

Testing and Training

Captain Srinivasa Murthy Central Ayurveda Research Institute (CSMCARI)
A.A. Hospital Campus,
Chennai, Tamil Nadu
(Under CCRAS, Ministry of Ayush, Government of India)

About the institute



Captain Srinivasa Murthy Central Ayurveda Research Institute (CSMCARI), Chennai is a prominent institution under the Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of Ayush, Government of India. It is dedicated to advancing research in Ayurveda and promoting indigenous systems of medicine.

The institute was named after Captain Dr. G. Srinivasa Murthy, a legendary figure in Indian medicine. His disciple, Dr. V. Narayana Swamy, founded the institute, initially named as Captain Srinivasa Murthy Drug Research Institute for Ayurveda (CSMDRIA) in the year 1963 in IMPCOPS, Chennai, with a motive to study the phytochemical aspects of medicinal plants used in Indian Systems of Medicine. Later, the Central Council for Research in Indian Medicine and Homeopathy had taken over this Institute as grant-in-aid. In the year 1979, this Institute became a part of the Central Council for Research in Ayurvedic Sciences (formerly Central Council for Research in Ayurveda and Siddha).

This Institute is currently situated in a land area measuring 7,200 sq. ft, in the Arignar Anna Hospital Campus, Arumbakkam, Chennai with Chemistry, Biochemistry, Botany/ Pharmacognosy, Pharmacology, Microbiology, Pharmacy departments and a Library section. Activities of this institute had diversified to various aspects of research in Ayurveda and Indian Systems of Medicine. Also concentrates on formulating SOP and drug standardization of medicines belonging to Ayurveda. Besides, the Institute has an animal house facility approved by the Committee for Control and Supervision of Experiments on Animals (CCSEA), Ministry of Environment and Forest, Government of India, to conduct animal studies. The institute also houses an indexed regional herbarium facility, Captain Srinivasa Murthy Herbarium (CSMH). This institute is accredited with NABL, licensed Drug Testing Laboratory (DTL) and recognised Ph.D centre. The institute continues to contribute to the development and standardization of Ayurvedic medicines and practices, fostering innovation and excellence in the field.

Services offered

The institute offers a comprehensive suite of services that caters to both regulatory requirements and academic training. These services are designed to support manufacturers, researchers, students, etc., engaged in the development and validation of ASU drugs.

Testing and evaluation of ASU drugs (testing)

a. Shelf-life and stability studies [Lab: Chemistry]: These assessments determine the optimal storage conditions and expiration timelines of ASU formulations, ensuring consumer safety and product reliability.

b. Botanical and pharmacognostic identification and authentication [Lab: Botany and Pharmacognosy]: The institute conducts microscopic and macroscopic evaluations of fresh/ dry/ mounted plant specimens and raw drugs to verify botanical identity for authentication of the plant and to detect adulteration. Herbarium vouchers can also be deposited in the institute regional herbarium.

c. Physicochemical analysis [Lab: Chemistry]: A wide range of tests is performed to evaluate parameters such as pH, moisture content, ash values, extractive values, and other quality indicators.

d. Safety and efficacy studies [Lab: Pharmacology]: Preclinical evaluations are carried out using validated models to assess the therapeutic potential and toxicological profile of ASU drugs. Lab: Pharmacology.

e. Microbial testing [Lab: Microbiology]: These include assays for microbial load, heavy metals, aflatoxins, and other contaminants, ensuring compliance with pharmacopoeial standards.

Academic and skill-development programs (training)

a. Internship Training: The institute offers Internship Training Programme aimed at equipping UG and PG with practical exposure to traditional medicine research and laboratory practices. The programme is delivered in two formats: a short-term 15-day training module, a one-month training module, and a 3-month training module. These modules are designed for students seeking a concise yet intensive introduction to ASU drug testing, covering multiple disciplines.

b. Project-based internship: The project-based internship, typically spanning 4 to 8 weeks, is tailored for students undertaking academic research or fulfilling curriculum-based project requirements. Interns engage in supervised research activities such as shelf-life studies, microbial load analysis, pharmacological studies and instrument-based evaluations. They are encouraged to formulate research questions, collect and interpret data, and present their findings through structured reports and presentations.

c. Hands-on training on sophisticated instruments: The institute also offers specialized training modules on advanced analytical instruments such as High-Performance Liquid Chromatography (HPLC), Gas Chromatography- Mass Spectrometer (GC-MS), UV-Visible Spectrophotometry, Fourier Transform – Infra red (FT-IR), Induction Coupled Plasma – Organic Emission Spectrophotometer (ICP-OES), Atomic Absorption Spectrophotometer (AAS), Flame Photometer, High Performance Thin Layer Chromatography (HPTLC), Arc HPLC, RT- PCR, Thermal Cyclers (PCR), Hematology analyser, Clinical Chemistry auto analyser, ELISA Reader, Multimode reader and others.

