

Allergy

- **Allergy** is a disorder of the immune system
- Allergic reactions occur to environmental substances known as allergens
- Also called hypersensitivity

Allergy

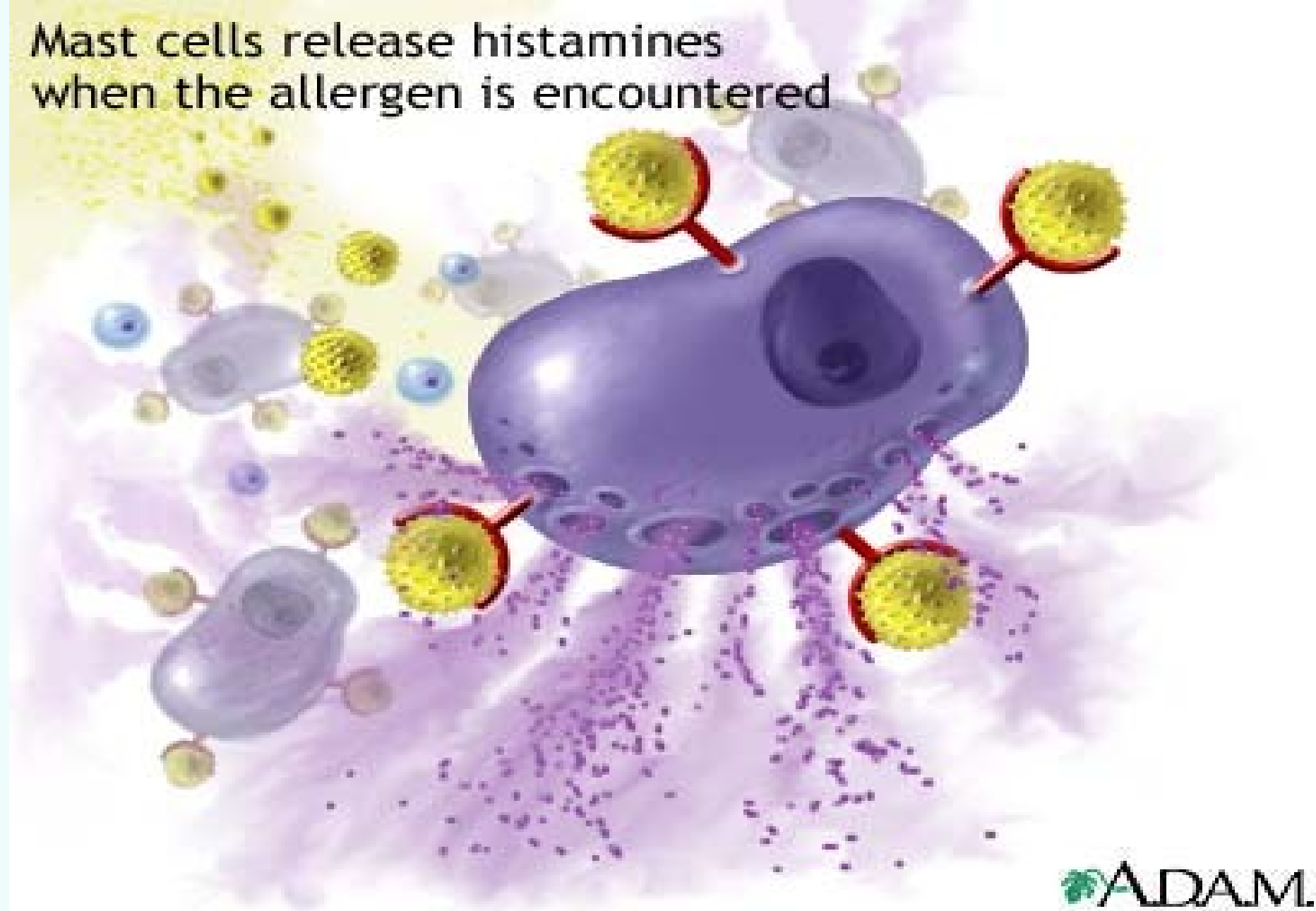
Substances that often cause reactions are:

- Pollen grains
- Dust mites
- Mold spores
- Pet dander
- Food
- Insect stings
- Medicines

Allergy

- Allergy to pollen grains
- Allergy to pollen is called hay fever.
- Pollens that cause allergies are those of anemophilous plants
- It can be treated by vaccination

