



GOLGI BODY
EUKARYOTE
PACKAGING
CENTER
CELL EXIT



GOLGI BODY ULTRASTRUCTURE

ER

GOLGI ULTRASTRUCTURE

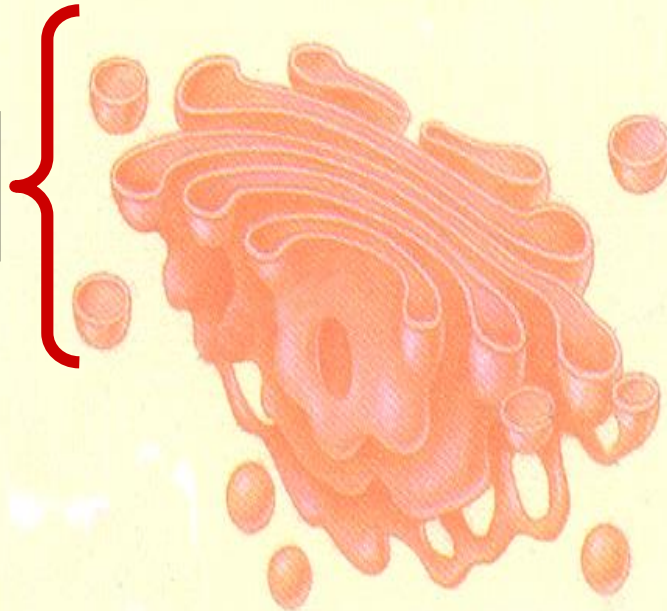


GOLGI BODY

GOLGI BODY



**GOLGI
BODY**



1 μ m

CM

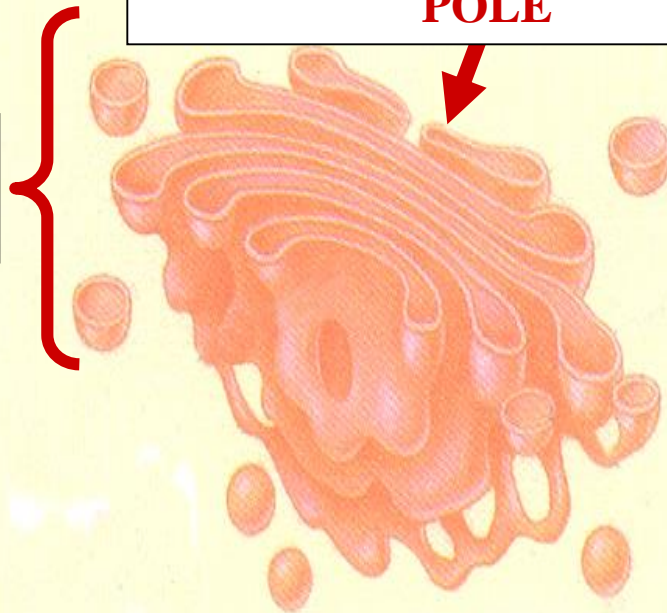
GOLGI ULTRASTRUCTURE



GOLGI BODY

**GOLGI BODY
ENDOPLASMIC RETICULUM
POLE**

**GOLGI
BODY**



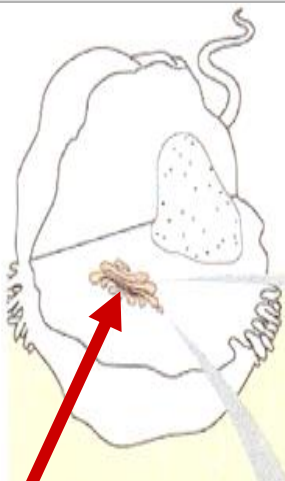
GOLGI BODY



1 μm

EG

GOLGI ULTRASTRUCTURE

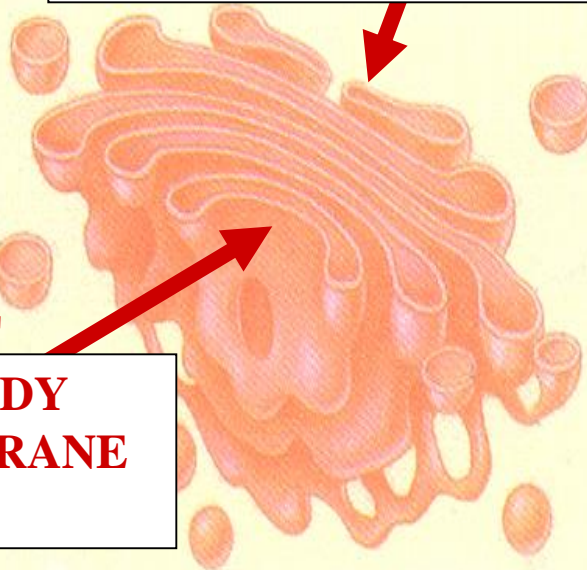


