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Journal of Marine Science: Research & Development

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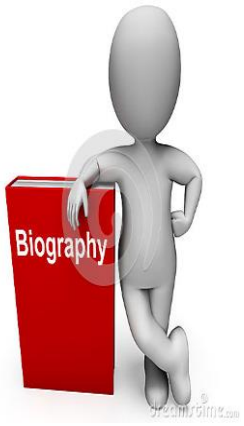
Editorial Board Member

Journal of Marine Science: Research & Development

BIOGRAPHY



Dr. Sastry has completed his Secondary School Education from Board of Secondary Education, Andhra Pradesh in 2003 with 80 percentage and studied his Higher Secondary Education from Board of Intermediate Education, Andhra Pradesh in 2005 with 60 percentage and got into his BSc in Biotechnology, Biochemistry and Microbiology from Andhra University in 2008 with 68 percentage and achieved his masters M.Sc Biochemistry from GITAM University, Visakhapatnam in 2011 with 8.68 CGPA and currently doing his PhD in Gitam university, Visakhapatnam, India

RESEARCH INTEREST

- Cancer therapeutics
- Human Infections
- Immunology
- Phytochemistry
- Pharmacology
- Enzymology
- Drug Design.

Pharmacology

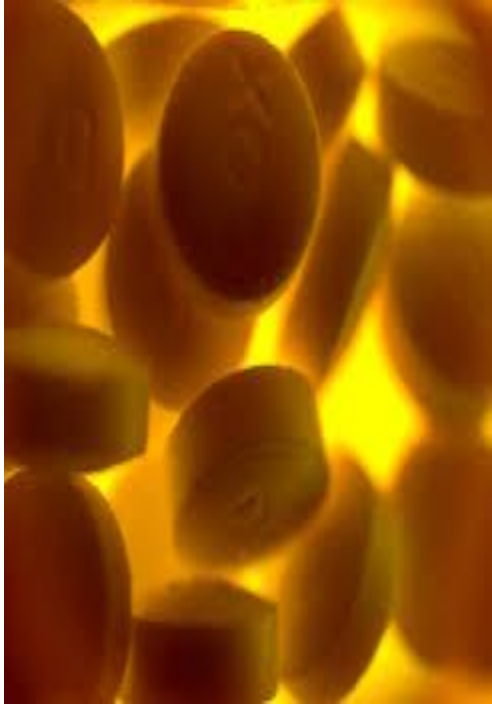
DEFINITIONS:

Pharmacology is the study of how drugs exert their effects on living systems.

Pharmacologists work to identify drug targets in order to learn how drugs work. Pharmacologists also study the ways in which drugs are modified within organisms.

In most of the pharmacologic specialties, drugs are also used today as tools to gain insight into both normal and abnormal function.

