In vitro pharmacology means studies on the biological effects of drugs and pharmaceuticals, conducted outside of living organisms. Any new drug or pharmaceutical that enters the market is a product of a long and rigorous development, testing, and approval process. At the early stage of drug discovery, the most promising molecules ("leads") undergo further screening to generate high-quality data in a precise and timely manner. All these parameters including chemical's safety, toxicity, pharmacokinetics, and metabolism must be assessed in the pre-clinical trials phase.

**In vitro pharmacology can be used to:**

- obtain high-quality data on the safety and toxicity of your drug candidate
- detect potential adverse effects early in the drug development process
- analyze compounds to guide pre-clinical *in vitro* safety and toxicity studies
- evaluate the potency and efficacy of your drug candidate against the targeted disease
- gather data on PK and PD
- further study the drug candidate’s action mechanism
- evaluate the activity of biosimilar compounds

MedAI offers a comprehensive selection of services to support your research needs in biology and *in vitro* pharmacology. Our experts are specializing in providing the broadest drug discovery portfolio of both standard and custom *in vitro* assays. Services for drug discovery binding and functional assays are listed below.
GPCRs Assays

Ion Channels Assays
Kinase Enzymes Assays

Cytokine Receptors Assays
• Growth Factor Receptors Assays

• Transporters Assays
Nuclear Receptors Assays

- Class I: Steroid Receptors (SR)
- Class III: Dimeric Orphan Receptors (DOR)
- Class II: RXR Heterodimers
- Class IV: Monomeric Orphan Receptors (MOR)

Phosphatases & Proteases Assays

- High ATP/ADP ratio
- Phosphorylation
- Dephosphorylation
- Phosphorylation induced changes in conformation of protein
- Kinase
- ATP
- ADP
- PO_4^3-

Phosphatase
- P_i
- H_2O
Epigenetic Proteins & Enzymes Assays

Ubiquitin Enzymes & Substrates Assays

Our Advantages

- Scientists with expertise across a variety of therapeutic areas, target types, assay formats, and instrument and automation platforms
- Cost-effective, high quality, reproducible data, and flexible solutions with fast turnaround times.

MedAI provides customized technical solutions that can best meet your requirements, prerequisites, and objectives, with particular attention given to the feasibility study and personalized management of your projects, covering the whole process of drug discovery and development.