GOLGI BODY

**GOLGI BODY
ENDOPLASMIC RETICULUM
POLE**

**GOLGI
BODY**

**GOLGI BODY
CELL MEMBRANE
POLE**



GOLGI BODY



1 μ m

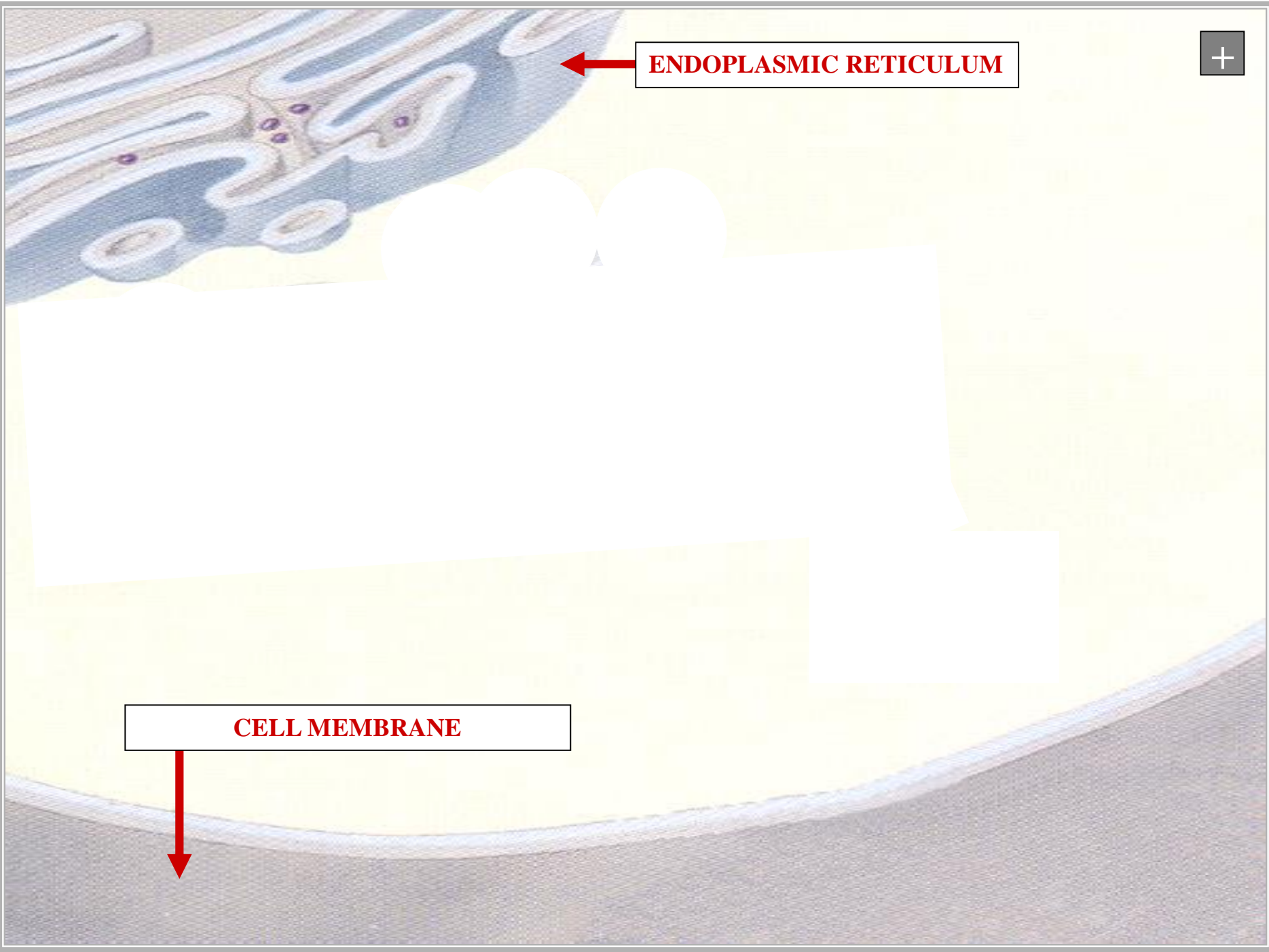


**GOLGI BODY
PACKAGING CENTER
CELL EXIT
EXAMPLE**



ENDOPLASMIC RETICULUM

CELL MEMBRANE





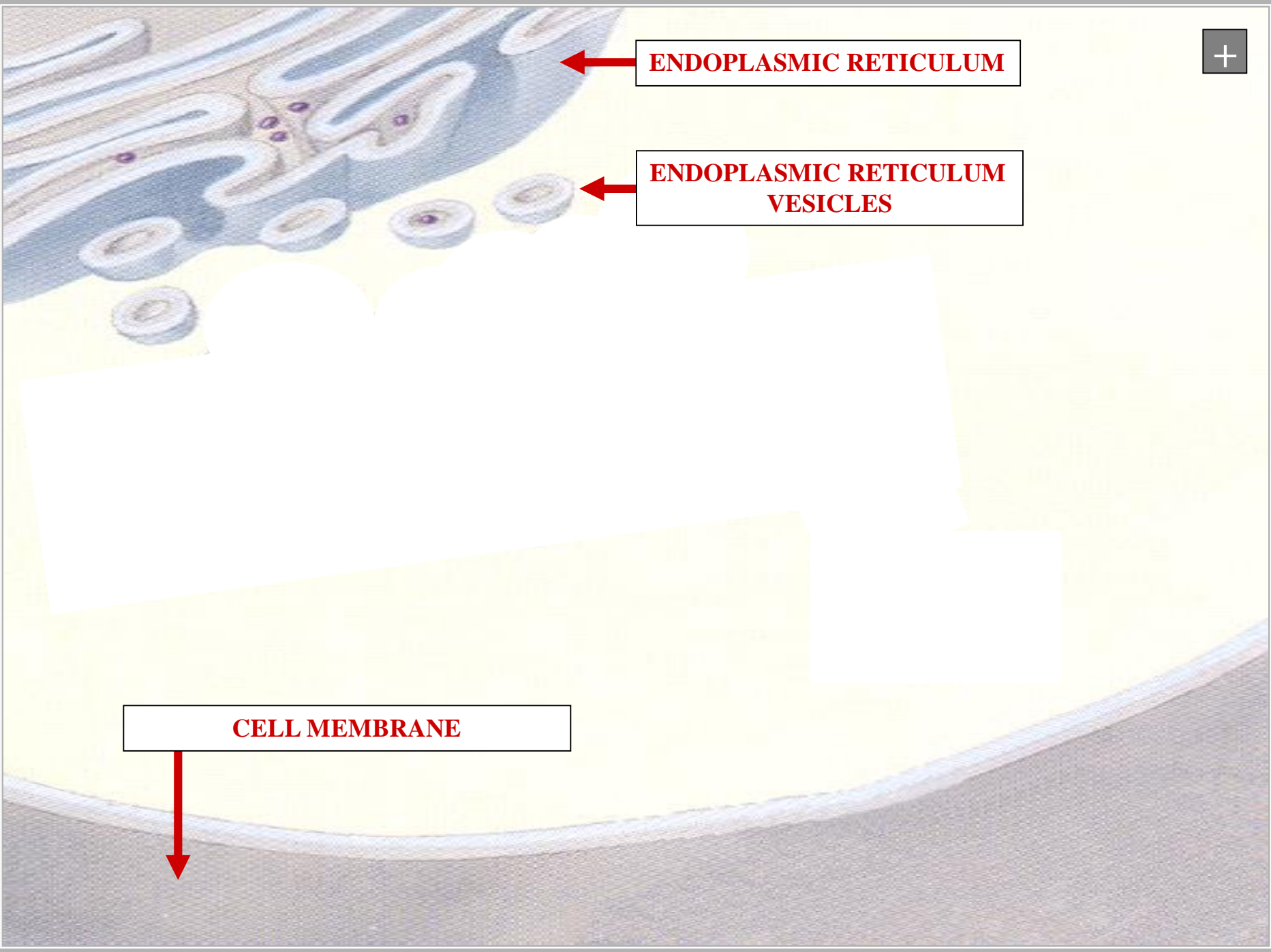
ENDOPLASMIC RETICULUM



**ENDOPLASMIC RETICULUM
VESICLES**



CELL MEMBRANE





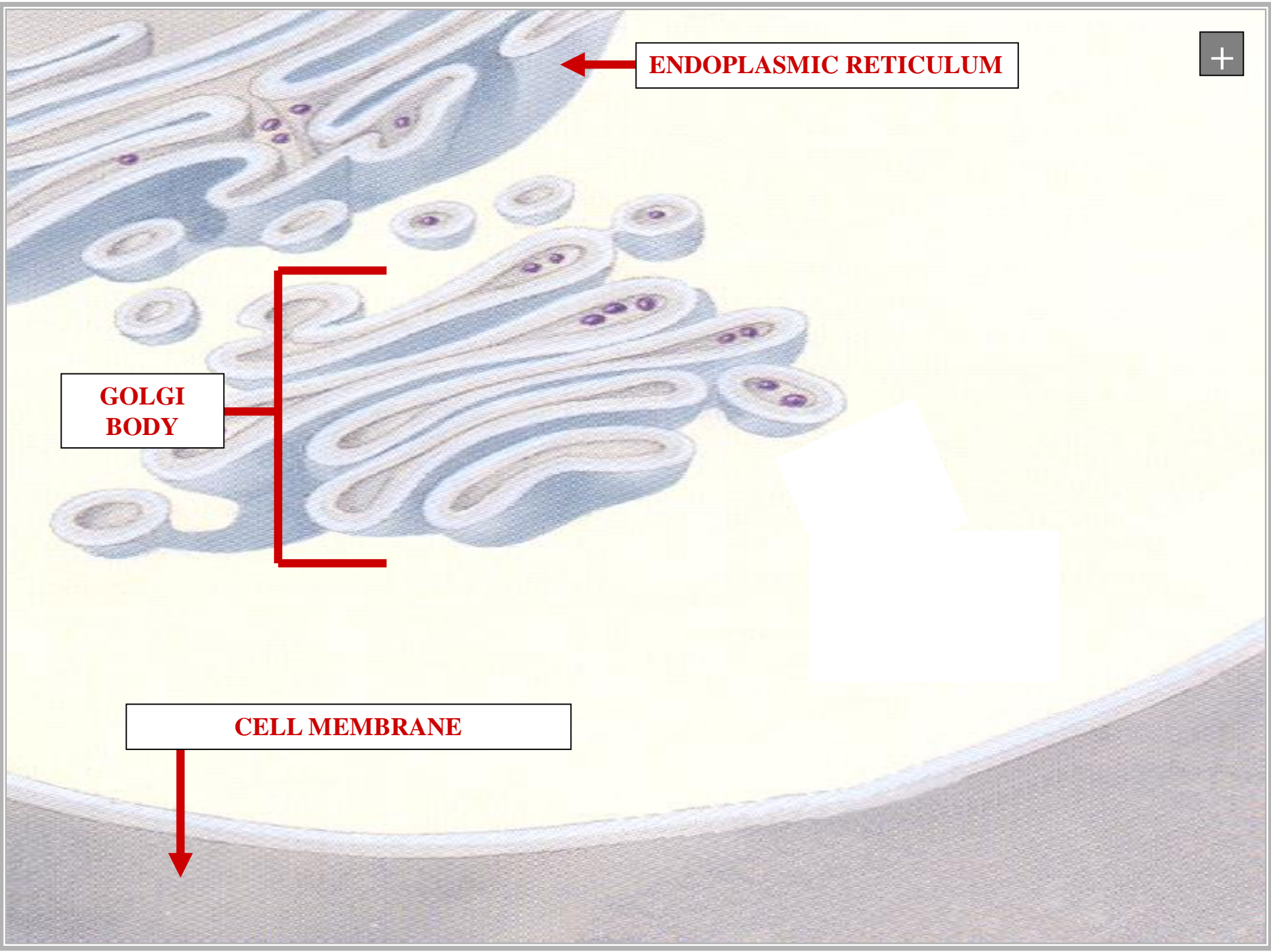
ENDOPLASMIC RETICULUM



**GOLGI
BODY**