Pharmacology



Divisions of Pharmacology

- Pharmacokinetics
- Pharmacodynamics
- Pharmacogenomics

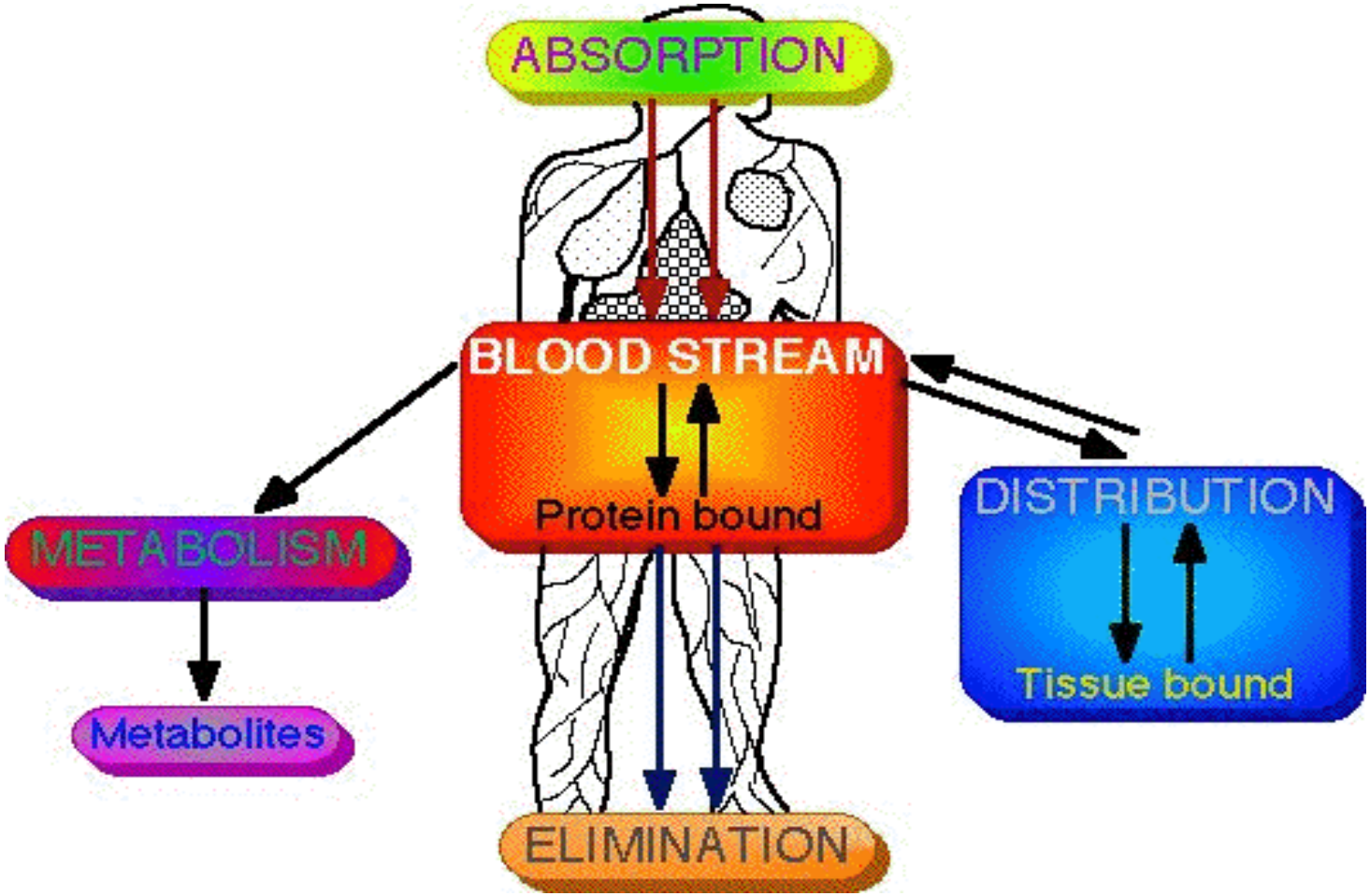
Pharmacokinetics

Is what the body does to the drug.

The magnitude of the pharmacological effect of a drug depends on its concentration at the site of action.

- Absorption
- Distribution
- Metabolism
- Elimination

Pharmacokinetics



Pharmacodynamics

Is what the drug does to the body.

Interaction of drugs with cellular proteins, such as receptors or enzymes, to control changes in physiological function of particular organs.

- Drug-Receptor Interactions
  - Binding
- Dose-Response
  - Effect
- Signal Transduction
  - Mechanism of action, Pathways


What drug does to the body
Pharmacodynamics
Pharmacokinetics
What body does to the drug
Absorption
Distribution
ADME
Metabolism
Elimination
Pharmacodynamics vs Pharmacokinetics
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Pharmacogenetics

Area of pharmacology concerned with unusual responses to drugs caused by genetic differences between individuals.

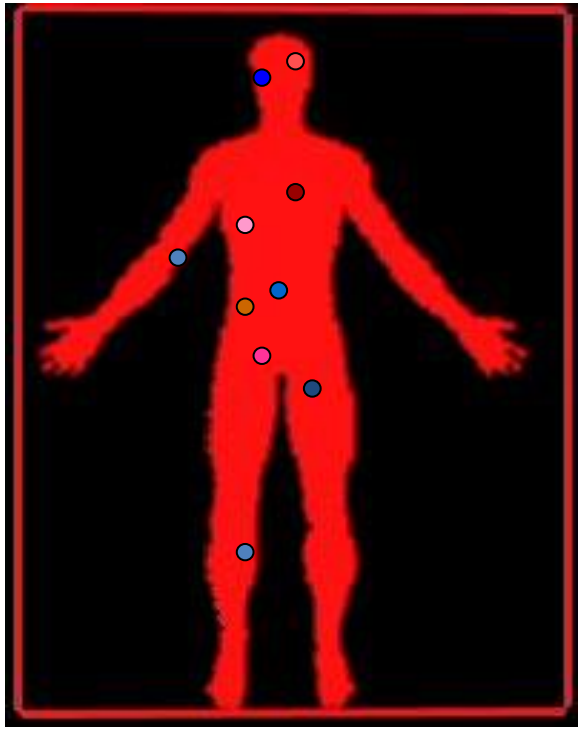
Responses that are not found in the general population, such as general toxic effects, allergies, or side effects, but due to an inherited trait that produces a diminished or enhanced response to a drug.

