JSS Mahavidyapeetha, Mysuru

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY) MYSURU

MINISTRY OF AYUSH
सत्यमेव जयते

TECHOLOGY VISION 2020 TIFAC MISSION RESEARCH

JSS COLLEGE OF PHARMACY

Rocklands, Ooty, The Nilgiris, Tamilnadu

TIFAC CORE IN HERBAL DRUGS

DRUG TESTING LABORATORY FOR AYURVEDA, SIDDHA & UNANI

Approved by : Ministry of AYUSH, Govt. of India & State Drug Licensing Authority for Indian Medicine, Govt. of Tamil Nadu (Under Form 48 and Rule 160B) License No: 17

JSS College of Pharmacy, Ooty

JSS College of Pharmacy, Ooty, Tamil Nadu, was established in 1980 and became the constituent college of JSSAHER, Mysuru, since 2008. Today the college is one of the largest postgraduate and research institutions in the country offering a wide spectrum of pharmacy programs such as D. Pharm, B. Pharm, Pharm D, Pharm D (PB), M. Pharm (10 specializations), Post Graduate Diploma, and Doctor of Philosophy programs. The college is ranked 4th in the country by the Ministry of Education, Government of India through NIRF Ranking-2024 among pharmacy colleges. Under the aegis of JSSAHER, the college has the proud privilege of having secured the international ranking viz., (THE) Times Hire Education and QS. As on date, the college has got more than 2700 research papers published in peer reviewed indexed journals to its credit with the citations and H-index of 30,000 and 64 respectively.

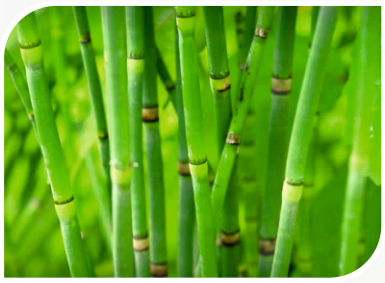
TIFAC CORE in Herbal Drugs

Technology Information, Forecasting and Assessment Council (TIFAC) of Department of Science and Technology, Government of India through its Mission, REACH Programs under the Technology Vision 2020 projects selected JSS College of Pharmacy, Ooty, to establish a Centre of Relevance and Excellence (CORE) in Herbal Drugs. The TIFAC CORE in Herbal Drugs is functioning since 2001 with the broader objectives to undertake research programmes for the Indian industries engaged in manufacturing Herbal Drugs/Traditional Medicinal Products in addition to meeting the specialized demands of human resource requirements of such industries. This center is known for its advanced research in herbal medicine, contributing to development of innovative herbal formulation. It boats a team of highly qualified researchers with extensive experience in herbal drug development. TIFAC the center engages in collaborations with many industries and research institutes, facilitate the transfer of knowledge and technology. The center emphasizes sustainable practices in herbal drug research, promoting eco-friendly and ethical approaches in herbal products. It plays an important role in training and educating future professionals to enhancing their skill and knowledge. It is involved in outreach program that aim to improve public awareness about the benefits of herbal products. The center has a track record of developing patented herbal products and technologies that showing the innovation in the field. With a strong focus on quality and standards, this center ensures that its research adheres to the highest scientific and ethical guidelines.

AYUSH DTL

The AYUSH Drug Testing Laboratory at JSS College of Pharmacy, Ooty is approved by Ministry of AYUSH, Govt. of India and Govt. of Tamil Nadu. The laboratory ensures the highest standards of quality and safety for AYUSH drugs. The lab is equipped with advance level instruments and technology to ensure accurate and reliable testing. Our laboratory will involve in research activities to develop new testing methodologies and analysis of drug formulations. The lab will collaborate with herbal drug manufacturers and regulatory bodies to support the growth of the Ayush industry. Our lab will offer opportunities for pharmacy students to gain practical experience and provides hands-on training in drug testing and analysis. It conducts safety testing to ensure that herbal and traditional medicines are free from contaminants like heavy metals, pesticides and microbial contaminants. By validating the efficacy of traditional medicine, our lab will support preventive healthcare practices that can reduce the burden on conventional healthcare systems. Ayush Drug Testing Lab offers a wide range of testing services, including quality control, stability testing, and compliance with herbal pharmacopeial standards. This breadth of services makes it a valuable resource for both academic and industrial applications. The lab provides vital information on medication formulations and their interactions, which is essential support for traditional research. Overall, the Ayush Drug Testing Lab at JSS College of Pharmacy, Ooty stands out for its commitment to high standards in drug testing, its support for research and education, and its role in ensuring the safety and efficacy of herbal products.