CELL MEMBRANE



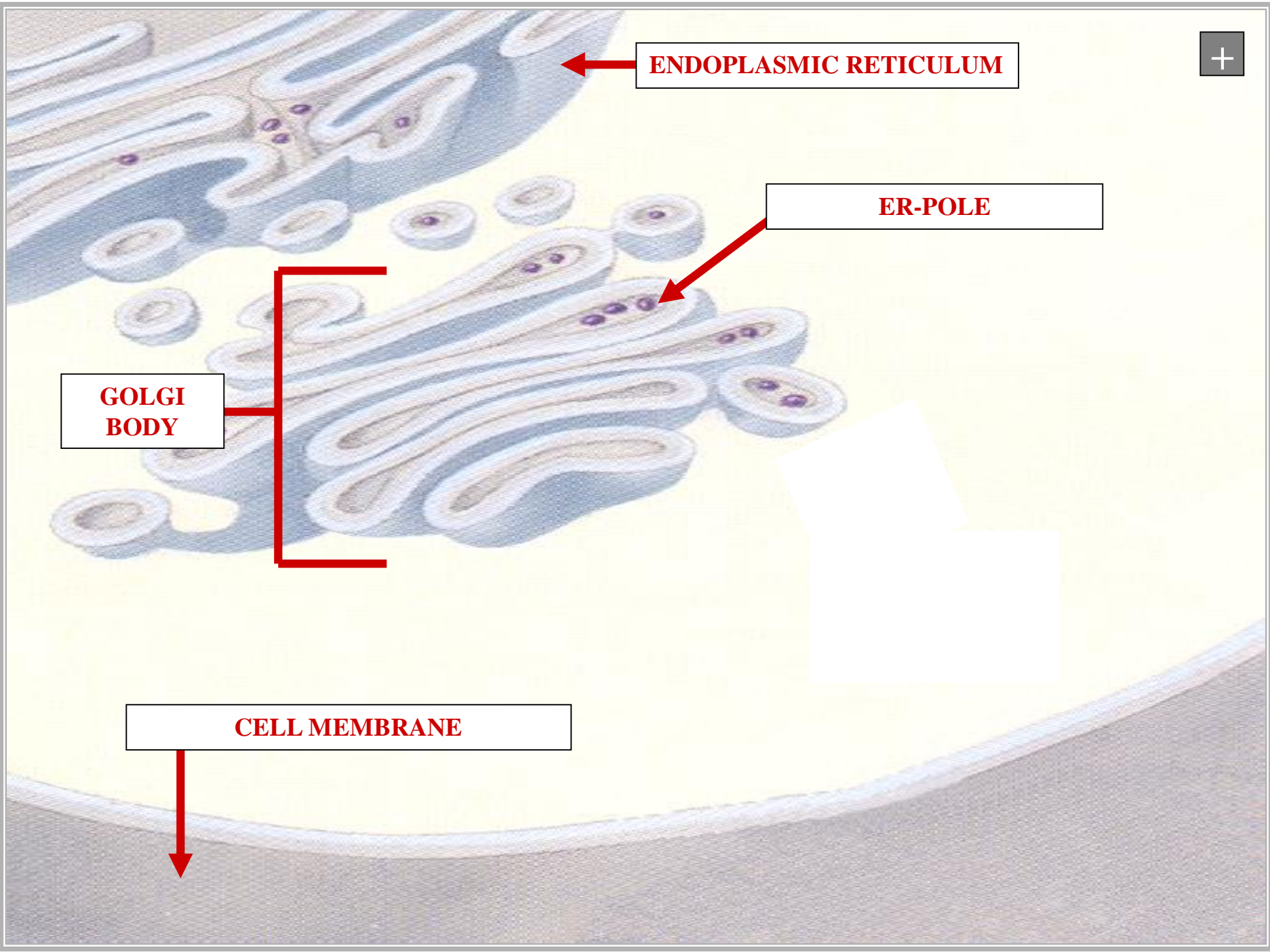


ENDOPLASMIC RETICULUM

ER-POLE

**GOLGI
BODY**

CELL MEMBRANE





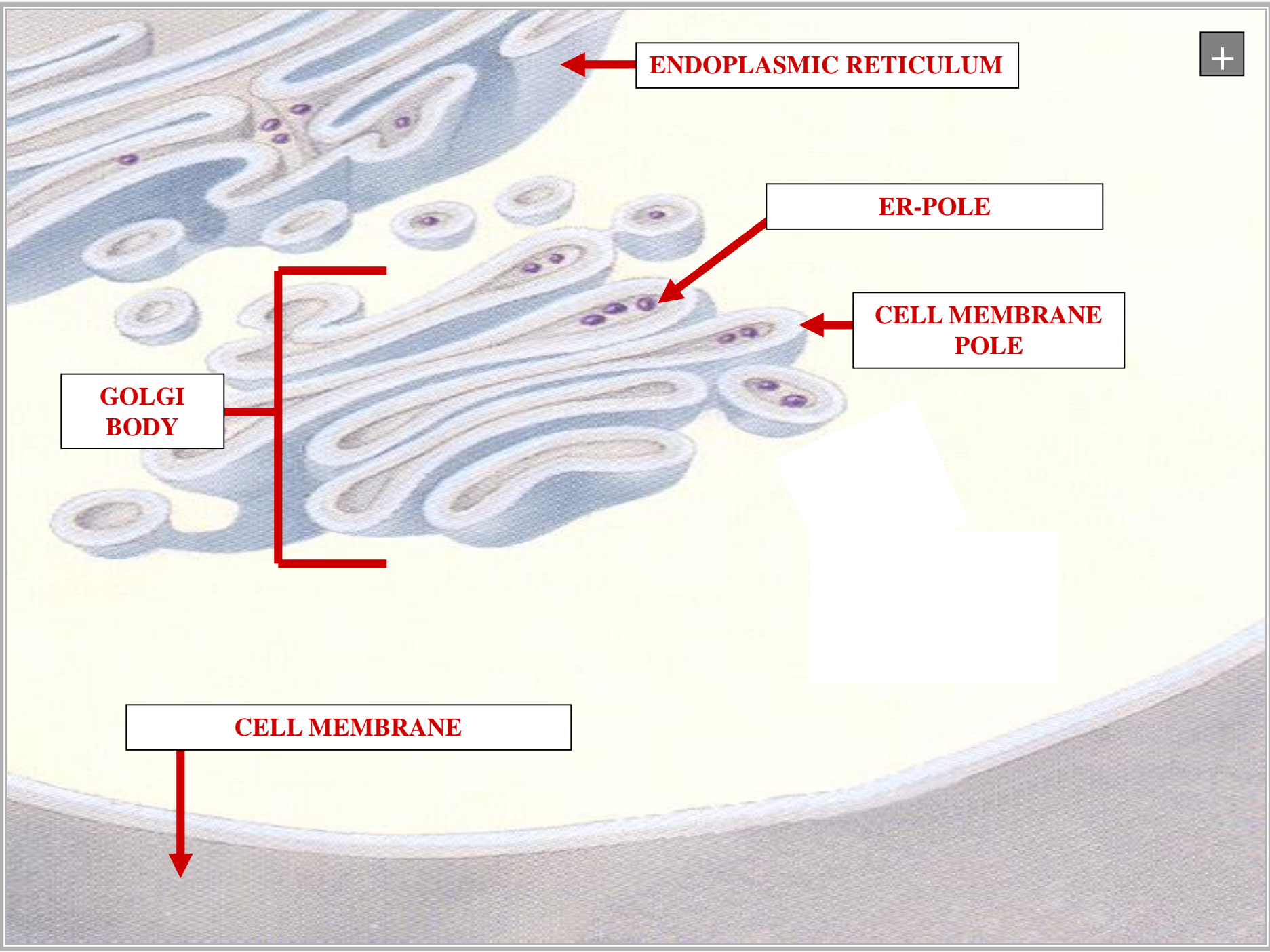
ENDOPLASMIC RETICULUM

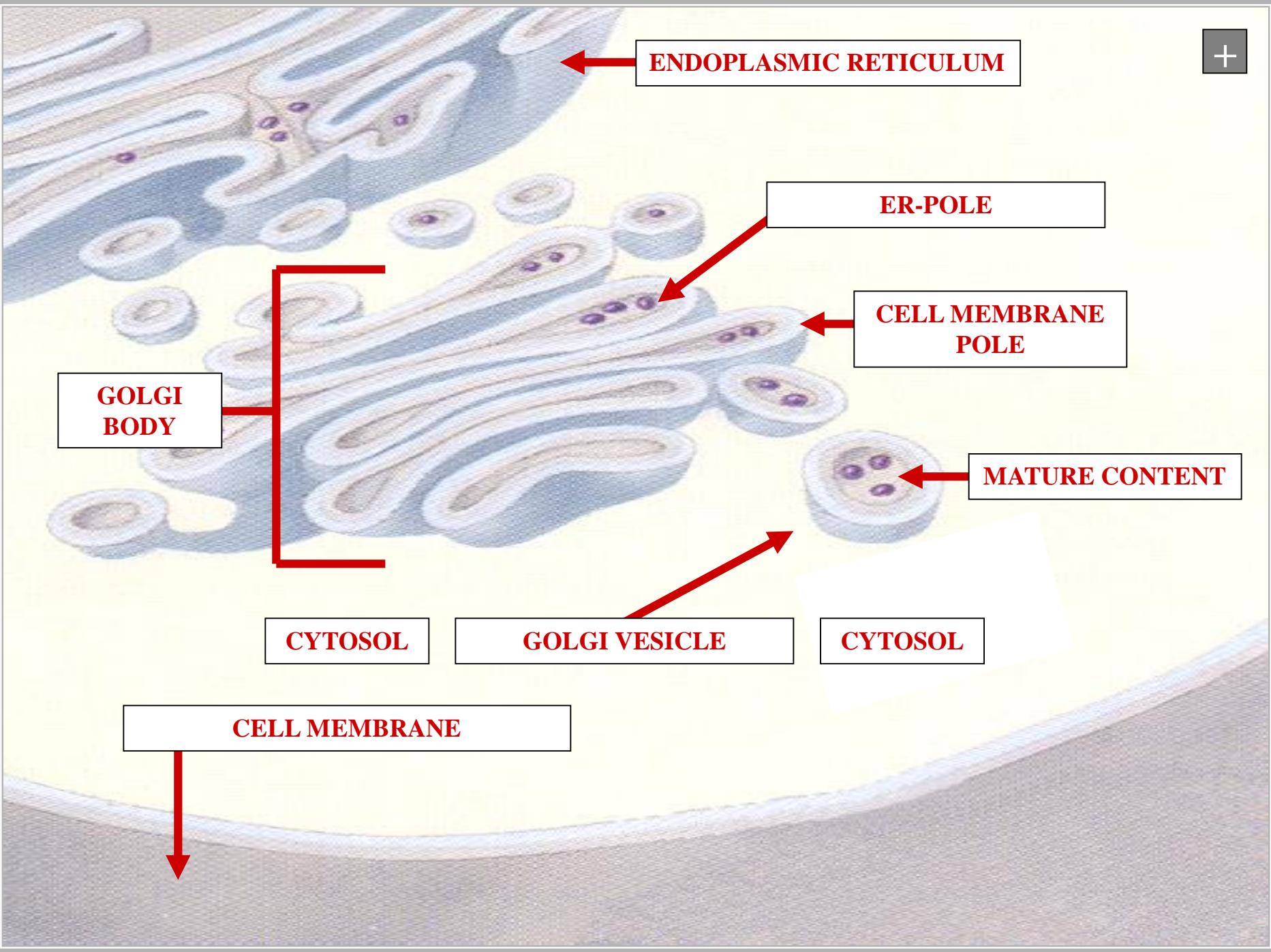
ER-POLE

**CELL MEMBRANE
POLE**

**GOLGI
BODY**

CELL MEMBRANE





ENDOPLASMIC RETICULUM

ER-POLE

**CELL MEMBRANE
POLE**

**GOLGI
BODY**

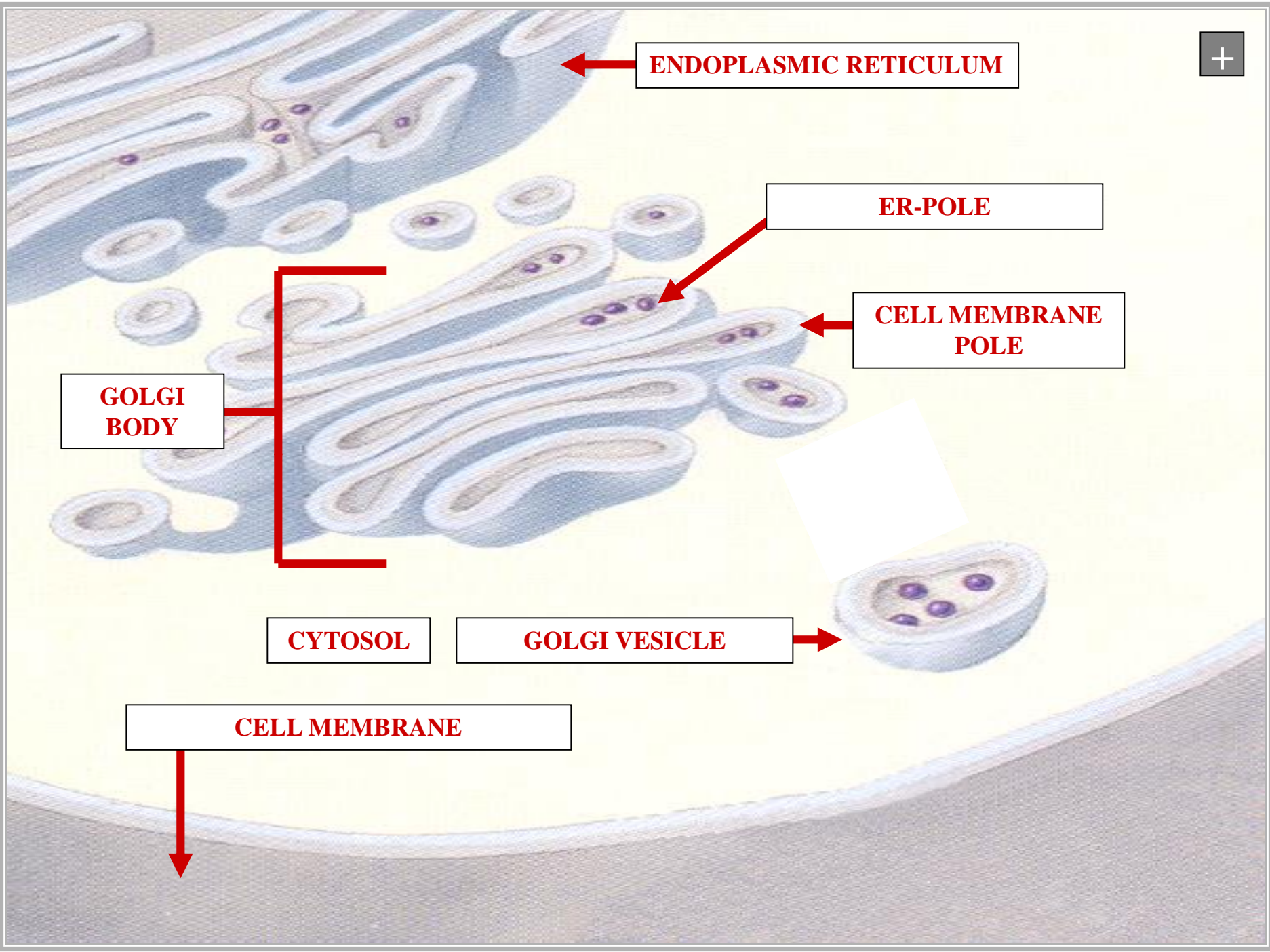
MATURE CONTENT

CYTOSOL

GOLGI VESICLE

CYTOSOL

CELL MEMBRANE