- Differences in Enzyme Activity
  - Acetylation polymorphism
  - Butylcholinesterase alterations
  - Cytochrome P450 aberration

Drugs

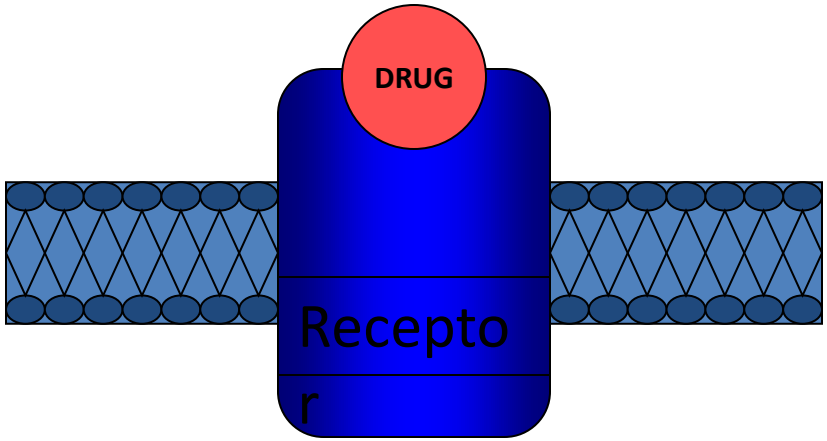
Drugs can be defined as chemical agents that uniquely interact with specific target molecules in the body, thereby producing a biological effect.

Drugs can be stimulatory or inhibitory



Drugs

- Drugs, as well as hormones, neurotransmitter, autocoids and toxins can make possible the transfer of information to cells by interaction with specific receptive molecules called "receptors".



Drugs

- Drugs interact with biological systems in ways that mimic, resemble or otherwise affect the natural chemicals of the body.

- Drugs can produce effects by virtue of their acidic or basic properties (e.g. antacids, protamine), surfactant properties (amphotericin), ability to denature proteins (astringents), osmotic properties (laxatives, diuretics), or physicochemical interactions with membrane lipids (general and local anesthetics).

