

DEPARTMENT OF PHARMACOLOGY

NATIONAL AYURVEDA RESEARCH INSTITUTE FOR PANCHKARMA

1) Name of Department with Address

Department of Pharmacology
National Ayurveda Research Institute for Panchakarma,
Cheruthuruthy, Thrissur, Kerala, PIN: 679531

2) Information regarding current Head of the Department and other scientist.

Photo	Name	Designation	Mobile No.	E-mail ID
	Dr. Sudesh N. Gaidhani	Assistant Director & Head	8810214926	naripparmacology@gmail.com
	Dr. Srikanth Ala	Research Officer	9949959910	srikanthvbcops@gmail.com
		Assistant Research Officer (03 post)		

3) List of Research Projects Completed by Department of Pharmacology

Sr. No.	Title of the project	Sponsoring Agency	Year
1)	CNS studies, & exploratory behaviour of <i>Adiantum lanulatum</i> (stem bark)	CCRAS	2004
2)	CNS studies, exploratory behaviour & anti depressant activity of <i>Abies webbiana</i> (Leaves)	CCRAS	2004
3)	CNS studies, exploratory behaviour & anti depressant activity of <i>Ailanthus excelsa</i> (stem bark)	CCRAS	2004
4)	CNS studies, exploratory behaviour & anti depressant activity of <i>Adiantum capillus veneris</i> (Whole plant)	CCRAS	2004
5)	Pharmacological evaluation of Ayurvedic preparation Amrthottaram Kwatha (CNS studies, & exploratory behaviour)	CCRAS	2004
6)	CNS studies, exploratory behaviour, anti depressant	CCRAS	2005

	activity, Analgesic, anti inflammatory & anti pyretic study of <i>Sisymbrium irio</i> Linn. (Seeds) Decoction & Aqueous extracts		
7)	CNS studies, anti depressant activity, Anti psychotic, Acute toxicity, Analgesic, anti inflammatory of Nayopayam Kwatha	CCRAS	2005
8)	Acute toxicity studies, 28 days repeated dose oral toxicity, 91 days repeated dose oral toxicity studies of Ayush M, Ayush SL, Ayush Manas, Ayush QOL2.	CCRAS	2006
9)	CNS studies, exploratory behaviour, anti depressant activity, Acute toxicity, Hypnotic potentiating effect, Analgesic, anti inflammatory & anti pyretic studies of <i>Anethum sowa</i> Roxb.	CCRAS	2006
10)	Acute toxicity studies, sub acute toxicity study of Manasamitra Vataka	CCRAS	2007
11)	Acute and chronic toxicity studies of Yogaraja Guggulu	CCRAS	2008
12)	Acute & chronic dermal toxicity studies of Mahanarayana Taila	CCRAS	2008
13)	Intellect promoting activity of Manasamitra Vataka	CCRAS	2008
14)	Acute toxicity, sub acute toxicity study of Ayurvedic Bhasma/ Rasakalpa- coded drug –Wj	CCRAS	2009
15)	Sub acute and chronic toxicity studies of Ayurvedic Bhasma / Rasakalpa- Coded drug Yn in both Wistar albino Rats and Swiss albino Mice.	CCRAS	2009
16)	Sub acute (28 days) and Chronic toxicity 90 Days) studies of Zj in bothn wistar rats and Swiss mice.	CCRAS	2010
17)	CTD Monograph of <i>Commiphora wightii</i> (Arn.) Bhandari, <i>Curcuma longa</i> . L, <i>Emblica officinalis</i> . Gaertn., <i>Piper longum</i> L., <i>Rauwolfia serpentina</i> (L). Benth	CCRAS	2011
18)	CTD Monograph of <i>Cassia angustifolia</i> Vahl., <i>Gloriosa Superba</i> L.	CCRAS	2012
19)	Evaluation of Analgesic, anti-inflammatory and anti arthritic activity of Sunthi guggulu (Triphala shodhita) and gomutra shodhita) in experimental animals	CCRAS	2016
20)	Evaluation of Analgesic activity of coded drugs AYUSH SG1 and AYUSH SG2.	CCRAS	2017
21)	Evaluation of analgesic, anti-inflammatory Analgesic and antiarthritic activity of Sunthi guggulu (Triphala shodhita (TS) and gomutra Shodhita (GS)	CCRAS	2018
22)	Evaluation of coded drug AYUSH SG 3 for analgesic and anti-inflammatory activities in experimental animals.	CCRAS	2019
23)	Evaluation of coded drugs AYUSH SG 4 and AYUSH SG 5 for analgesic and anti-inflammatory activities in experimental animals.	CCRAS	2020
24)	Evaluation of antidiabetic activity of Ficus Glibbosa Blume (Leaves & Stem bark) extracts in streptozotocin-nicotinamide induced diabetes in experimental animals.	CCRAS	2020
25)	Evaluation of Vatariguggulu for anti-arthritic activity through different arthritis models in experimental animals.	CCRAS	2021
26)	Evaluation of antidiabetic activity of Vasant kusumakar ras in streptozotocin and high fat diet induced diabetes in Sprague	CCRAS	2022