ENDOPLASMIC RETICULUM

ER-POLE

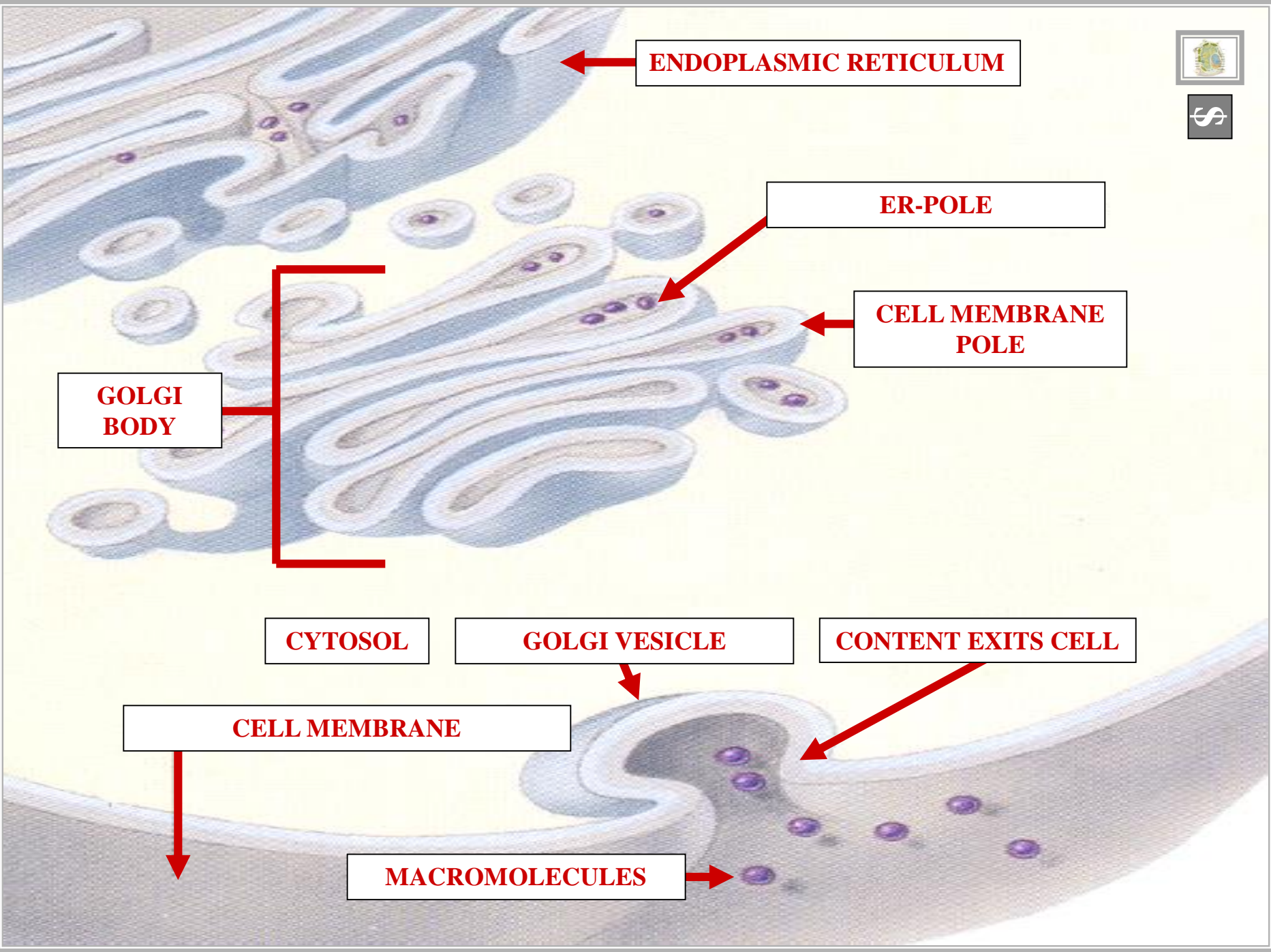
**CELL MEMBRANE
POLE**

**GOLGI
BODY**

CYTOSOL

GOLGI VESICLE

CELL MEMBRANE



ENDOPLASMIC RETICULUM

ER-POLE

**CELL MEMBRANE
POLE**

**GOLGI
BODY**

CYTOSOL

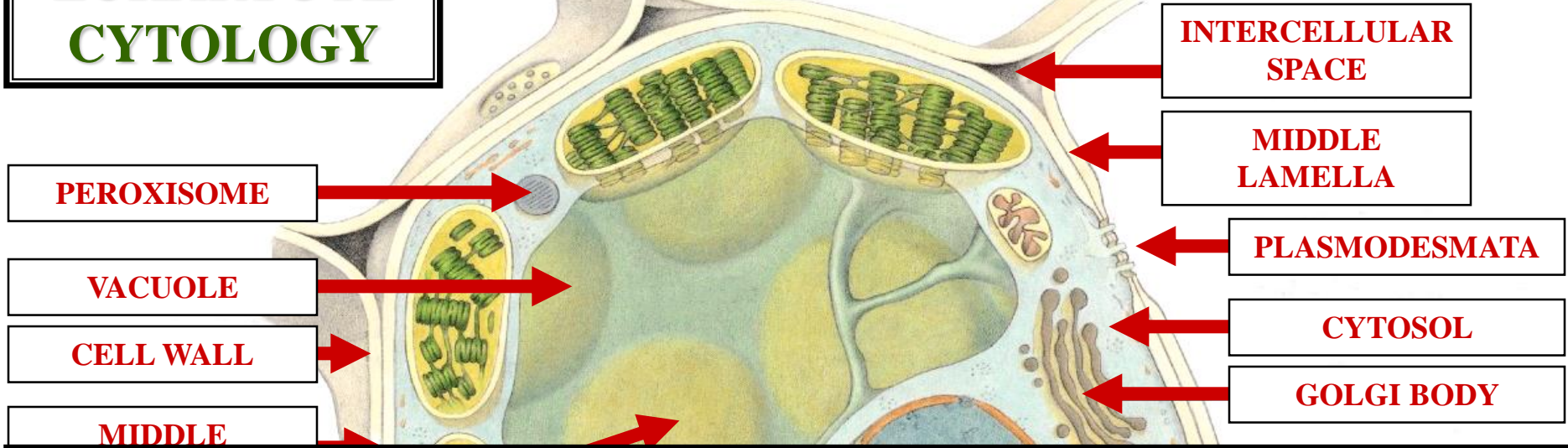
GOLGI VESICLE

CONTENT EXITS CELL

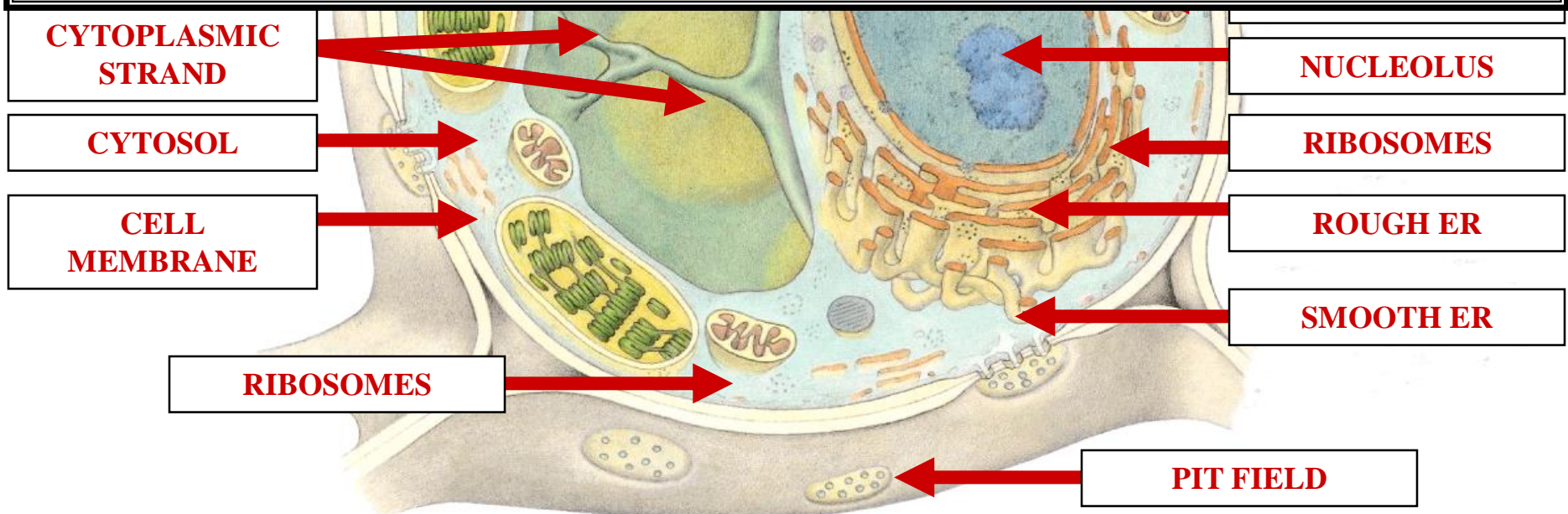
CELL MEMBRANE

MACROMOLECULES

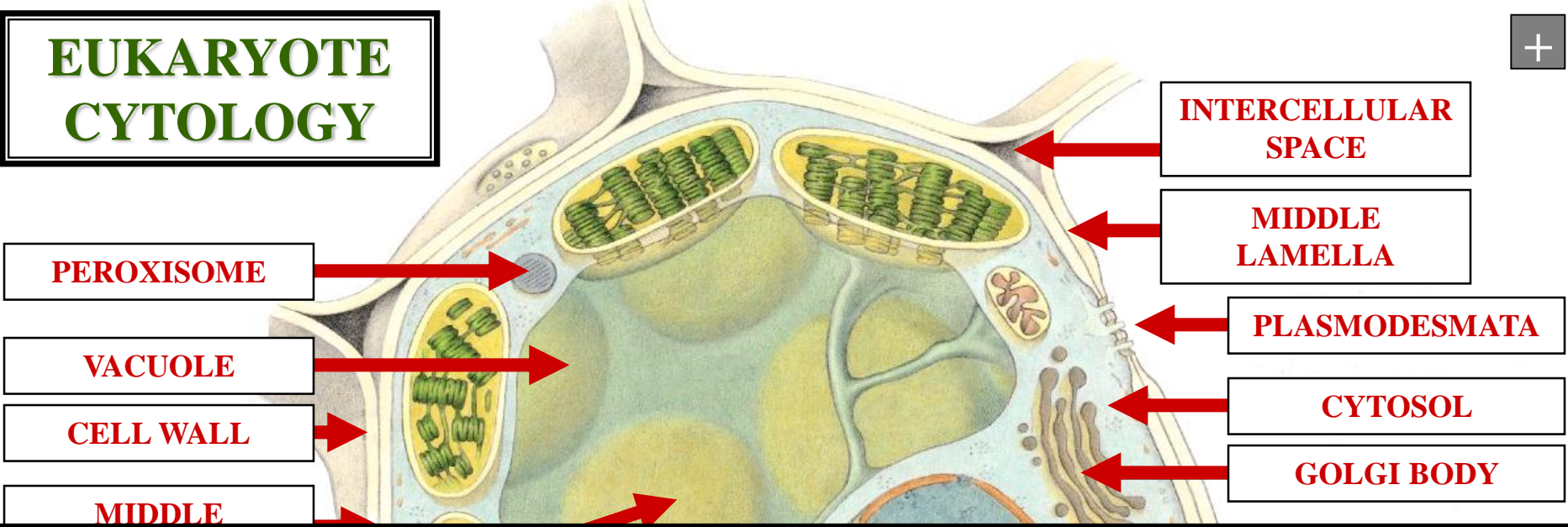
EUKARYOTE CYTOLOGY



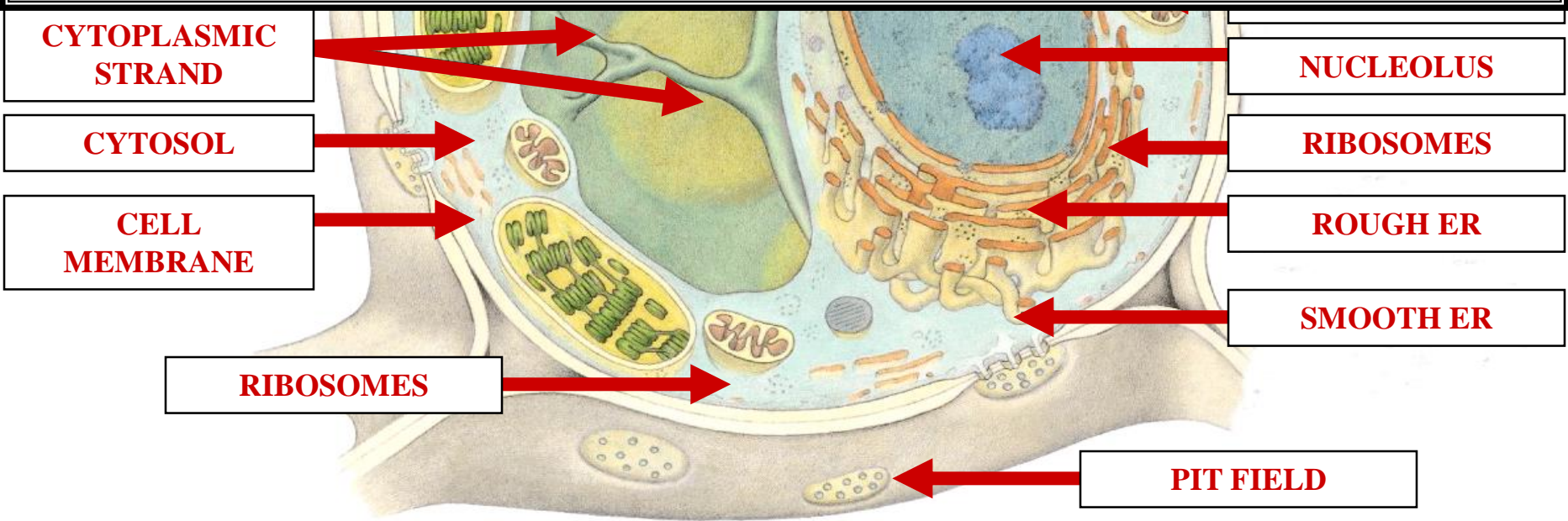
