	2.000000
6	0.000000	1.000001	2.000002
7	0.000000	1.000001	2.000000
8	0.000000	1.000000	2.000002
9	0.000000	1.000001	2.000002
10	0.000000	1.000001	2.000002

Repeatability (SD) ± 0.000001 g

Remarks

- UUC is defined as the Unit Under Calibration
- Expanded uncertainty** ± 0.0000032 g
- The reported uncertainty is at coverage k=2 which correspond to a coverage probability of approximately 95.45% for a normal distribution. The Contribution of uncertainty, originating from the standards(s) & balance(s) used, the weighing process are into account
- M/s.TVCSPL, Chennai General Laboratory Practice are derived from ISO/IEC:17025. It therefore meets the relevant requirements of ISO:9001 when acting as the supplier providing test/calibration result
- The result provided in this certificate is confidential. The calibration certificate shall not be reproduced in part or in full without written approval of M/s.TVCSPL.
- With respect to the above specified requirements the balance was within the limits
- This calibration certificate will not be legal for the purpose of the standard of "Weight & Measure (enforcement) act 2011

* End of Certificate *

Calibrated by :

K. Kameswaran
 Mr.K.Kameswaran
 (Calibration Engineer)

Authorised by:

Anand Manoharan
 Mr.Anand Manoharan
 (QM & TM)



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CERTIFICATE OF CALIBRATION

FT-Q-25		Page 1 of 2	
ULR No.	: CC214423000001113F	Date of Issue	: 28-02-2023
Certificate No.	: TVCSPL 23/02/366-03	Recom. Due Date	: 26-02-2024
Date of Calibration	: 27-02-2023	SRF No.	: 366
Customer Details		Calibrated at	: LAB
M/s. True Value Calibration Services Pvt. Ltd.,		Date of Receipt	: 27-02-2023
No. 92, S. R. B. Nagar Main Road,		Cond. On Receipt	: Satisfactory
Kolathur,			
Chennai - 600 099.			
Details of Test Instrument:			
Description	: Electronic Semi Micro Balance	Model No.	: MSA 225 S-000-DA
Range	: 0 to 220g	Serial No	: 28601485
Least Count	: 0.01mg	Identification No.	: TVCSPL/MECH/WB-07
Make	: Sartorius	Class(OIML)	: Class I
Working range	: 1mg to 200g	Location	: MASS LAB 1
Verification Interval(e)	: 0.1mg		
Details of Standard Used			
Name	Certificate No.	Valid upto	Traceability
E1 Class Standard Weights	TVCSPL 22/05/694-03	03-May-23	TVCSPL, Chennai.
Work Instruction	: WI-M-01		
Environmental Details	: Temperature: 25±5 °C	Relative Humid	40-70 % RH

MECHANICAL CALIBRATION

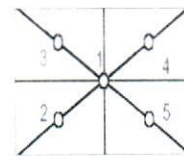
(Weighing Scale & Balance)

Calibration Results

1. Eccentricity

Sr. No.	Position of Weights used	Test Reading (g)	Error between centre(1) and Other points (g)
1	3	50.00000	0.00001
2	4	50.00001	0.00000
3	1	50.00001	0.00000
4	2	50.00000	0.00001
5	5	50.00000	0.00001

Maximum Error between centre (1) and other points
0.00001 g



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Mr.K.Kameswaran
(Calibration Engineer)

Authorised by:

Anand Manoharan
Mr.Anand Manoharan
(QM & TM)





ULR No. : CC214423000001113F
 Certificate No. : TVCSPL 23/02/366-03

MECHANICAL CALIBRATION
 (Weighing Scale & Balance)
Calibration Results

2. Weighing Error Test

Sr. No.	Applied Mass (g)	Test Reading (g)	Error (g)	MPE(±)g
1	0.010001	0.01000	-0.000001	0.00005
2	0.499999	0.50000	0.000001	
3	1.000007	1.00000	-0.000007	
4	2.000008	2.00000	-0.000008	
5	5.00001	5.00000	-0.00001	
6	10.00001	10.00000	-0.00001	0.00010
7	20.00001	20.00000	-0.00001	
8	50.00002	50.00000	-0.00002	0.00015
9	100.00003	100.00000	-0.00003	
10	200.00004	200.00000	-0.00004	

3. Repeatability

Sr. No.	@ Zero (g)	50% of Range (g)	100% of Range (g)
1	0.00000	100.00000	200.00000
2	0.00000	100.00000	200.00000
3	0.00000	100.00000	200.00001
4	0.00000	100.00000	200.00001
5	0.00000	100.00000	200.00001
6	0.00000	100.00000	200.00001
7	0.00000	100.00001	200.00001
8	0.00000	100.00001	200.00001
9	0.00000	100.00001	200.00000
10	0.00000	100.00000	200.00000

Repeatability(SD)

± 0.000005 g

Remarks

- UUC is defined as the Unit Under Calibration
- Expanded uncertainty** ± 0.000025 g
- The reported uncertainty is at coverage k=2 which correspond to a coverage probability of approximately 95.45% for a normal distribution. The Contribution of uncertainty, originating from the standards(s) & balance(s) used, the weighing process are into account
- M/s.TVCSPL, Chennai General Laboratory Practice are derived from ISO/IEC:17025. It therefore meets the relevant requirements of ISO:9001 when acting as the supplier providing test/calibration result
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* End of Certificate *

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