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Botany and Pharmacognosy

Approved analysis / user charges for testing

Sl. No.	Name of procedure	Rate	Sample specifications/ Details/ Remarks
1.	Taxonomic identification of specimen – Herbarium Specimen (per plant/ specimen)	250/-	Specimens must have identifiable characters. Preferably, flowering twig; fruiting twigs are also acceptable if flowering twig is not available. Isolated plant parts (eg. Leaf, twig only etc.) will not be accepted. Herbaceous plants must preferably be submitted with their root system. Applicants must provide metadata (Date of collection, collectors, Locality, Altitude, GPS etc.) if herbarium voucher accession number is required.
2.	Taxonomic identification of medicinal plants (fresh/ dried)	250/-	Specimens must have identifiable characters. Preferably, flowering twig; fruiting twigs are also acceptable if flowering twig is not available. Isolated plant parts (e.g., leaf, twig, etc.) will not be accepted. Herbaceous plants must preferably be submitted with their root system. Applicants must provide metadata (Date of collection, collectors, Locality, Altitude, GPS etc.) if herbarium voucher accession number is required.
3.	Identification of crude drugs by Organoleptic characters	550/-	The sample has to be in good condition free from any dirt or other contaminants. A minimum of 30-50 grams of sample will be required in a sealed / airtight container with proper labelling/code. For fresh samples, the sample must be free of fungal/bacterial infection.
4.	Standardisation and characterisation of single drugs — Powder microscopy	2200/-	The whole drug/ powder of the plant sample should be labelled/ coded properly and secured to prevent any contamination. A minimum of 30-50 grams of sample is required.
5.	Standardisation and characterization of compound formulation — powder microscopy	2200/-	Powder formulations should be labelled/coded properly and secured to prevent any contamination. A minimum of 30-50 grams of sample is required.
6.	Preliminary Phytochemical/ Histochemical test - Anatomy	2200/-	Mature plant parts are preferred. The samples must be labelled/coded properly secured to prevent any contamination. For fresh samples, precautions are to be taken to prevent any

			infection/ damage to the sample. A minimum of 30-50 grams of sample is required.
7.	Quantitative Microscopic study of a leaf's parameters — Anatomy	2200/-	The sample should be secured to prevent any crushing of the leaf. A minimum of 30-50 grams of sample is required.
8.	Authentication of crude drug – Single drug anatomy (Sectional studies)	2500/-	Mature plant parts are preferred. The samples must be labelled/coded properly secured to prevent any contamination. For fresh samples, precautions are to be taken to prevent any infection/damage to the sample.

Approved analysis / user charges for training

Sl. No.	Training title	Rate and duration	Sample specifications/ Details/ Remarks
9.	Pharmacognosy/ Botany Training/ Dissertation work-related charges	5000/- for one month	Students interested in attending the training/ dissertation work, should obtain proper permission from the department head / institute.

Note:

1. Sl. No. 1-7: Rates approved by 102nd CCRAS - IFC held on 20/02/2025 and by the Ministry of Ayush vide their letter no. L-19013/25/2025-AS, dated 16/05/2025.
2. Sl. No. 8-9: Rate approved by SFC in 95th meeting held on 02.09.2022.
3. Discount is available as follows:
    - Govt. Institutes/Universities: 25% discount on total testing charges
    - Bona-fide students of recognized universities/research institutes: 50% discount on total testing charges
4. GST as applicable.