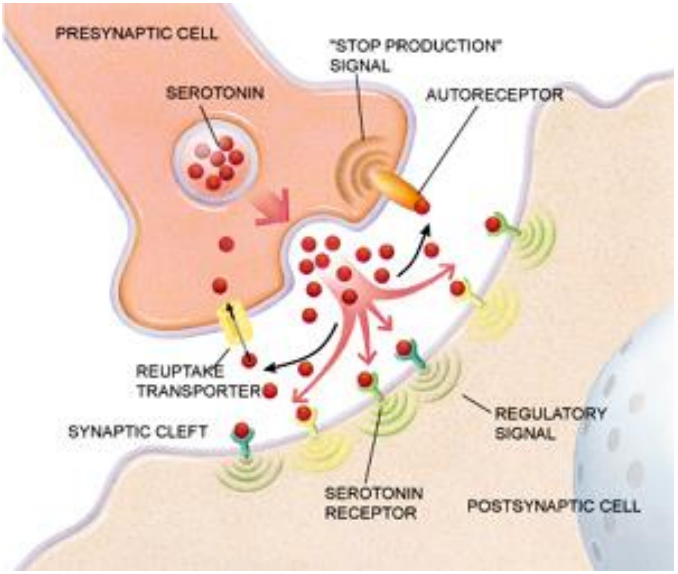
Receptors

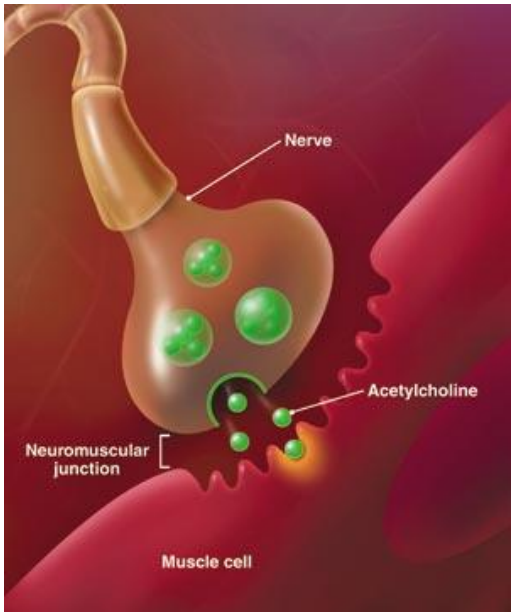
Most drugs combine (**bind**) with specific **receptors**

to produce a particular response. This association or **binding** takes place by precise physicochemical and steric interactions between specific groups of the drug and the receptor.

1. Proteins
    a. Carriers
    b. Receptors
        i. G protein-linked
        ii. Ligand gated channels
        iii. Intracellular
    c. Enzymes
2. DNA

Endogenous compounds act on their Receptors



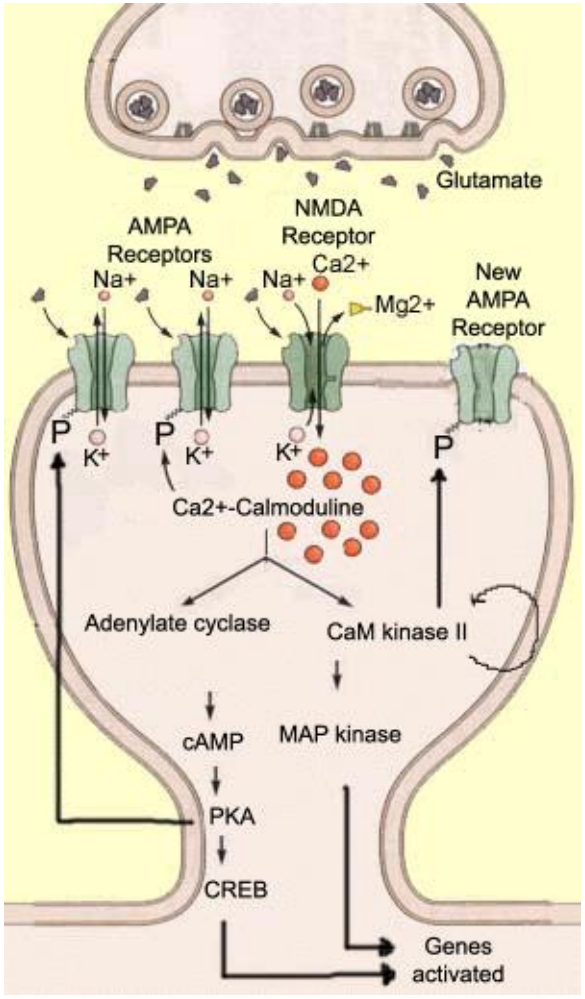


Neurotransmitter

Neuropeptides

Hormones

Ions



Receptor

Classification of Receptors

1) Pharmacological

Mediator (i.e. Insulin, Norepinephrine, estrogen)

2) Biophysical and Biochemical

Second messenger system (i,.e. cAMP, PLC, PLA)

3) Molecular or Structural

Subunit composition (i.e. 5HT1A)

4) Anatomical

Tissue (i.e muscle vsganglionicnAChRs)

Cellular (i.e. Membrane bound vs Intracellular)