SUMMARY



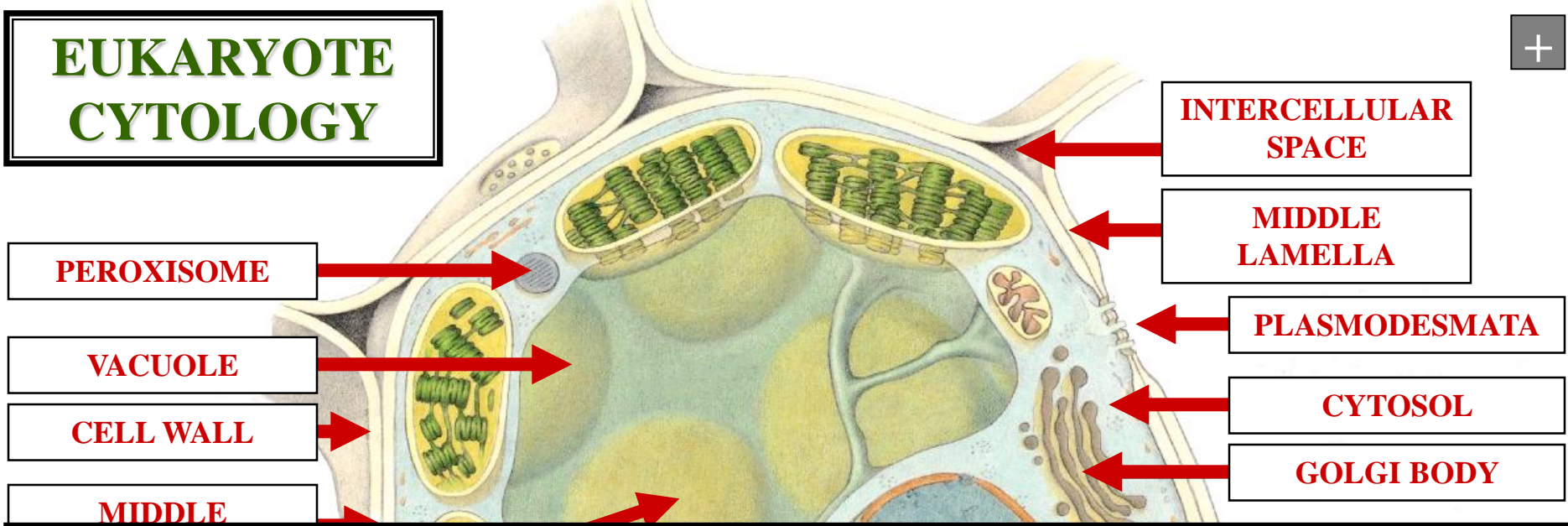
EUKARYOTE CYTOLOGY



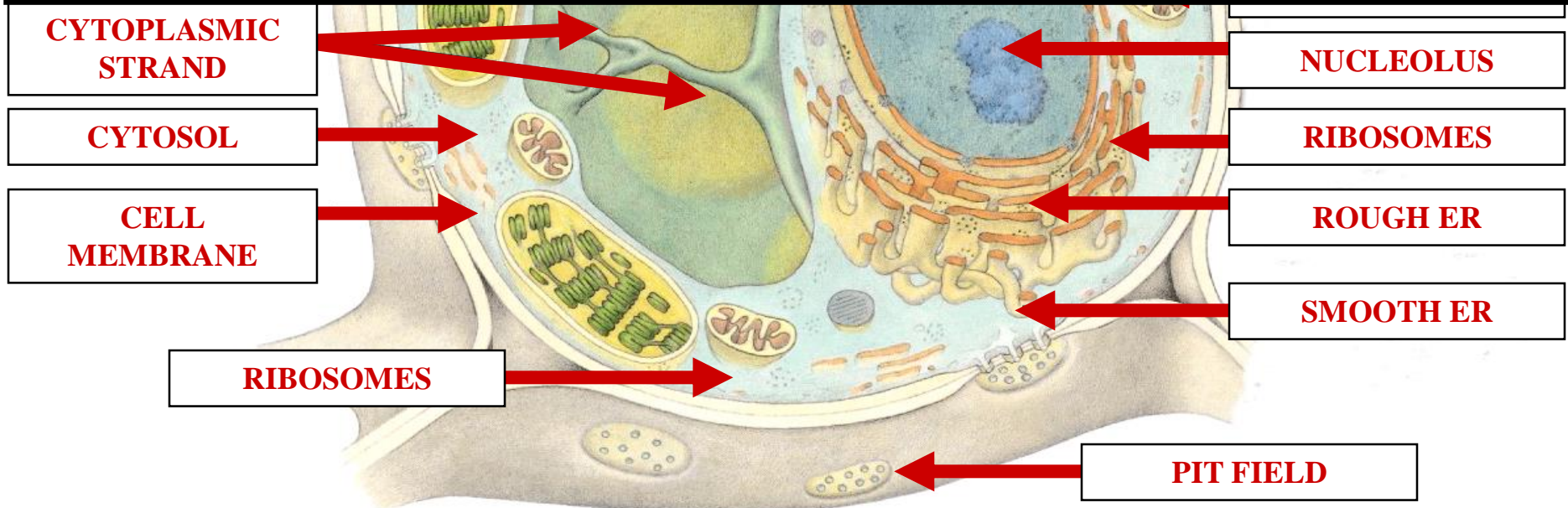
DOUBLE-MB ORGANELLES



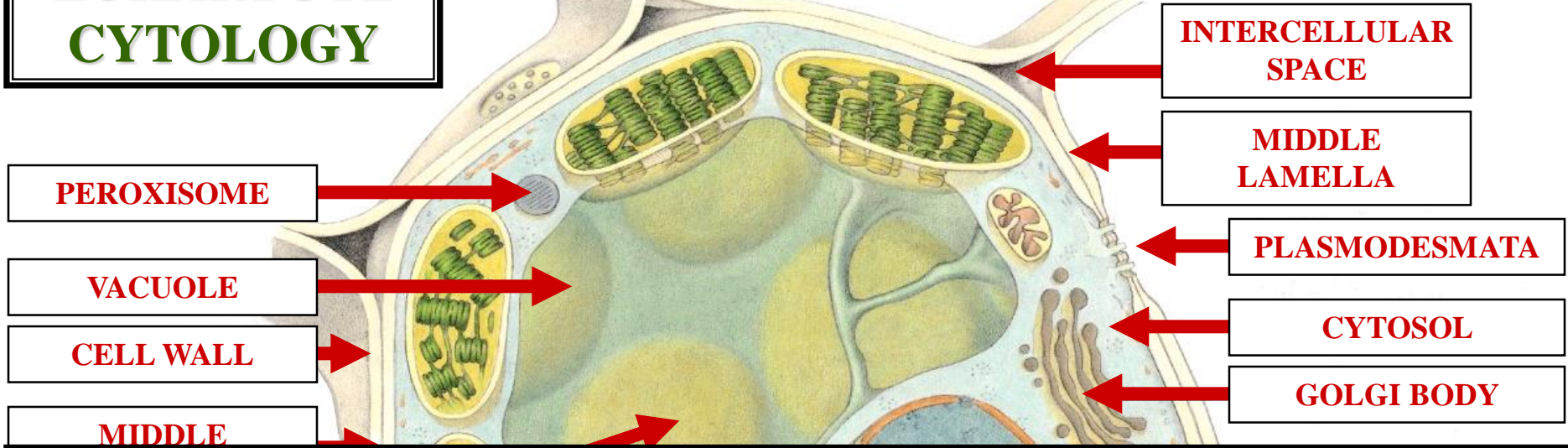
EUKARYOTE CYTOLOGY



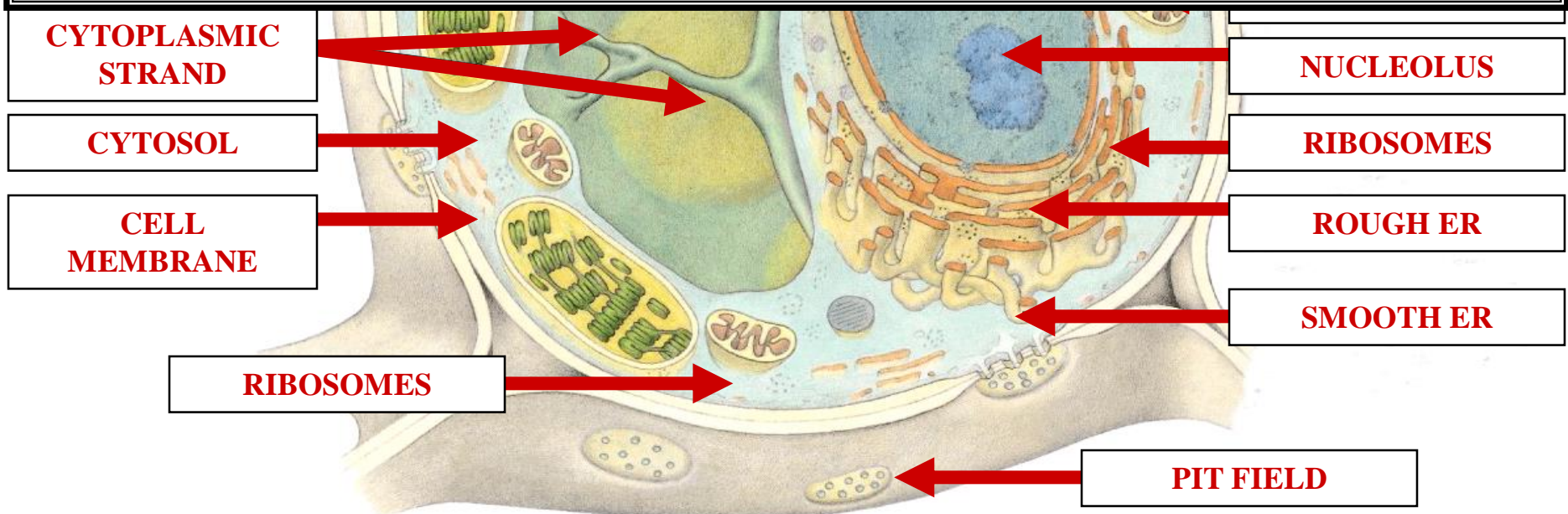
SINGLE-MB ORGANELLE



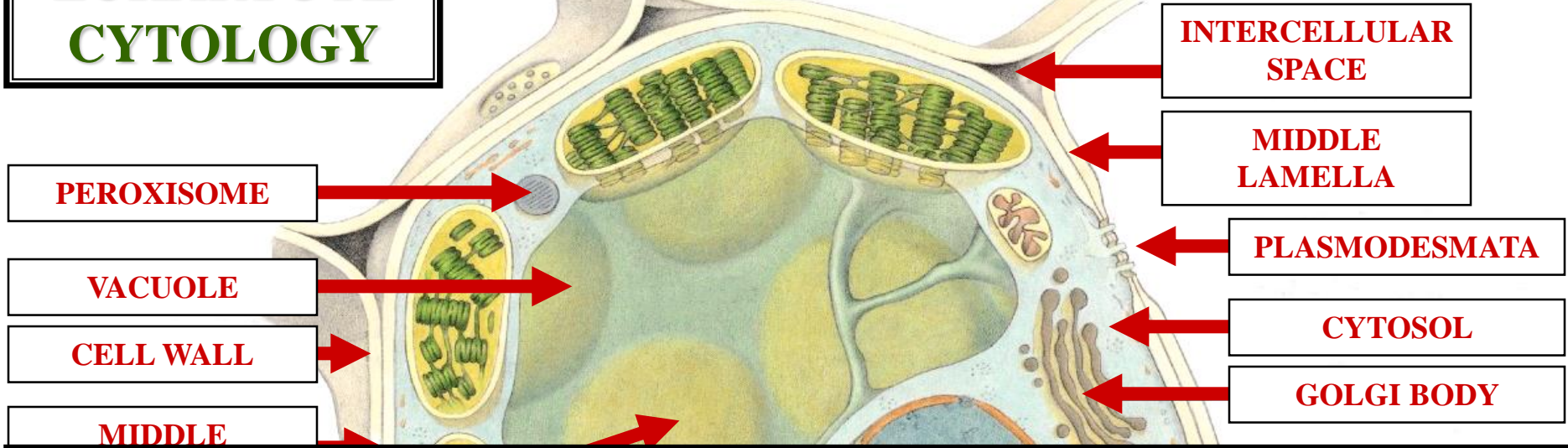
EUKARYOTE CYTOLOGY



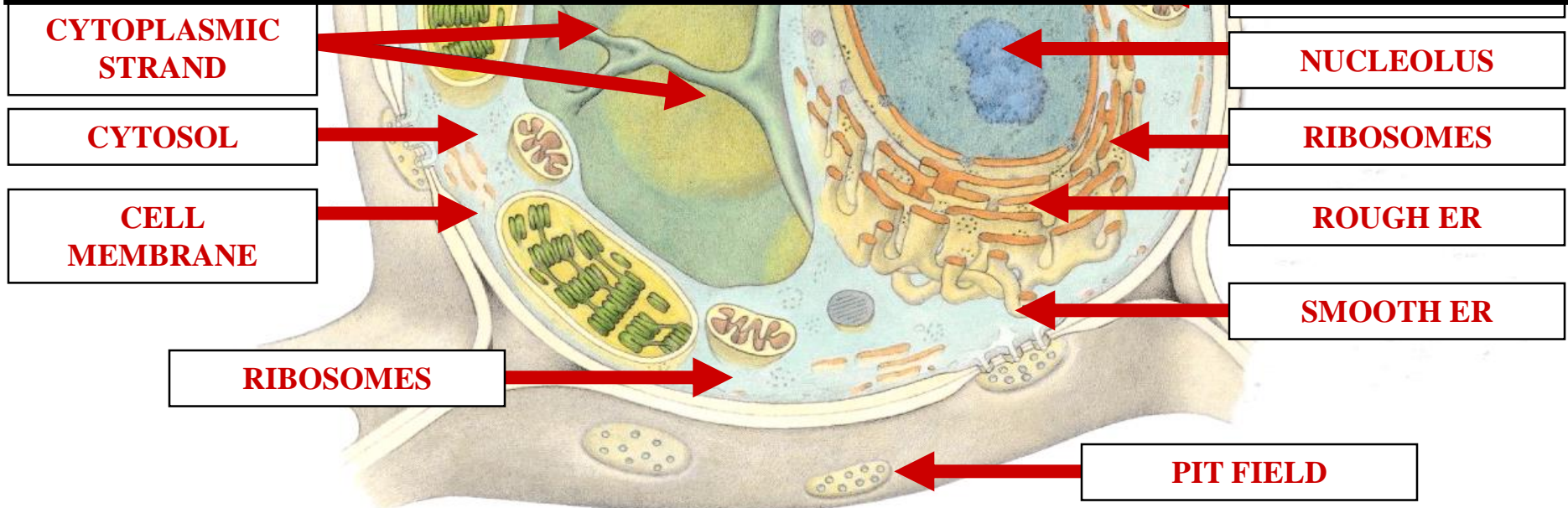
NON-MB ORGANELLE



EUKARYOTE CYTOLOGY



ENDO-MEMBRANE SYSTEM



EUKARYOTE CYTOLOGY



PEROXISOME

VACUOLE