Tests and Determinations



Preliminary Phytochemical Screening

- Carbohydrates, Proteins, Glycosides, Alkaloids, Tannins, Flavonoids, Phenols, Volatile oils and Fixed oils.
- Specific Tests for Commercial Resins, Honey, Spices and Volatile oils.

Determination of Quantitative and Qualitative Microscopy

- Transverse Sections (Leaf, Root, Rhizome, Stem, Fruit)
- Stomatal Number
- Stomatal Index
- Vein Islet-number
- Palisade Ratio

Quantitative Estimation of Herbs and Crude Extracts

- Net Content
- Foreign Matter
- Determination of Total Ash
- Determination of Acid-Insoluble Ash
- Determination of Water-Soluble Ash
- Determination of Sulphated Ash
- Determination of Alcohol-Soluble Extractive
- Determination of Water-Soluble Extractive
- Protein Estimation
- Estimation of Total Flavonoid Content
- Estimation of Starch Content
- Estimation of Sugar Content
- Estimation of Fatty oil Content

- Determination of Ether-Soluble Extractive (Fixed Oil Content)
- Determination of Moisture Content (Loss on Drying)
- Determination of Volatile Oil in Drugs
- Estimation of Total Alkaloid Content
- Estimation of Total Phenol Content

Chemical Fingerprinting of Herbs and Crude Extracts

- Thin Layer Chromatography
- High Performance Thin Layer Chromatography
- High Performance Liquid Chromatography
- Gas Chromatography
- Flash Chromatography

Limit Tests for Finished Products

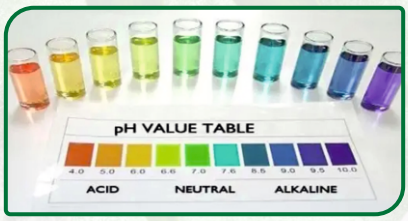
- Limit Test for Arsenic
- Limit Test for Chlorides
- Limit Test for Heavy Metals
- Limit Test for Iron
- Limit Test for Lead
- Limit Test for Sulphates
- Heavy Metals by Atomic Absorption Spectrophotometry

Toxicity Tests

- Total Aerobic Microbial Count
- Tests for Specified Micro-organisms
- Pesticide Residues
- Test for Pesticides
- Test for Aflatoxin
- Test for the absence of Methanol
- Cell line studies

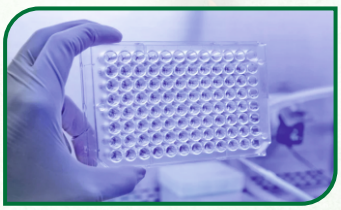
Physical Tests and Determinations

- Refractive Index
- Determination of pH Value
- Determination of Melting Point/Range
- Determination of Congealing Range
- Determination of Boiling Range
- Determination of Optical Rotation
- Determination of Viscosity
- Determination Total Solids
- Determination of Saponification Value
- Determination of Peroxide Value
- Determination of Unsaponifiable Matter
- Weight per Millilitre and Specific Gravity
- Determination of Melting and Congealing Range
- Determination of Iodine Value
- Determination of Acid Value
- Detection of Mineral Oil
- Rancidity Test
- Determination of Alcohol Content



Chemical Tests and Assays

- Anti-oxidant Assays
- Estimation of Oils (Eucalyptus oil,Winter green etc)
- Estimation of Curcumin
- Determination of Aluminium
- Determination of Borax
- Determination of Calcium
- Determination of Copper
- Determination of Iron (Fe)
- Determination of Magnesium
- Determination of Mercury
- Determination of Silica (SiO_2)
- Estimation of Sodium and Potassium by Flame Photometry
- Determination of Sodium chloride
- Determination of Sulphur



Advanced Studies

- UV Spectroscopy
- IR Spectroscopy
- Dissolution
- Assay
- Stability Studies
- Cell line studies
- Toxicity Studies
- Cytotoxicity Studies
- Flash Chromatography
- HPTLC
- Gas Chromatography
- Texture Analyzer
- Method Development and Validation by HPLC
- LC-MS (Liquid Chromatography-Mass Spectroscopy)
- Particle Size Analyzer
- Histopathological Studies
- DSC (Differential Scanning Calorimeter)
- RT-PCR
- Pharmacokinetic Studies
- Diffusion Studies for Topical Preparations
- Solubility Studies
- Extraction

Isolation Isolation of bioactives from crude extracts are carried out using column and Flash chromatography.

Note* Isolation services are provided on request basis with predetermined solvent system.

Write to us for Consultancy and Contract Research Services:

Dr. Shanmugam Ramaswamy, **M.Pharm, Ph.D, DPM, PGDPL (Nalsar), FAGE**

Director - TIFAC CORE in Herbal Drugs

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