Chemistry

Approved analysis / user charges for testing

Sl. No.	Test Parameter	Rate	Sample specifications/ Details/ Remarks
10.	Loss on drying at 105ºC	220/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials
11.	Refractive index	220/-	Ghrita, Taila,
12.	Acid value	440/-	Ghrita, Taila
13.	Saponification value	440/-	Ghrita, Taila
14.	Iodine Value	440/-	Ghrita, Taila
15.	Fat Content	330/-	Araka, Dravaka, Ghrita, Taila
16.	Peroxide Value	440/-	Ghrita, Taila
17.	Rancidity Test	220/-	Ghrita, Taila, Lepa
18.	Ash Value	220/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials
19.	Acid Insoluble Ash	220/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials
20.	pH	220/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials
21.	Specific Gravity	220/-	Asava, Arista, Arka, Dravaka
22.	Total Solids	220/-	Asava, Arista
23.	Alcohol Content	440/-	Asava, Arista
24.	Reducing sugar and total sugar	660/-	Asava, Arista, Arka, Dravaka, Lehyam
25.	Volatile Matter	440/-	Arka, Dravaka
26.	Water-soluble extractive	220/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials

27.	Alcohol soluble extractive	440/-	Churna, Kvatha churna, Bhasma, Rasayana, Ghrita, Taila, Avaleha/Leham, Varti, Pishti, Chunnam, Ghana sattva, Guggulu, Lauha, herbal drugs, Plant materials
28.	Assay of iron	440/-	Bhasma, Pisti, Rasayana, Mandura, Karpam, Cunnam
29.	Assay of Calcium	440/-	Bhasma, Pisti, Rasayana, Parapati
30.	Assay of Potassium by Flame Photometer	440/-	Ksara, Lavana, Raw drugs, Formulations
31.	Assay of Sodium by Flame Photometer	440/-	Ksara, Lavana, Raw drugs, Formulations
32.	Assay of Lead	440/-	Metal/Element raw materials and Formulations
33.	Assay of Copper	440/-	Bhasma, Pisti, Rasayana, Parapati
34.	Assay of Mercury	440/-	Metal/Element raw materials and Formulations
35.	Resin Content	330/-	Guggulu
36.	Disintegration Test	220/-	Varti, Gutika
37.	Standardization of single plant drugs as per APC Format (loss on drying at 105 °C. Ash value, Acid insoluble ash, pH, Water soluble extractive, Alcohol soluble extractive, HPTLC)	8800/-	Minimum 100 g sample required
38.	Foreign Matter	220/-	-
39.	UV Spectrum	330/-	-
40.	TLC with photographs	880/-	Churna, Kvatha churna, Raw drugs, Formulation, Asava, Arista, Arka, Dravaka,Guggulu, Mandura, Karpam, Cunnam, Lep
41.	HPTLC- Qualitative	3850/-	Churna, Kvatha churna, Raw drugs, Formulation, Asava, Arista, Arka, Dravaka,Guggulu, Mandura, Karpam, Cunnam, Lep, Netrabindu
42.	HPTLC- Quantitative (Respective Marker Provided by the Customer)	4400/-	Churna, Kvatha churna, Raw drugs, Formulation, Asava, Arista, Arka, Dravaka,Guggulu, Mandura, Karpam, Cunnam, Lep, Netrabindu
43.	Assay of Elements by AAS: Lead	1320/-	Metal/ Element raw materials and Formulations
44.	Assay of Elements by AAS: Cadmium	1320/-	Metal/ Element raw materials and Formulations
45.	Extraction from plant powder (per kg) by cold maceration method	3300/-	-

46.	Extraction from plant powder (per kg) by successive cold maceration method	6600/-	-
47.	Organic Qualitative Analysis (per extract)	1100/-	Preliminary Phytochemical Screening
48.	Friability	500/-	Tablets
49.	Uniformity of Weight (Capsules/Tablets)	300/-	Varti, Gutika
50.	Resin Content	400/-	Guggulu
51.	Assay of trace Metal ion/element	500/- each	By using ICP-OES
52.	Sample preparation by microwave digestor (per sample)	200/-	Churna, Kvatha churna, Raw drugs, Formulation
53.	Assay of Arsenic and Cadmium (ICP-OES/AAS)	500 /- each	Churna, Kvatha churna, Raw drugs, Formulation
54.	Aflatoxins (HPLC)	3000/-	A minimum of 50 grams of sample with proper labelling/code is required. Solid / liquid / semisolid samples should be properly sealed in an airtight container to prevent any spillage/contamination.
55.	Pesticide residue (GC-MS-MS)	4000/-	A minimum of 50 g of samples should be provided.
UV Spectrophotometer			
56.	Profiling/ Scan	500/-	Churna, Kvatha churna, Raw drugs, Formulation
57.	Total phenols estimation	2000/-	Churna, Kvatha churna, Raw drugs, Formulation
58.	Total flavonoids	2000/-	Churna, Kvatha churna, Raw drugs, Formulation
59.	Total tannins	2000/-	Churna, Kvatha churna, Raw drugs, Formulation
60.	Total alkaloids	2000/-	Churna, Kvatha churna, Raw drugs, Formulation
FTIR Spectroscopy			
61.	Profiling/ Scan	1000/-	Churna, Kvatha churna, Raw drugs, Formulation
HPLC			
62.	HPLC profiling (if method provided)	2500/-	Churna, Kvatha churna, Raw drugs, Formulation
63.	HPLC profiling with method development	3500/-	Churna, Kvatha churna, Raw drugs, Formulation