CELL WALL

MIDDLE

INTERCELLULAR
SPACE

MIDDLE
LAMELLA

PLASMODESMATA

CYTOSOL

GOLGI BODY

MISCELLANEOUS CYTOLOGY

CYTOPLASMIC
STRAND

CYTOSOL

CELL
MEMBRANE

RIBOSOMES

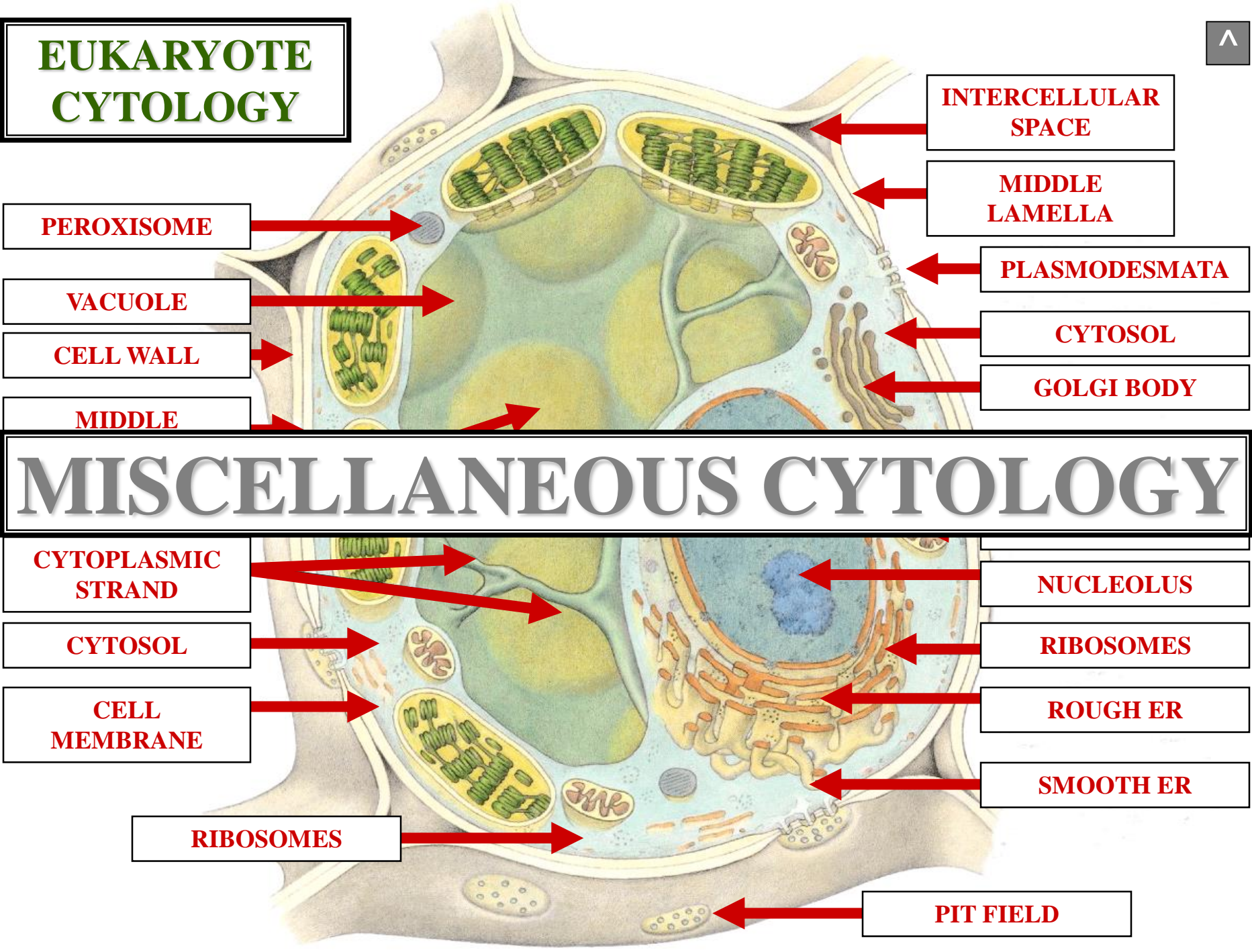
NUCLEOLUS

RIBOSOMES

ROUGH ER

SMOOTH ER

PIT FIELD





MISCELLANEOUS CYTOLOGY

CYTOSKELETON

CYTOSKELETON

CYTOSKELETON



CELL INTERNAL SUPPORT SYSTEM

CYTOSKELETON



**CYTOSKELETON
EUKARYOTE
INTERNAL
SUPPORT
SYSTEM**



CYTOSKELETON COMPONENTS

CYTOSKELETON COMPONENTS

