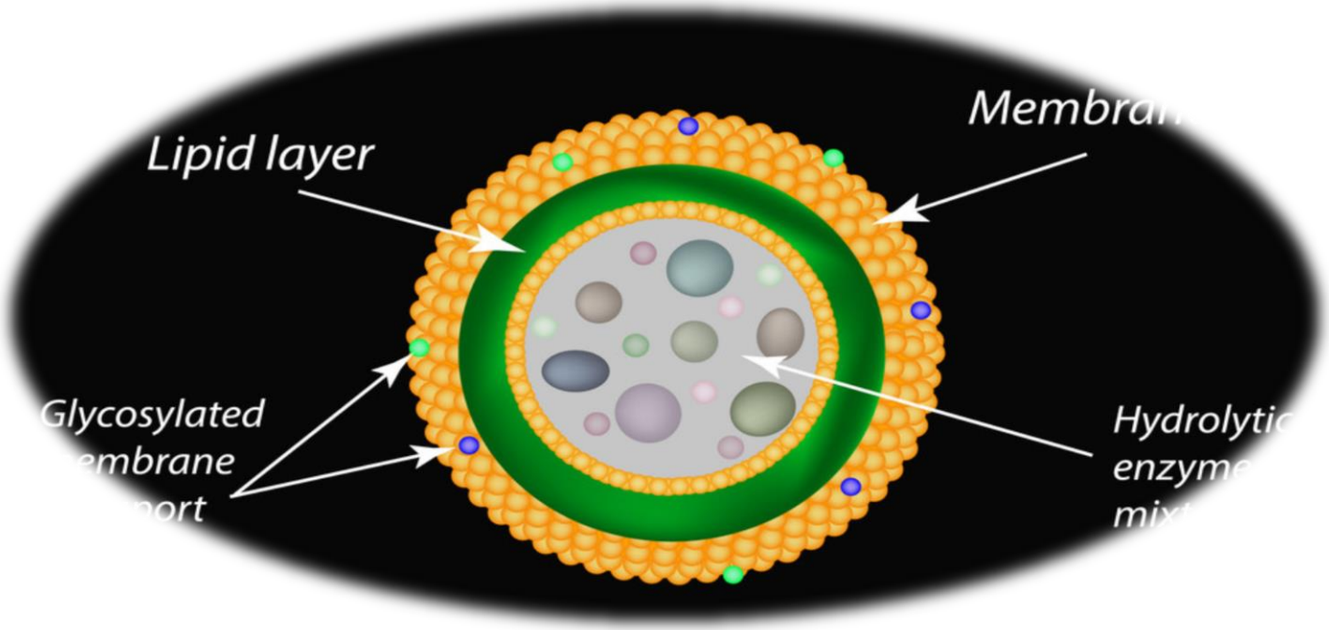
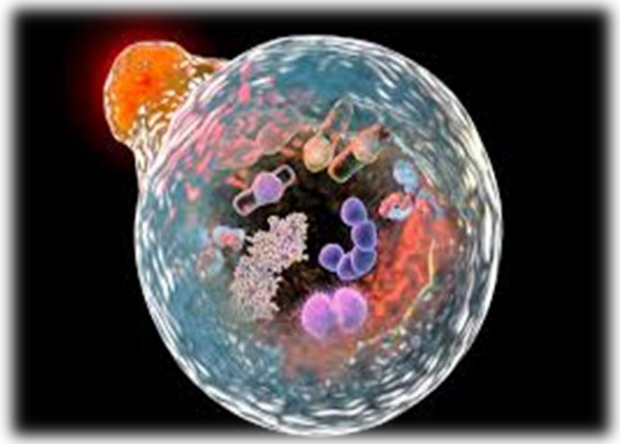
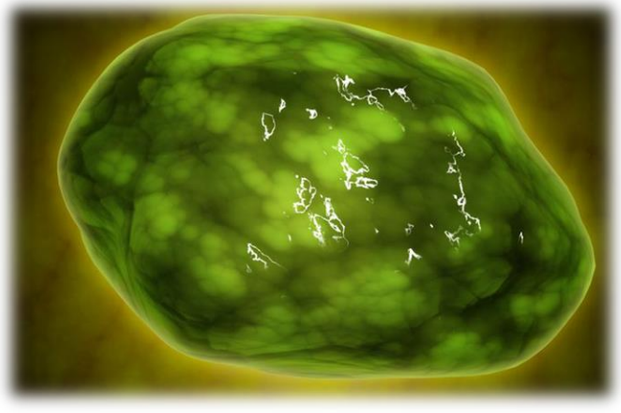