Gas chromatography-Mass Spectrometer			
64.	GC-MS profiling (If method provided and library research)	4000/-	Samples should be solvent-free.
65.	GCMS profiling (with method development and library search)	7000/-	Samples should be solvent-free.
Stability testing			
66.	Accelerate study (6 months, including all basic tests)	35000/-	Churna, Kvatha churna, Raw drugs, Formulation
67.	Long-term/ Real term (1 year, including all basic tests	60000/ year	Churna, Kvatha churna, Raw drugs, Formulation

Approved analysis / user charges for training

Sl. No.	Training title	Charges and duration
68.	Training on basic test parameters as per API	Rs. 15000/- for 20 days
69.	Training on all basic parameters as per API and training for sophisticated instruments such as: UV-VIS, IR, Flame Photometer, HPTLC, AAS, ICP-OES, GC-MS-MS, etc.	Rs. 20000/- for 20 days

Note:

1. Sl. No. 10-47: Rates approved by 102nd CCRAS - IFC held on 20/02/2025 and by the Ministry of Ayush vide their letter no. L-19013/25/2025-AS, dated 16/05/2025.
2. Sl. No. 48-69: Rate approved by SFC in 95th meeting held on 02.09.2022.
3. Discount is available as follows:
    - Govt. Institutes/Universities: 25% discount on total testing charges
    - Bona-fide students of recognized universities/research institutes: 50% discount on total testing charges
4. GST as applicable.

Microbiology

Approved analysis / user charges for testing

Sl. No.	Test Name	Rate	Sample specifications/ Details/ Remarks
70.	Total microbial plate count	1000/-	Sample in aseptic container and minimum of 50g and above is required for testing
71.	Total Yeast/ Mold count	1000/-	
72.	Detection of specific pathogens – *E. coli*	700/-	
73.	Detection of specific pathogens – *Salmonella* sp.	700/-	
74.	Detection of specific pathogens – *P. aeruginosa*	700/-	
75.	Detection of specific pathogens – *S. aureus*	700/-	

Note:

1. Sl. No. 70-75: Rates approved by SFC in 95th meeting held on 02.09.2022.
2. Discount is available as follows:
    - Govt. Institutes/Universities: 25% discount on total testing charges
    - Bona-fide students of recognized universities/research institutes: 50% discount on total testing charges
3. GST as applicable.

Pharmacology

Approved analysis / user charges for testing

Sl. No.	Test Name	Rate	Sample specifications/ Details/ Remarks
Efficacy/ safety studies			
76.	Acute oral toxicity study OECD 420/423/425	40,000/-	-
77.	Acute oral toxicity study OECD 420 and 425	50,000/-	-
78.	28-day repeated dose oral toxicity study OECD 407	4,00,000/- (Rats) 2,50,000/- (Mice)	For Mice, based on the sponsor requirement, the cost may vary
79.	90 days repeated dose oral toxicity study OECD 408	8,00,000 (Rats) 6,00,000 (Mice)	For Mice, based on the sponsor requirement, the cost may vary
80.	Acute dermal toxicity study OECD 402	40,000/-	-
81.	Sub-acute dermal toxicity OECD 410	4,00,000/- (Rats)	-
82.	Sub-chronic dermal toxicity (90-day) OECD 411	8,00,000/-	-
83.	Hepatoprotective activity evaluation study in any one model (D-galactosamine/ Paracetamol / Alcohol induced / Carbon tetrachloride)	80,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
84.	Nephroprotective activity evaluation study in any one model (Cisplatin induced/ Diclofenac induced/ Gentamycin induced)	80,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
85.	Analgesic (Radiant heat method, hot plate method and acetic acid induced writhing method)	80,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
86.	Anti-inflammatory in any one model (Cotton pellet granuloma model)	70,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
87.	Anti-pyretic activity evaluation study	50,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.

