

**ISO 9001: 2015  
Certified Institution  
Registered with  
MSME, Govt. of India**

# **HARMAN RESEARCH**

*Ultimate Researcher*

**25 Years  
of Services**

## **Research Training Testing Consultancy Publications**

**Research**

**Training**

**Testing**

**Consultancy**

**Publication**



### **HARMAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH**

**Registered with Ministry of Micro, Small and Medium Enterprises, Govt. of India**

**ISO 9001: 2015 Certified Institution**

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- Research cum learning institute focus on modern and next-generation research studies without compromising traditional pedagogy methods.
- Nourish the young minds of students and research scholars with hidden talents and kindle the spirit of research.
- Employs classroom teaching and vital tools of research with well-furnished classrooms, laboratory and library. Classroom teaching is aided by electronic audiovisual aids.
- This institute provides basic education and as a continuum higher education and research in the field of health, allied health sciences, agriculture and environmental sciences.

### QUALITY OBJECTIVES

- To Generate high quality and innovative research
- The provision of guidelines for earmarking research activity
- To develop state of the art infrastructure.
- To impart globally focused research and create world-class professionals.
- To promote research, training and facilitate scientific research and related scholarly activities
- To establish a synergetic relationship with Industry, Universities and Research institutes.
- To develop a local, national and international profile as a centre for research.
- To publish research findings through dissemination in a peer-reviewed impact Journals

### QUALITY POLICY

- Facilitated to undertake Research and Development programmes, consultancy services and training programmes to evolve appropriate solutions to the diverse scientific problems faced by the students and researchers.
- It is committed to the timely and successful completion of research and development, training and consultancy projects to the entire satisfaction of students and research scholars.

At Harman Research, we offer a wide range of research services to support your research needs (**Life Science, Chemistry, Physics and Engineering- Biotechnology**).

1. **In Plant-Training/Internship**
2. **Research Assistance**
3. **Research Consultant**
4. **Thesis Writing Assistance**
5. **Journal Publications Assistance**
6. **Testing**
7. **Biological data analysis**

#### Nanotechnology

- Synthesis of NPs from chemical and biological (**Plant, animal, microbes**) methods using different metals (Ag, Cu, Zn, Mg, Fe, etc.)
- Characterization of NPs
- 1. UV-Vis, 2. FTIR, 3. SEM and TEM (with image prediction)
- 4. EDX, 5. XRD 6. SAD
- Biological applications of NPs → *in vitro* studies

#### Computational analysis / In silico modelling

- Molecular Docking studies (**Drug design** - Different algorithm-based programs were used)
  1. Protein vs Ligand,
  2. Protein vs Protein,
  3. DNA vs Ligand,
  4. DNA vs Protein,

5. Protein vs Metal, etc.,
- Pharmacokinetic studies (**ADMET**)
- DFT analysis (Chemistry and Biophysics)
- Cheminformatics, Bioinformatics

#### In vitro studies (Biological activities)

- Anticancer activity (All Cell lines)
- Antidiabetic activity
- Anti-inflammatory activity
- Anti-arthritis activity
- Antimicrobial activity
- Antimitotic activity (Onion)
- Anti-obesity activity
- Antioxidant activity
- Antiuro lithiatic activity (Kidney Stone)
- Anti-stress activity
- Antioxidant activity in RBC
- Antiproliferative activity (Yeast)
- Genotoxicity activity
- Hepatoprotective activity
- Hemolytic activity
- Hypolipidemic activity
- Insecticidal activity
- Larvicidal activity
- Thrombolytic activity
- Immunomodulatory activity
- Anti-Feedants, Repellents activity

#### **Other works as per the protocol request**

#### Analytical Services

- GC-MS, HPLC, HPTLC, LCMS
- Uv. Visible Spectrum, FTIR,
- Column Chromatography,

- Centrifugation (Upto 25,000rpm REMI Cooling Centrifuge)
- Electrophoresis (Horizontal, vertical and slab),
- Paper Chromatography,
- Thin Layer Chromatography

#### Molecular Studies

- DNA sequence
- Apoptosis, Pyroptosis & Necrosis Assays
- Nuclear Signaling, DNA Damage, & Proliferation Assays
- Cancer Signaling Pathways & Phenotypic Assays
- Functional Cell Stress Assays
- Energy Metabolism & Autophagy Assays.

#### Phytochemistry

- Extraction of raw materials with different methods.
- Phytochemical Analysis (Qualitative and Quantitative).
- Vitamin Analysis (Qualitative and Quantitative).
- Inorganic element analysis (Qualitative).
- Thin Layer Chromatography (Separation of Flavonoids, Terpenoides, Quercetin etc.).
- Column Chromatography (Separation of Phyto-compounds).

### Hands-on Training in

Phytochemical techniques, Nano technique and Electrophoresis.

### Pharmacognosy

- Physicochemical analysis (ash values, moisture content, minerals content, extractive values etc).
- Microscopic study (TS, powder study, veinlets, vein termination, stomatal index etc).
- Fluorescence analysis,
- Histochemical analysis,

### Statistical data analysis

### **B.Tech/M.Tech works (Plant, Nano and Biochemical technology)**

### **Innovative Approaches in Pest Control** (Anti-Feedants, Repellents, etc.,)

**Food analysis** (micro and macro nutrients),  
GL and GI. Total antioxidant capacity.

### **Natural dye preparation and Bio-application**

**Microorganism** (Isolation, Quantification, Characterization)

### **Phytotechnology**

- Effect on plant growth
  - Seed Germination of Plants
  - Plant **pathogen** isolation and identification.  
Other works as per the protocol request
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- Water analysis
  - Water Geochemistry
  - Organic synthesis (Characterization and application / with computational)
  - UV-Vis./fluorescence sensor/chemosensors

- Organogel formulation  
(Characterization and drug delivery)
- Anticorrosive activity
- Photocatalytic activity/ Dye Degradation
  - 1. Adsorbent isotherm
  - 2. Adsorption kinetics, etc.,
- Crystal synthesis
- Aquaculture
- Aquatic toxicology
- Plankton research
- Biochemical comparative study
- Statistical analysis for field study
- Organism isolation and identification.
- Antimicrobial activity (MIC and MBC), etc.,
- Other works as per the protocol request

### PRE-CLINICAL STUDIES

1. Anti-Ageing activity
2. Anti-anaemic activity
3. Anti-Arthritic activity
4. Anti-Atherosclerosis activity
5. Anti-Cancer activity
6. Anti-Diabetic activity
7. Anti-Infertility
8. Anti-Inflammatory activity
9. Anti-Pyretic and analgesic activity
10. Anti-Stress activity
11. Anti-Ulcer

12. Cardioprotective activity
13. Chemical and Metal toxicity
14. Genoprotective activity
15. Heart-related diseases
16. Hematological work
17. Hepatoprotective activity
18. Hypolipidemic activity
21. Kidney related diseases
22. Liver related diseases
23. Lungs related diseases
25. Nephroprotective activity
26. Neurodegenerative activity
27. Generation of Bio-electricity
28. Wound healing activity

### **Other animal works as per the protocol request**

### Environmental studies

1. Alcohol toxicity
2. Antimicrobial activity
3. Cigarette smoke-exposed Toxicity
4. Drug toxicity
5. Effect of probiotic in fish
6. Mosquito coil toxicity
7. Pesticide toxicity

### **Histopathological studies**

### **Histochemical studies**