Mast cells release histamines
when the allergen is encountered



Allergy due to Histamine release



- Histamine is released on subsequent contact with an allergen

Autocoids: It derives from the word Auto means self Akas means remedy

- The term means remedy/healing substance
- Biologically active substances
- They act locally
- Also called local hormones
- Has role in number of physiological and pathological process
- Plays important role in allergic reactions

Classification of autocooids

Amine autocooids

- Histamine
- Serotonin

Lipid derived autocooids

- Prostaglandins
- Leukotrienes

Peptide autocoid

- Plasmakinins
- Angiotensin

Histamine

- Potent biogenic amine
- Stored in mast cells or circulating basophiles.
- Released in response to stimuli from antigen and certain drugs.
- Histamine is also present in blood most body secretions, venoms and pathological fluids
- It is a vasoactive amine
- Responsible for most of the allergic manifestations
- Stored in inactive form in mast cells of lungs and liver and circulating basophils

Histamine receptors

They are a class of G-protein coupled receptors

- They have endogenous ligand
- There are two known histamine receptors:

H1 receptors:

- present in smooth muscles

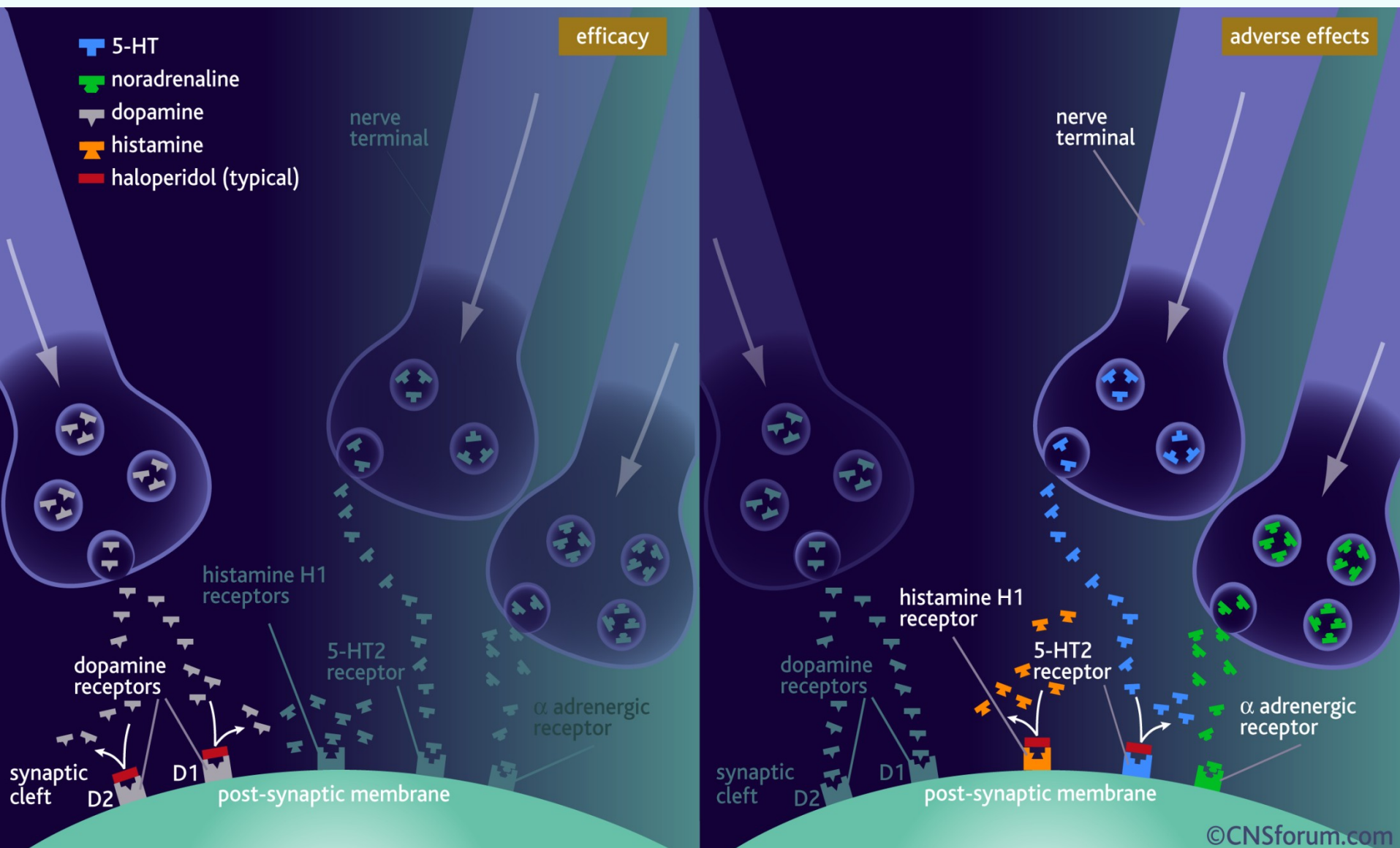
H2 receptors:

- present in gastric glands
- H1 receptor and H2 receptors can be blocked by their respective antagonists

Mechanism of action

- Histamine exerts its actions by combining with specific cellular histamine receptors
- Viz :
 - H_1 - receptors
 - H_2 - receptors

H1 Receptors



- **H2 receptors**

- Are found mainly in the parietal cells of the gastric mucosa.
- Heart muscle to small extent

Histamine releasers

- A variety of stimuli are capable of releasing histamine from mast cells

Tissue damage

- Trauma
- Stings and venom
- Proteolytic enzymes

Antigen: antibody reactions involving IgE
antibodies

Mast cells

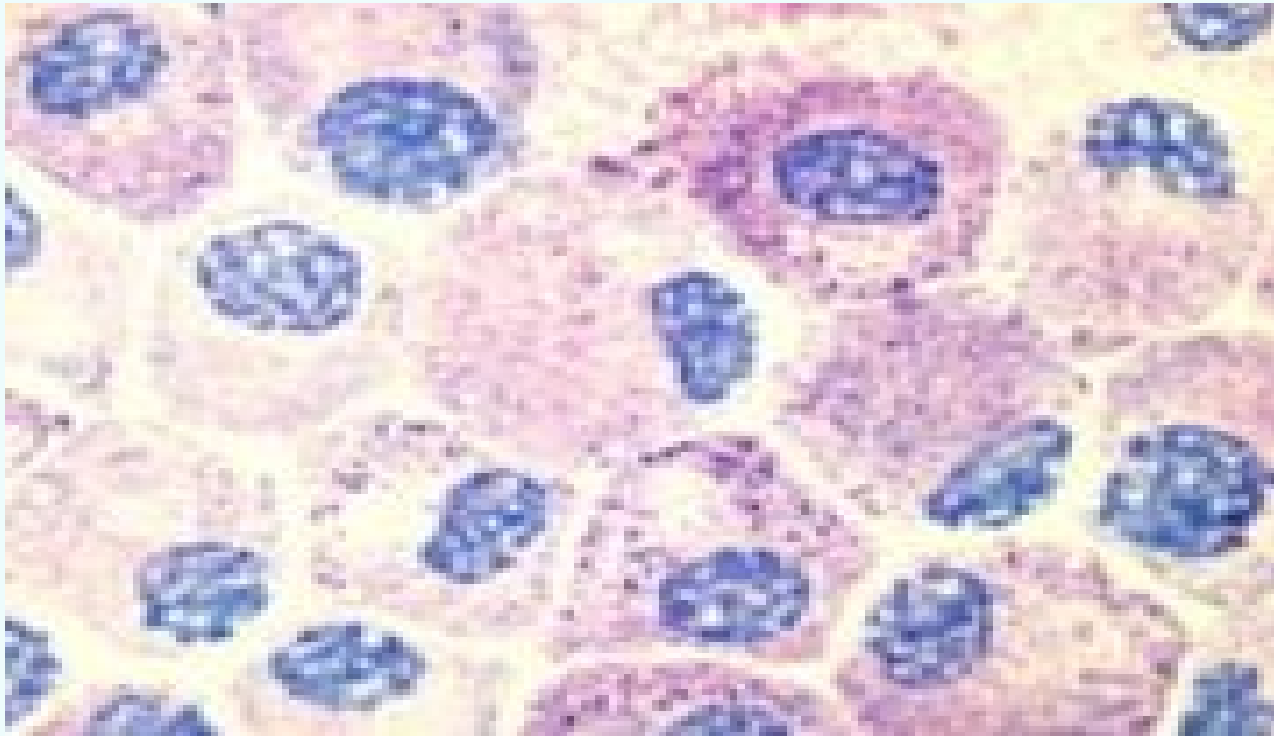
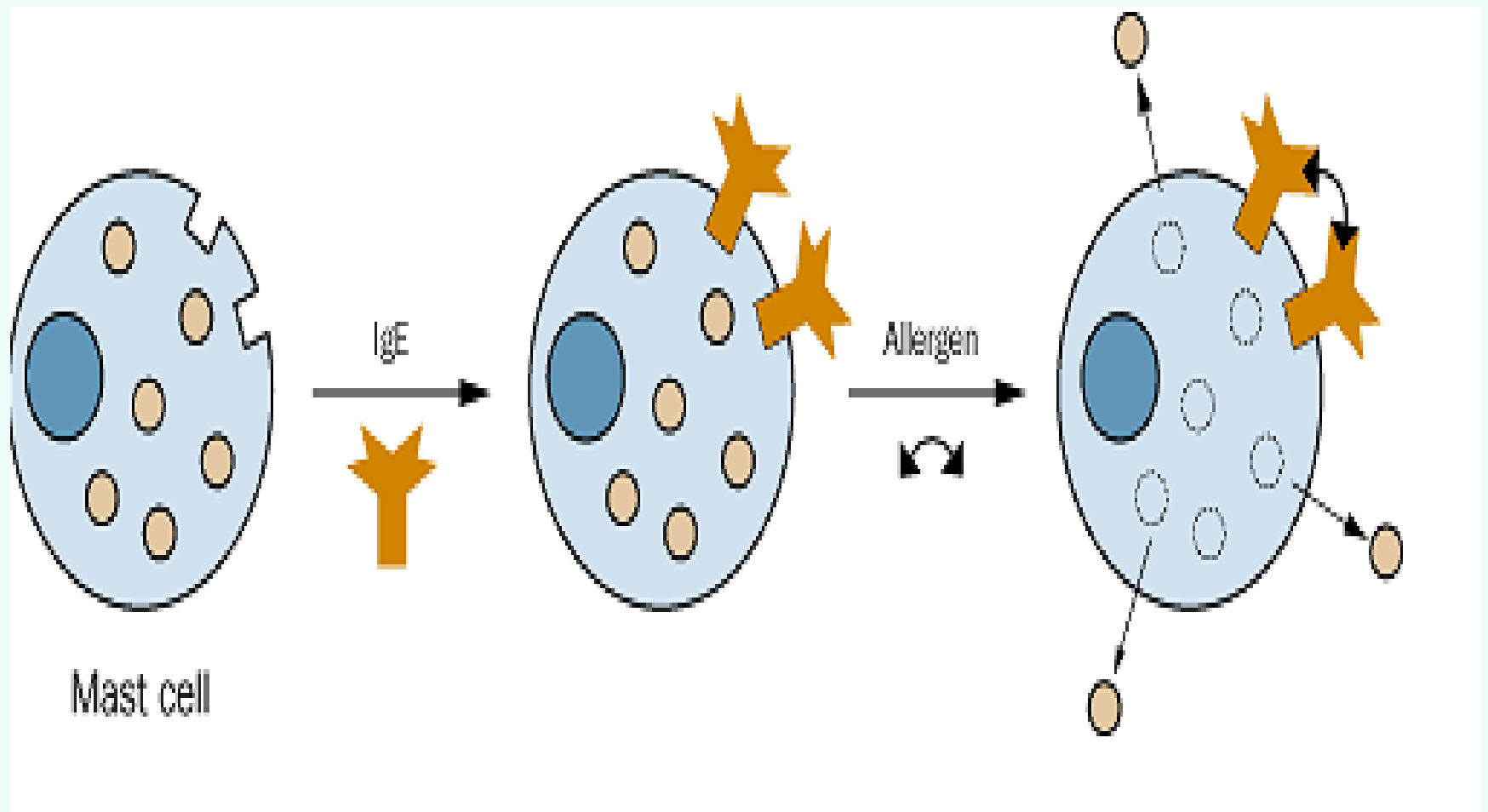


Fig:1



Some basic drugs:

- Morphine
- Atropine
- Vancomycin etc

Polymers

- Dextran
- PVP