88.	Anti-diabetic activity evaluation study – type II (High fat diet + STZ model)	2,50,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
89.	Diuretic/Anti-diuretic activity evaluation study	80,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
90.	Anti-dyslipidemia activity evaluation study (High-fat diet)	2,50,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
91.	Wound healing activity in any one model (Burn excision/incision model)	70,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
92.	Anti-ulcerative activity evaluation study (Alcohol induced)	80,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
93.	Anti-ulcerative activity evaluation study (Pylorus ligation)	1,00,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
94.	CNS activity evaluation study Anxiolytic activity (Elevated plus maze) Antidepressant activity (Porsolt forced swim test) Learning and Memory evaluation (Water maze test) Learning and Memory evaluation (Elevated plus maze test)	 50,000/- 50,000/- 70,000/- 50,000/-	The price may vary based on the inducing/ reference and outcome parameters stated by the customer.
Hematology / Biochemical analysis (Preclinical studies)			
95.	Complete blood count	400/-	Based on reagent availability
96.	Liver function test (package)	550/-	Based on reagent availability
97.	Lipid profile (Package)	400/-	Based on reagent availability
98.	Glucose	60/-	Based on reagent availability
99.	Urea	100/-	Based on reagent availability
100.	Creatinine	100/-	Based on reagent availability
101.	Serum sodium	200/-	Based on reagent availability
102.	Serum potassium	200/-	Based on reagent availability
103.	Chloride	200/-	Based on reagent availability
104.	Alanine transaminase (ALT)	100/-	Based on reagent availability

105.	Albumin	80/-	Based on reagent availability
106.	Alkaline phosphate (ALP)	100/-	Based on reagent availability
107.	Aspartate Transaminase (AST)	100/-	Based on reagent availability
108.	Direct bilirubin	80/-	Based on reagent availability
109.	Total Bilirubin	80/-	Based on reagent availability
110.	Blood Urea Nitrogen	80/-	Based on reagent availability
111.	Calcium	80/-	Based on reagent availability
112.	Cholesterol	80/-	Based on reagent availability
113.	Gamma Glutamyl transferase	140/-	Based on reagent availability
114.	HDLc	100/-	Based on reagent availability
115.	LDLc	160/-	Based on reagent availability
116.	LDH	140/-	Based on reagent availability
117.	Magnesium	100/-	Based on reagent availability
118.	Phosphorus	80/-	Based on reagent availability
119.	Total protein	80/-	Based on reagent availability
120.	Triglycerides	100/-	Based on reagent availability
121.	Uric acid	100/-	Based on reagent availability
122.	Kidney function test (Urea/ BUN, Creatinine, Total protein, Albumin)	300/-	Based on reagent availability
123.	Cardiac enzymes (CK, AST, LDH)	360/-	Based on reagent availability

Approved analysis / user charges for training

Sl. No.	**Training**	**Rate and duration**
124.	Lab utilization charges for PG/ PhD students	Rs. 5,000/- per month (Excluding consumable charges)
125.	Dissertation work	Rs. 15,000/- for 3 months for MSc/M. Phil students in the Biochemistry dept (excluding consumable charges)
126.		Rs. 20,000/- for 3 months for M. Pharm/ M. Phil students in the Pharmacology department (excluding consumable charges)

127.	Training programme	Rs. 6000/- Hands-on training programme in Biochemistry (2 weeks)
128.		Rs. 8000/- Hands-on training programme in Pharmacology (2 weeks)
129.		Rs. 10,000/- Summer training programme in the Biochemistry department (One month)
130.		Rs. 10,000/- Summer training programme in the Pharmacology department (One month)

Note:

1. Sl. No. 76-130: Rate approved by SFC in 95th meeting held on 02.09.2022.
2. Discount is available as follows:
    - Govt. Institutes/Universities: 25% discount on total testing charges
    - Bona-fide students of recognized universities/research institutes: 50% discount on total testing charges
3. GST as applicable.