	Dawley rats.		
27)	Evaluation of Anti-Diabetic activity of Nisha Triphala Yoga in Streptozotocin and High fat diet induced Diabetes in Sprague Dawley Rats.	CCRAS	2022
28)	Acute and 90 days repeated dose oral toxicity study of AYUSH-SC 3 in experimental animals.	CCRAS	2022
29)	Acute and 90 days repeated dose oral toxicity study of AYUSH-64 in experimental animals.	CCRAS	2022
30)	Anti-arthritic activity of AYUSH SG5 in experimental animals.	CCRAS	2023
31)	Toxicity Profile of Shwasakuthar Rasa In Experimental Animals	CCRAS	2023
32)	Effect of Brahmidrakshyadikashayaon chronic restraint stress (CRS) induced neurobehavioral alterations in experimental Rats.	CCRAS	2024
33)	Comparative evaluation of selected Ayurvedic Pharmacopoeial source plants and their substitutes through Experimental Pharmacology.	CCRAS	2024
34)	Evaluation of Brahmi Ghrita in in-vitro and in-vivo models of Alzheimer's disease.	CCRAS	2024
35)	Acute and Sub Chronic (90 days) repeated dose oral toxicity study of AYUSH GMH in experimental animals.	CCRAS	2025

Salient Achievements of the Department

- The department of Pharmacology is well recognized for its scientific contribution towards bio-prospecting of indigenous medicine. Extensive studies on 'AYUSH-49' were carried out between 1975-77 provided a lucid insight into its anti-histaminergic potential, evident from the rabbit's Ileum based experiments.
- During 1980-82 animal house witnessed an exponential growth of livestock from 60 to 527. In addition to the rodents and lagomorphs, animal house had also housed frogs, leeches, dogs and cats in order to explore the cardiovascular and neuromuscular effects of Ayurvedic preparation.
- Besides performing isolated frog heart and rabbit atrial experiments, heart rate and electrocardiographic analysis of cardiogenic drugs had started since 1981 accentuating the scope of research.
- The department has generated scientific evidence on efficacy of 35 Single, 16 compound and 8 coded ayurvedic formulations. Additionally, the department has generated scientific evidence on safety/ toxicity evaluation of 29 single, 20 compound and 9 coded drugs and developed the state of art equipment facilities.
- Apart from the research activities, the research staff had rendered their literary contribution to book chapters in 'Database on Medicinal plants used in Ayurveda Vol.10', 'Report of Pharmacological profile and safety/toxicity of Yograj guggulu and Mahanarayana Taila (classical formulation)' and 'Exploration of Veterinary practices in Ayurveda'.

- The department have also contributed to the preparation of monographs of various herbs such as *Commiphora wightii*, *Curcuma longa*, *Emblica officinalis*, *Piper longum*, *Rauwolfia serpentina*, *Cassia angustifolia* and *Gloriosa superba*.
- Recently the department had conducted one day seminar on ‘Standardization and Preclinical Studies of Ayurvedic Formulations’ on 6th March 2023. So far the research staff of this department has published more than 50 research publications and attended various conferences/workshop/scientific meetings at National and international level.