MICROFILAMENTS

CYTOSKELETON COMPONENTS

CYTOSKELETON COMPONENTS

MICROFILAMENTS
MICROTUBULES

CYTOSKELETON
COMPONENTS

MICROFILAMENTS



MICROFILAMENTS

SOLID ACTIN FILAMENTS

MICROFILAMENTS



MICROFILAMENTS

SOLID ACTIN FILAMENTS

FOUND THROUGHOUT CYTOSOL

MICROFILAMENTS



MICROFILAMENTS

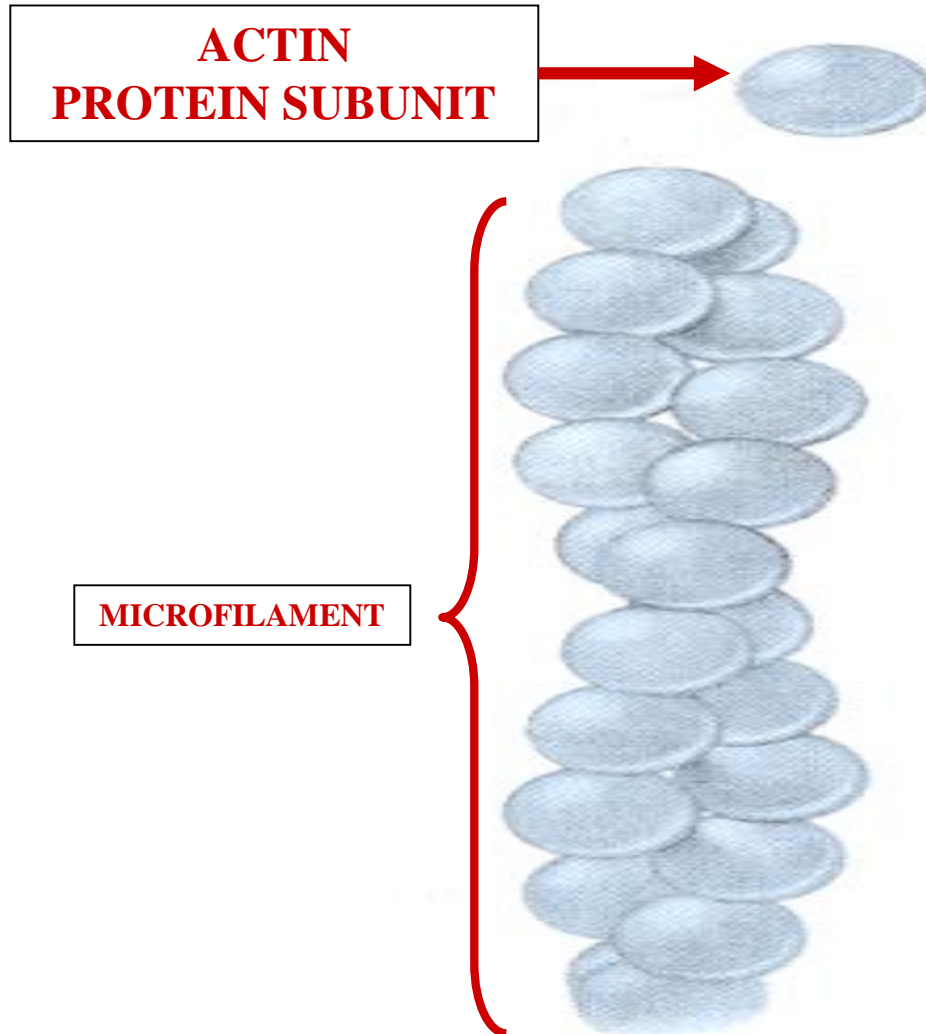
SOLID ACTIN FILAMENTS

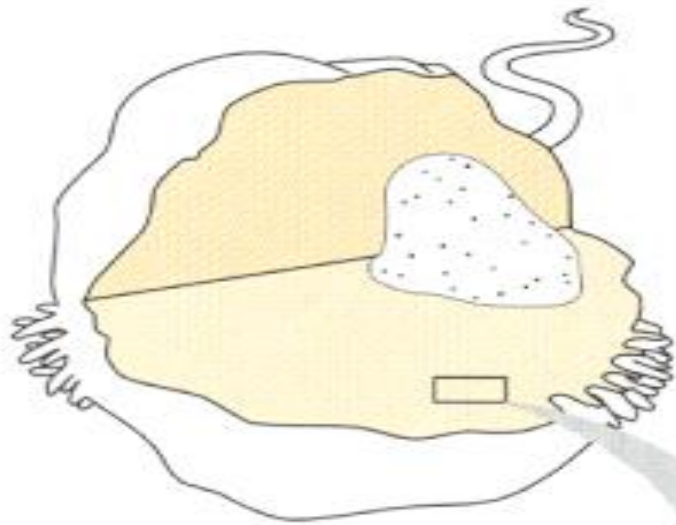
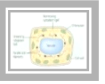
FOUND THROUGHOUT CYTOSOL