LYSOSOMES

DR ZAID O IBRAHEEM, BAGHDAD, IRAQ

LYSOSOME

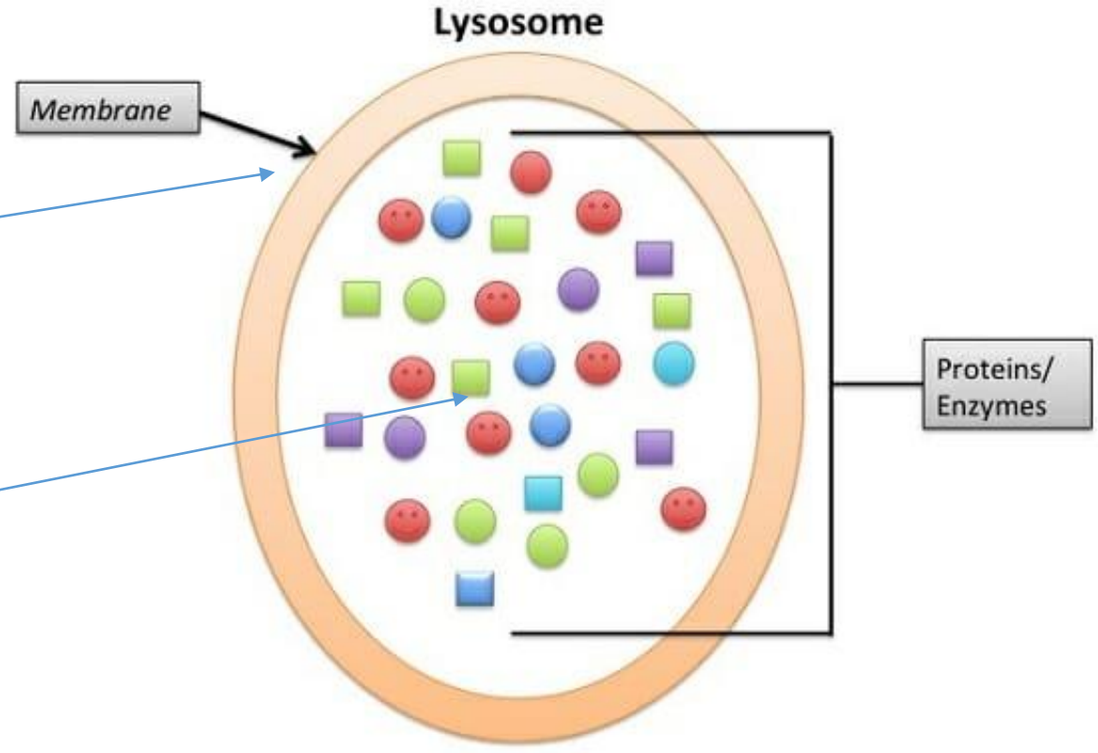
Lysosome content

Lysosomal membrane

A single unit membrane that surrounds the lysosomes.

- Digestive enzymes

Lysosomes contains about 5-60 types of hydrolytic enzymes which breakdown digfferent macromolecules into their elementary units .

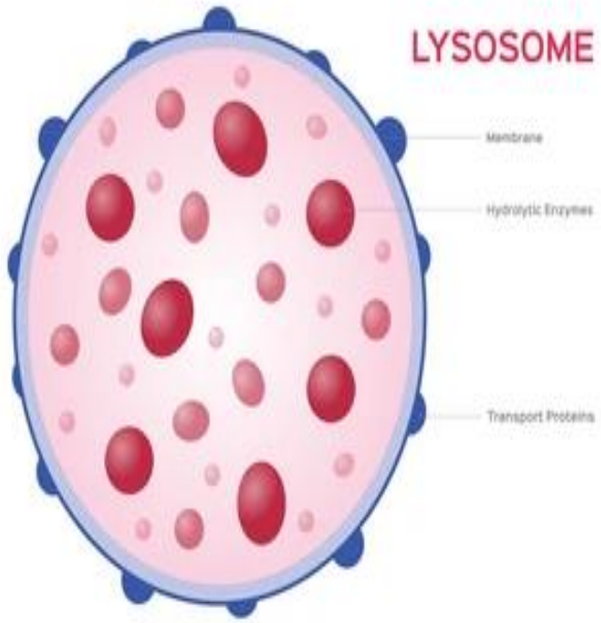


LYSOSOMES FUNCTION

AUTOPHAGY

Breakdown of the own biomolecules during apoptosis

BREAK DOWN OF PHAGOCYTIZED MATERIALS



IN METAMORPHOSIS

Process of cellular change and development
It involves breakdown of some proteins and synthesis of other