Activities of About Department of Pharmacology since Inception

Medicinal Plants play an important role in Drug Development, as these are the source of majority of ingredients in Ayurvedic as well as Modern medicine. For successful and effective development of a drug, the basic requirement for the correct identification is the safety and biological activity. The core component of pharmacology research comprises of validation of the Ayurvedic formulations or medicinal plants by different biological screening methods and safety or toxicity studies, finding the effect dose range and dose dependent effect, generation of biological screening data for clinical implementation, contemporary scientific and pharmacological leads for important diseases of national importance based on strengths of Ayurveda and from the folklore claims.

The genesis of the department dates back to the month of August 1972, a year after the consecration of the institute. With an objective of carrying out Pharmacological and Toxicological investigations on Ayurvedic formulations, this department has seen a phenomenal metamorphosis over the years. Under the tutelage of Dr. Raja Ravi Varma, the then Senior Research Officer, the department has been quickly organized itself and started breeding experimental animals within a span of six months. Early couples of years were mostly focused on understanding the antifungal properties of ayurvedic formulation such as ‘*Majishtadhi Yoga Churnam*’, ‘*Amruthothara Yogachurnam*’, ‘*Tagara*’ and ‘*CABA-A*’. However, with procurement of facilities for performing dose-response experiments between 1972-74, the departmental capability was flexed. This upgradation has unlocked a battery of dose-response experiments enabling us to understand the tissue specific effect of Ayurvedic formulations.

Extensive studies on ‘*AYUSH-49*’ carried out between 1975-77 provided a lucid insight into its anti-histaminergic potential, evident from the rabbit’s Ileum based experiments. Additionally, the department had also explored the negative inotropic and chronotropic effects of *AYUSH-49* which would endorse its candidature as a hypotensive agent. Contemporarily, ‘*Gandhamarjara Veerya*’ project was a unique yet challenging task handled by the department. Our studies have shown that

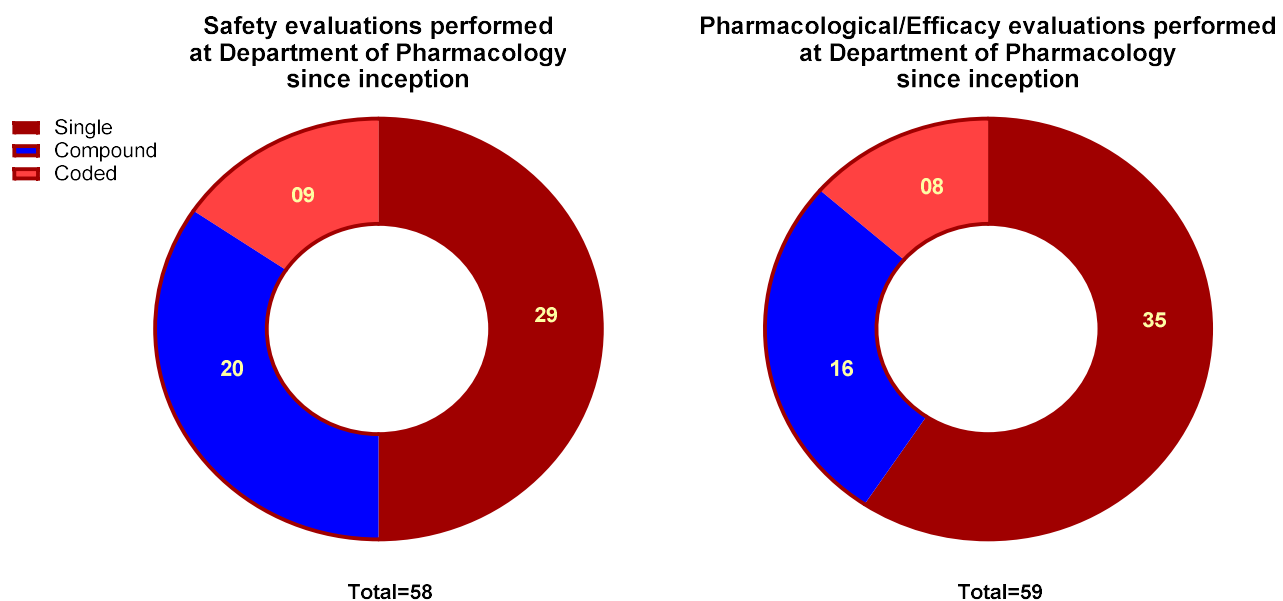
'*Gandhamarjara Veerya*' could reverse histamine induced iliac spasm. Perpetually, our department continued to explore the pharmacological activities of '*Dhanwantara Gutika*', '*Kandi Venna*' and a coded drug *SVE* in collaboration with Captain Srinivasamurthy Research Institute, Madras. As the department thrived through the years, a special attention was paid on expanding the livestock of the animal house. During 1980-82 animal house witnessed an exponential growth of livestock from 60 to 527 in order to parallel with the increasing experimental work load and research needs. Measures were taken since then in order to maintain a quantum of life stock which could facilitate a smooth research activity in the department. In addition to the rodents and lagomorphs, animal house had also housed frogs, leeches, dogs and cats in order to explore the cardiovascular and neuromuscular effects of Ayurvedic preparation.