Types of Receptors

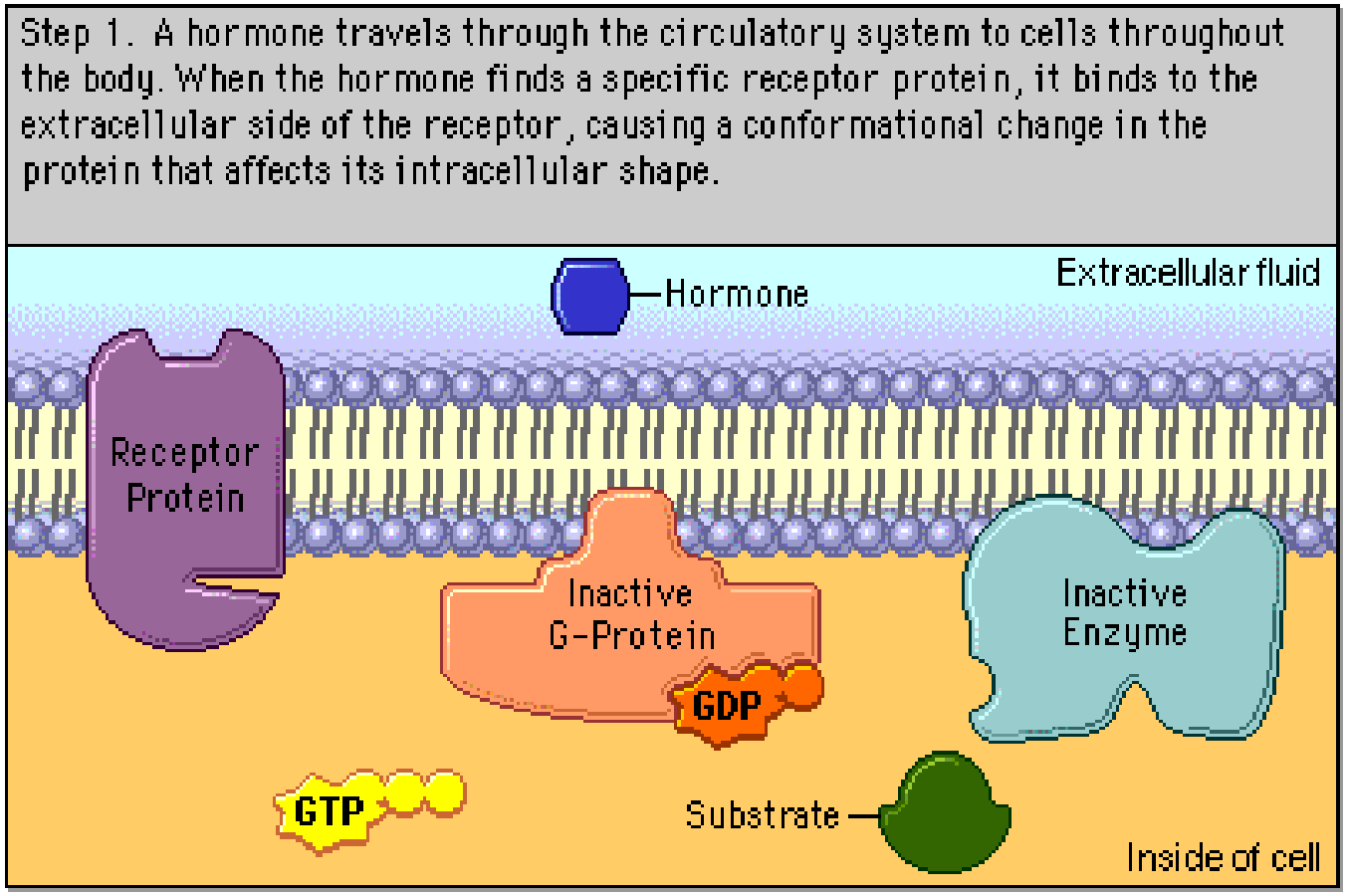
MEMBRANE BOUND RECEPTORS

- G-Protein-linked receptors
  Serotonin, Muscarinic, Dopaminergic, Noradrenergic
- Enzyme receptors
  Tyrosine kinase
- Ligand-gated ion channel receptors
  Nicotinic, GABA, glutamate