IN FERTILIZATION

(breakdown of ovum surface)

REMOVAL OF DEAD CELLS

PHYSIOLOGICAL FUNCTIONS OF LYSOSOMES

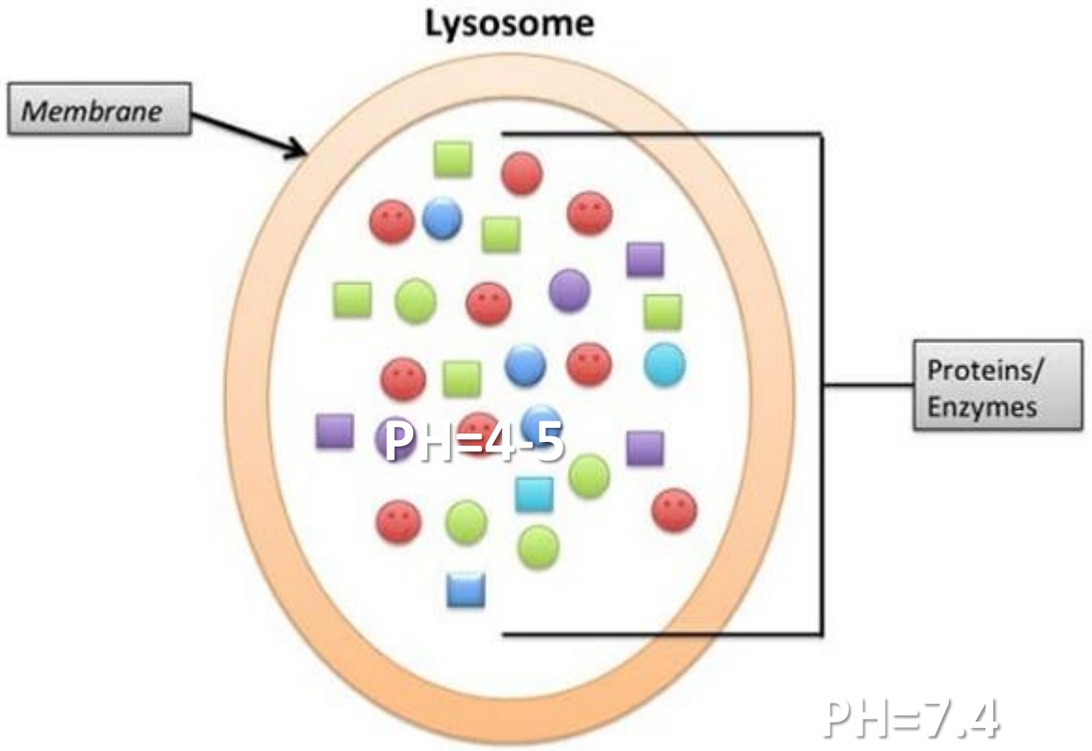
Lysosomal membrane produce complete isolation of the lysosomal content preventing their degradative effect against the cell components

A group of hydrolytic enzymes exist inside the lysosomes.

They are named by adding a suffix –ase to the name of the broken substrate like protease, lipase, glucosidase and so on

pH inside the lysosome is acidic (4-5) which is less than that of the cytoplasm (7.4).

This acidic pH is optimal for the lysosomal enzymes function .