Beside performing isolated frog heart and rabbit atrial experiments, heart rate and electrocardiographic analysis of cardiogenic drugs had started since 1981 accentuating the scope of research. The department continued to study more drugs such as '*Vilwadi gutika*', '*Sahachara*', '*Lodhrasava*', '*Balarishtam*', '*Vettumaran gutika*', '*Mandooravataka*' and established their CNS and anti-inflammatory activities. With a soaring research activity and a greater shift towards neuromuscular profiling of ayurvedic drugs, experimental models for evaluating anti-depressant, anti-parkinsonian, anti-psychotic, analgesic, anti-inflammatory and anti-convulsant activities were standardized. In accordance, department was fortified with facilities for neurological evaluation such as mazes, rotarod, pole climbing apparatus and electro-convulsometer. In recent years the research focus is diversified with a special emphasis on Metabolic, osteoarthritic, neuro-behavioral and cardiovascular screening of Ayurvedic preparations. In accordance to this, several projects were completed related to anti-diabetic studies on *Vasanta Kusumakar Ras*, *Nisha Triphala Yoga*, Anti-arthritis study of *Vatari Guggulu* & *AYUSH SG-5* and safety evaluations of *AYUSH 64*, *AYUSH SG-5* & *AYUSH SC-3*, safety study of *AYUSH GMH*, Comparative evaluation of Ayurvedic source plants for analgesic and anti-inflammatory activity and *Brahmi Drakshyadi Kashayam* for neurobehavioral alterations. At present department is engaged with and 02 IMR collaborative project with IITR & JSSCP for the years 2024-26.

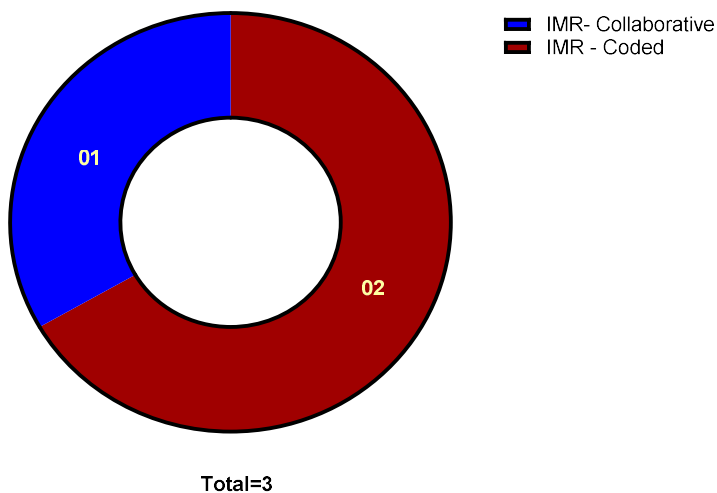
It gives an immense sense of satisfaction to announce that the department has generated scientific evidence on efficacy of 35 Single, 16 compound and 8 coded ayurvedic formulations. Additionally, the department has generated scientific evidence on safety/ toxicity evaluation of 29 single, 20 compound and 9 coded drugs. Apart from the research activities, the research staff had rendered their literary contribution to book chapters in '*Database on Medicinal plants used in Ayurveda Vol.10*', '*Report of Pharmacological profile and safety/toxicity of Yograj guggulu and*

Mahanarayana Taila (classical formulation)’ and *‘Exploration of Veterinary practices in Ayurveda’*. The department have also contributed to the preparation of monographs of various herbs such as *Commiphora wightii*, *Curcuma longa*, *Embllica officinalis*, *Piper longum*, *Rauwolfia serpentina*, *Cassia angustifolia* and *Gloriosa superba*.