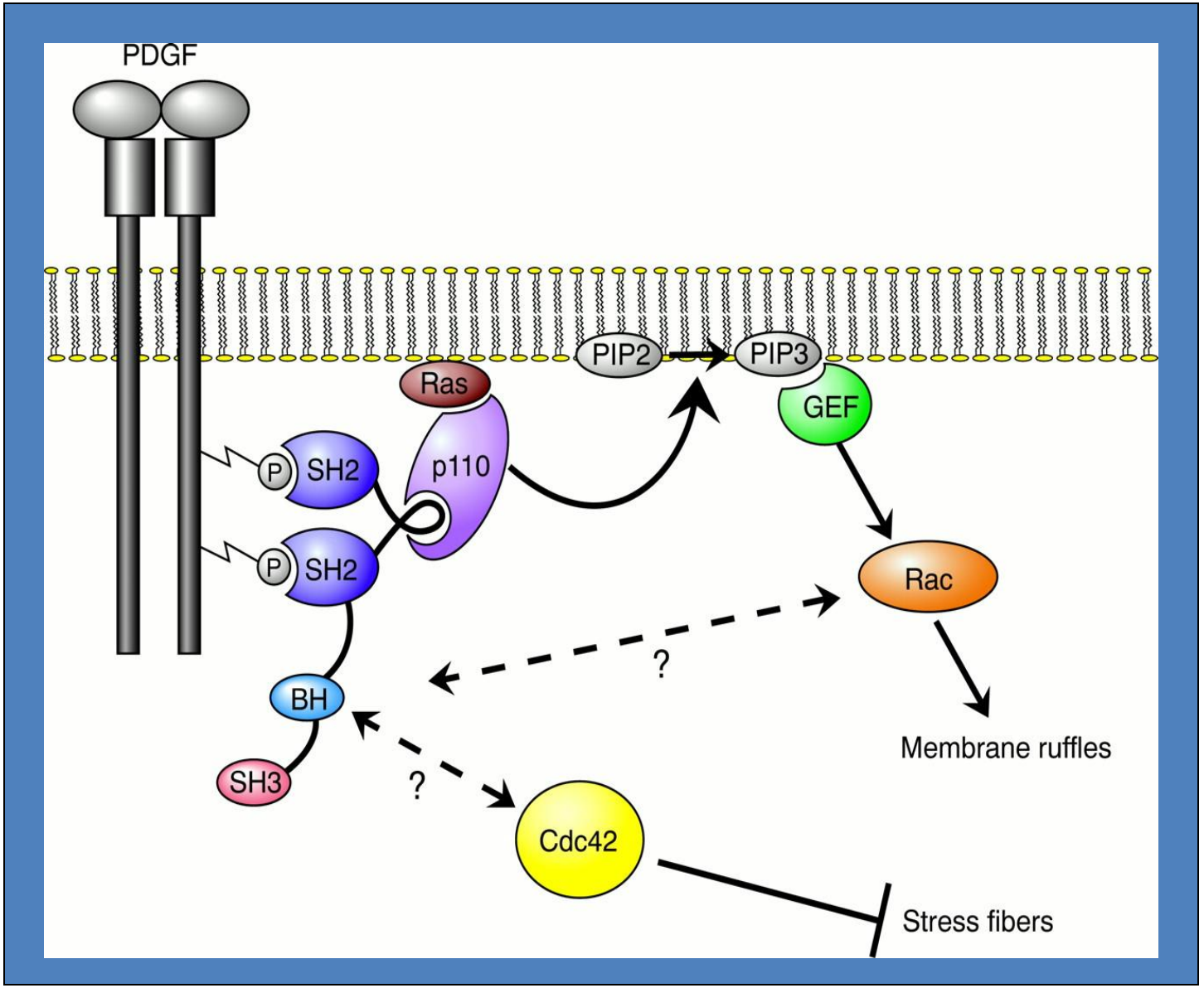
INTRACELLULAR AND NUCLEAR RECEPTORS

- Hormone receptors
- Autocoid receptors
- Growth factors receptors
- Insulin receptors