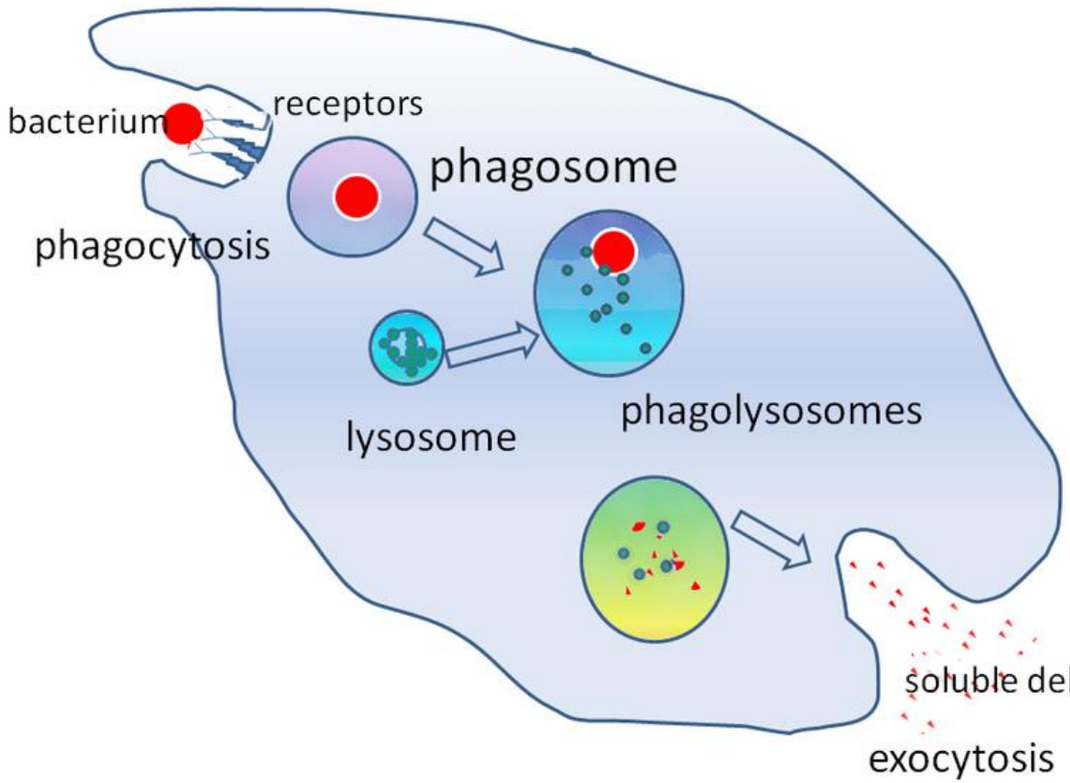
This arrangement prevents the injurious effect of the enzymes if they leak outside the lysosomes as the cytosolic pH is not appropriate for their action.

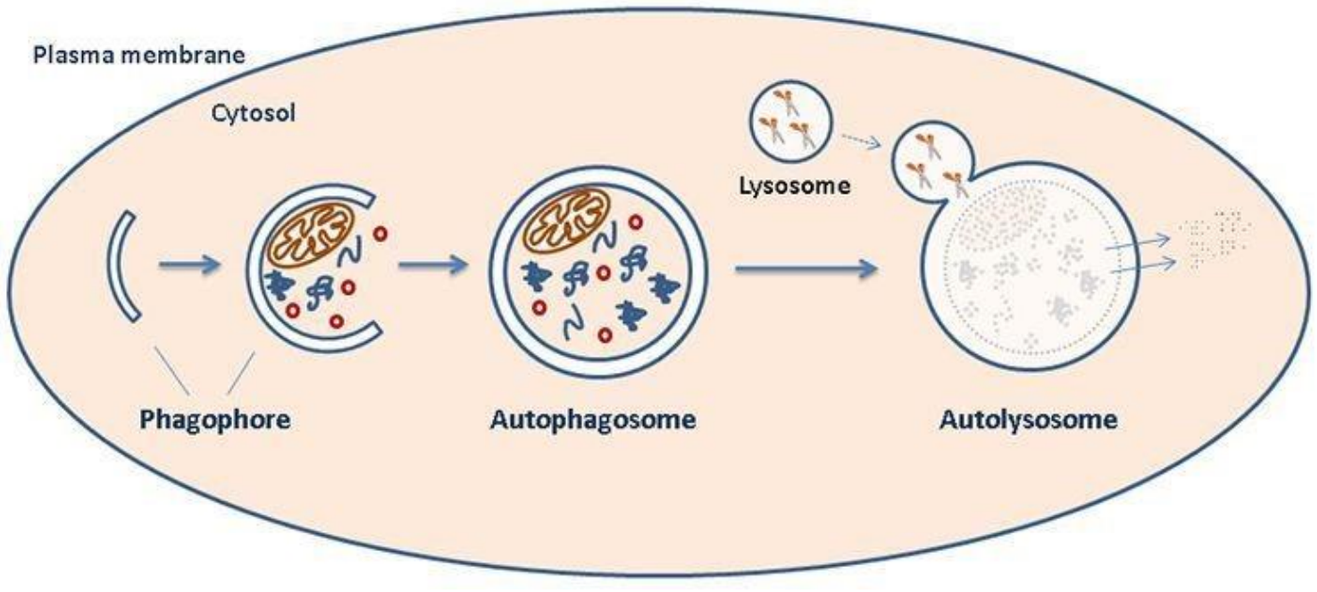
PHYSIOLOGICAL FUNCTIONS OF LYSOSOMES

Lysosomes breakdown endogenous or exogenous biomolecules.

The exogenous biomolecules are trafficked through endocytosis to form a phagosomes.

The phagosome fuse with the lysosome to form a phago-lysome wherein the foreign particles are broken down.





The endogenous molecules involve those that the cell need to dispose such as the misfolded proteins or during autophagy.


THANK
YOU