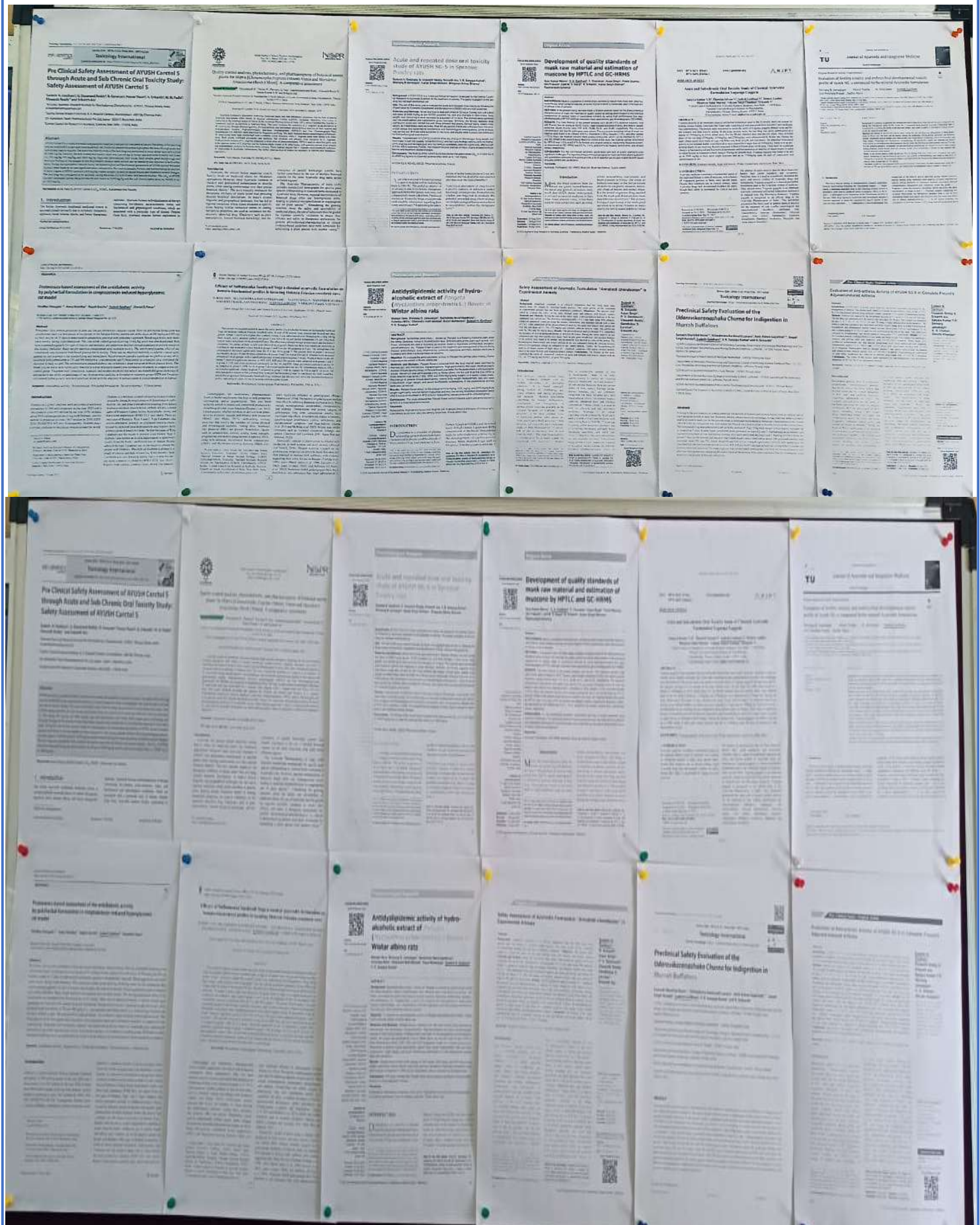
Recently the department had conducted one day seminar on ‘Standardization and Preclinical Studies of Ayurvedic Formulations’ on 6th March 2023. So far the research staff of this department has published more than 50 research publications and attended various conferences/workshop/scientific meetings at National and International level.