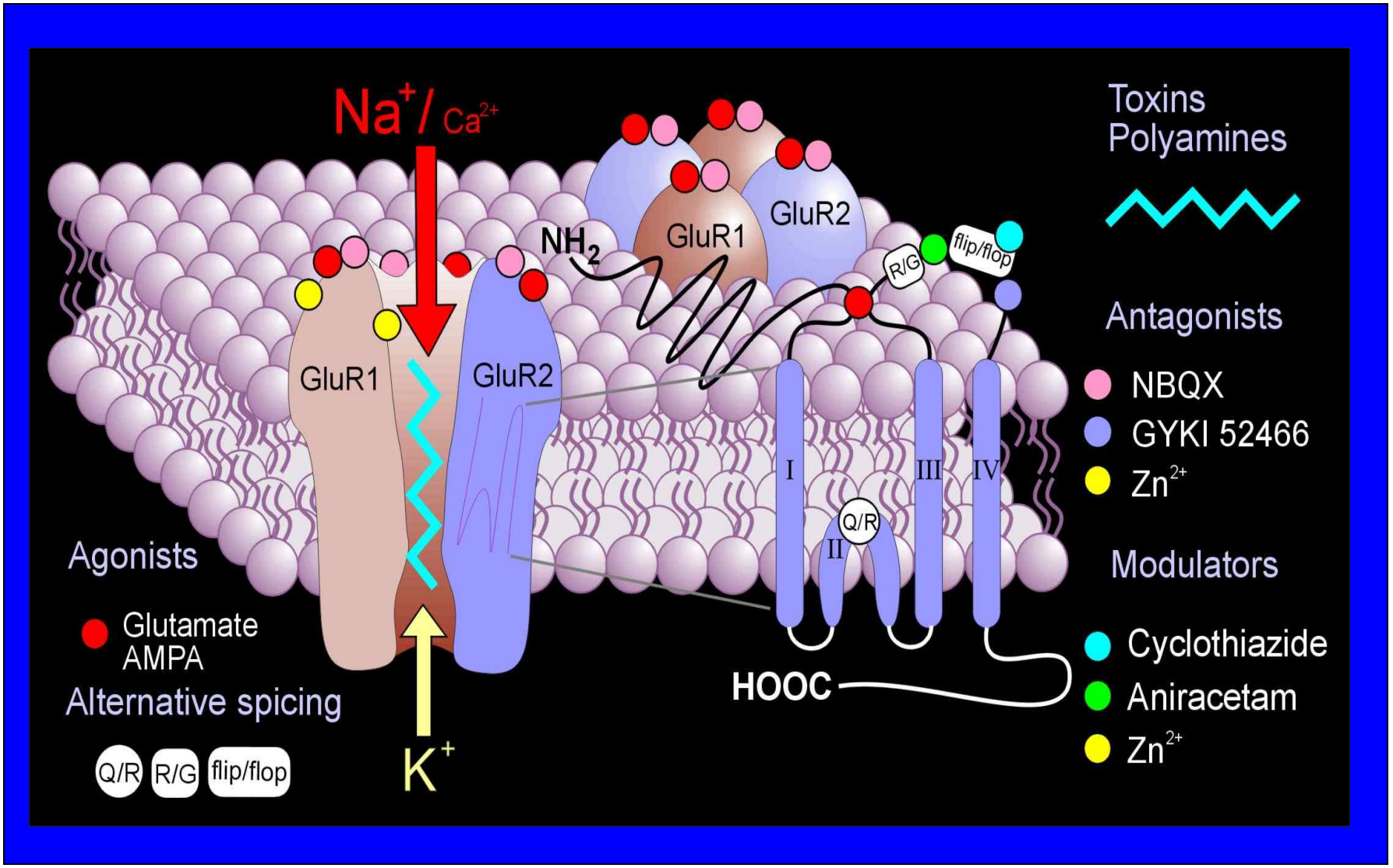
G Protein–linked Receptors



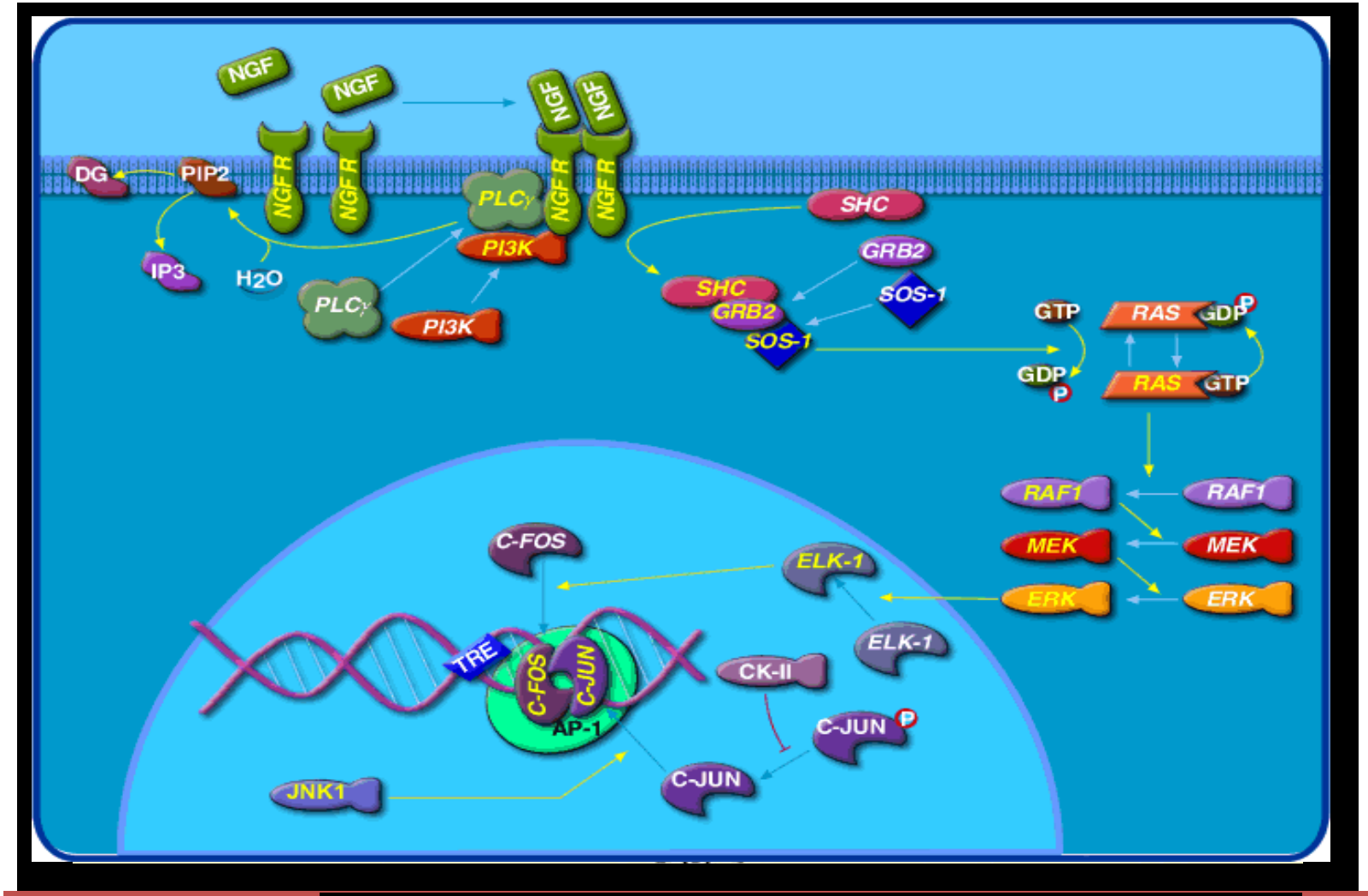
Enzyme-like Receptors



Ligand-gated Ion-Channel Receptors



Nuclear Receptors



Steroid hormones	Retinoids Thyroid hormone Vitamin D Ecdysone	NGFI-B SF-1	**HNF4**

Pharmacology Related Conferences

- 2nd International Summit on Clinical Pharmacy December 2-3, 2014 San Francisco, USA
- World Congress on Pharmacology July 20-22, 2015 Brisbane, Australia
- 4th International Conference and Exhibition on Neurology & Therapeutics July 27-29, 2015 Rome, Italy
- 4th Global Summit on Toxicology August 24-26, 2015 Philadelphia, USA
- 3rd International Conference on Clinical Pharmacy December 7-9, 2015 Atlanta, USAI
- nternational Conference and Expo on Parenterals and Injectables August 17-19, 2015 Chicago, USA
- American Veterinary Congress August 31-September 02, 2015 Florida, USA
- Asia Pacific Pharma Congress July 13-15, 2015 Beijing, China
- American Pharma Congress August 03-05, 2015 Philadelphia, USA
- Pharma Middle East November 02-04, 2015 Dubai, UAE
- Euro Veterinary Congress November 16-18, 2015 Nice, France

Approved By

Nagendra sastry Yarla. M.Sc (PhD)

E-signature:

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