Ongoing and upcoming projects (2023-2026)



RECENT PUBLICATIONS



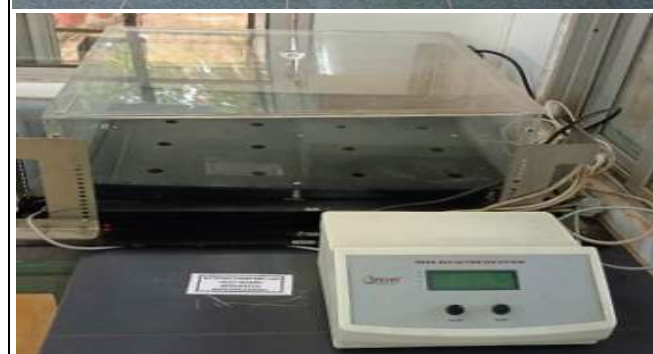
Photographs of Animal House Facility and Instruments of Research Laboratory

Animal House Facility

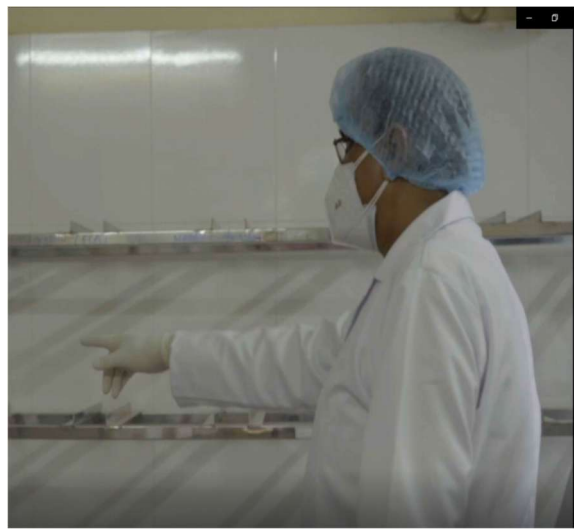


Instruments of Research Laboratory

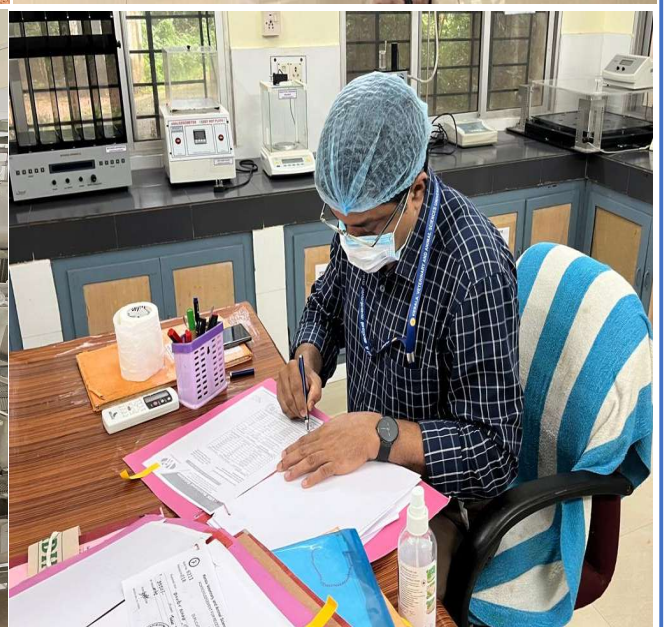




GLIMPSES OF PHARMACOLOGY AND SAFETY RESEARCH FACILITIES



GLIMPSES OF INSTITUTIONAL ANIMAL ETHICS COMMITTEE (IAEC) MEETING



GLIMPSES DURING THE VISIT OF COLLEGE STUDENTS