INDUCE CYCLOSIS

MICROFILAMENTS

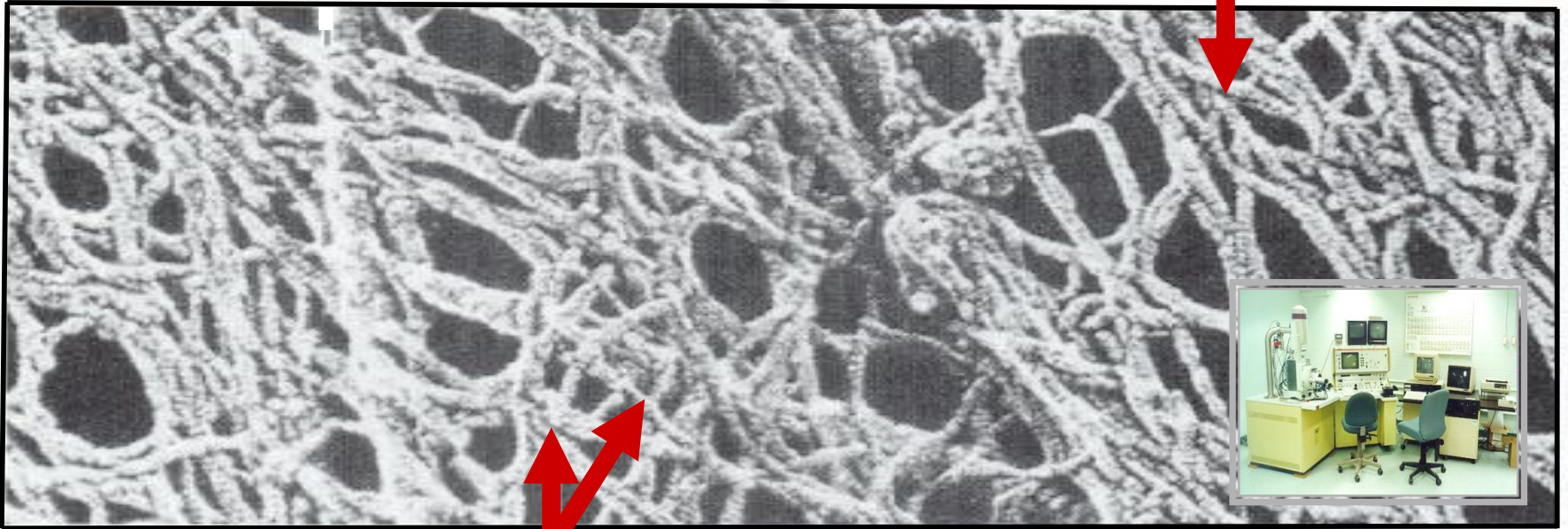
MICROFILAMENT COMPOSITION





CYTOSKELETON ULTRASTRUCTURE

CYTOSOL



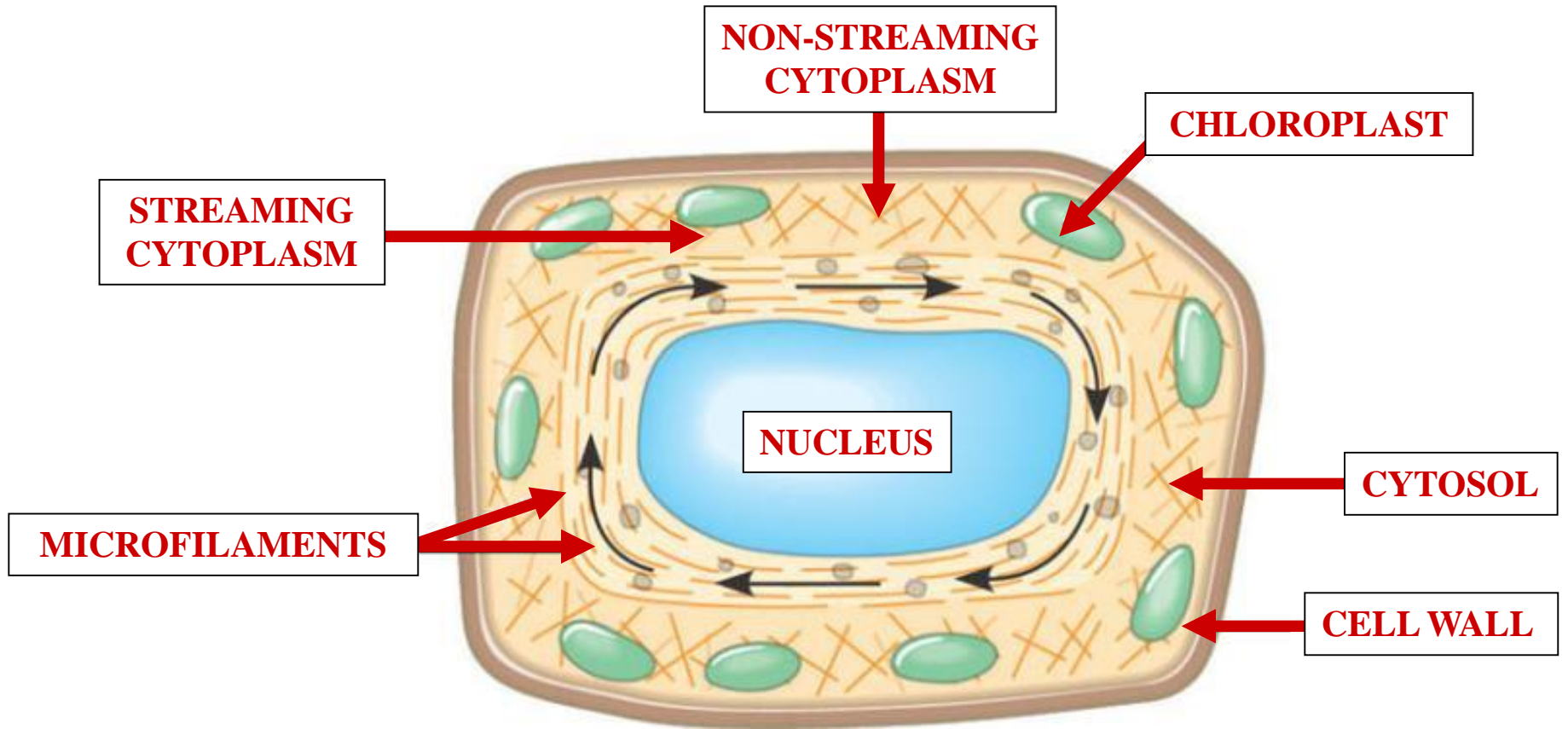
MICROFILAMENTS



CYTOPLASMIC STREAMING



MX



CYTOPLASMIC STREAMING = CYCLOSIS

***CYTOPLASMIC
STREAMING
EQUALLY MIXES
METABOLITES***

***EFFICIENT
CELL
METABOLISM***

HOMEOSTASIS



MICROTUBULES



MICROTUBULES

HOLLOW TUBULIN TUBULES

MICROTUBULES



MICROTUBULES

HOLLOW TUBULIN TUBULES

FOUND THROUGHOUT CYTOSOL

MICROTUBULES



MICROTUBULES

HOLLOW TUBULIN TUBULES

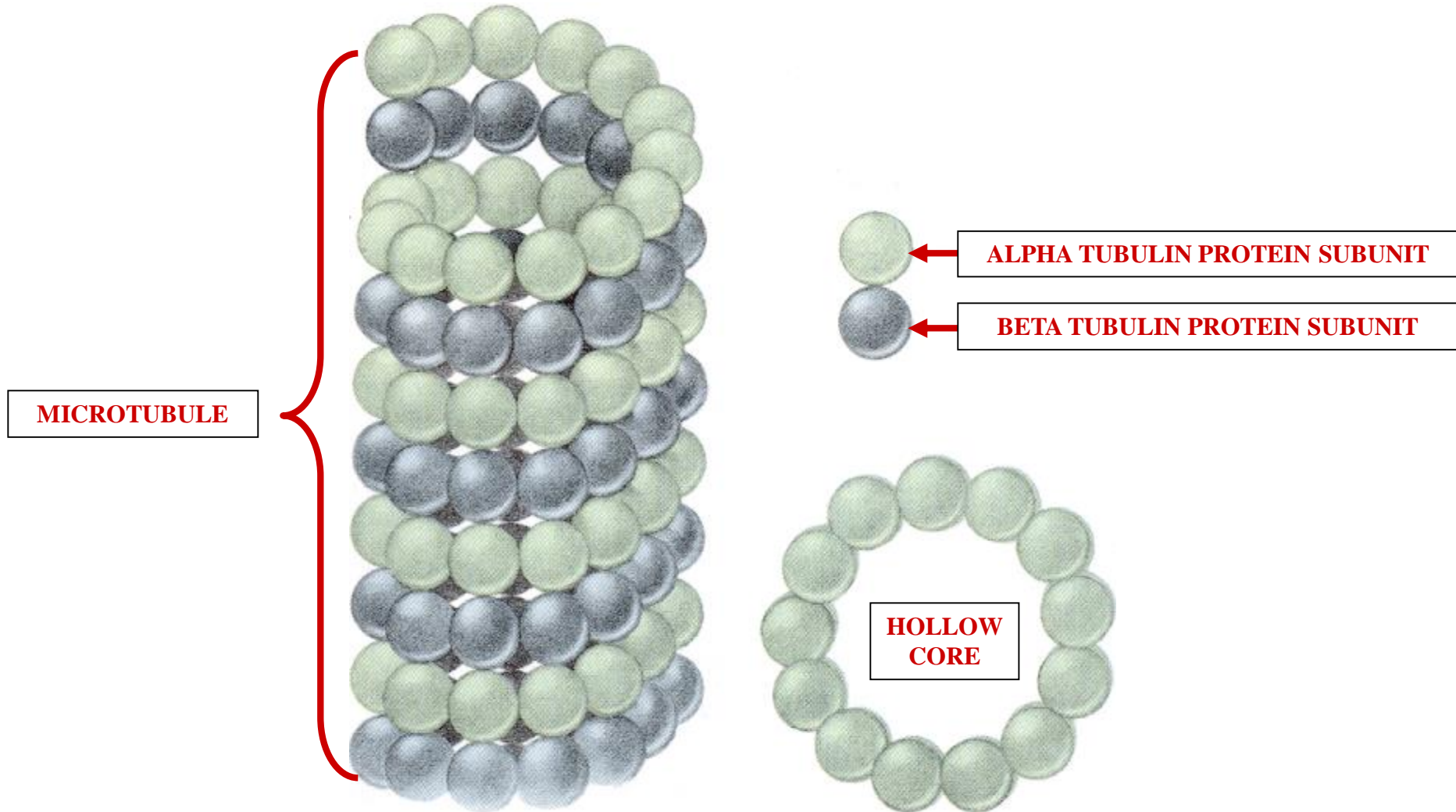
FOUND THROUGHOUT CYTOSOL

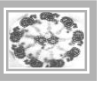
SUPPORT MICROFILAMENTS

MICROTUBULES

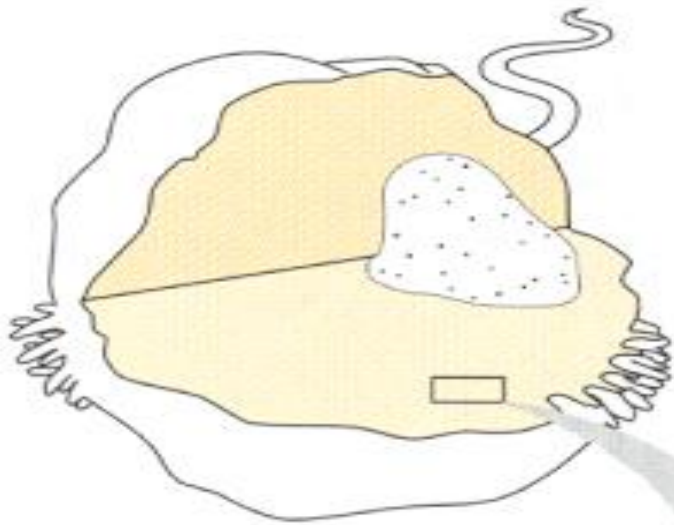


MICROTUBULE COMPOSITION



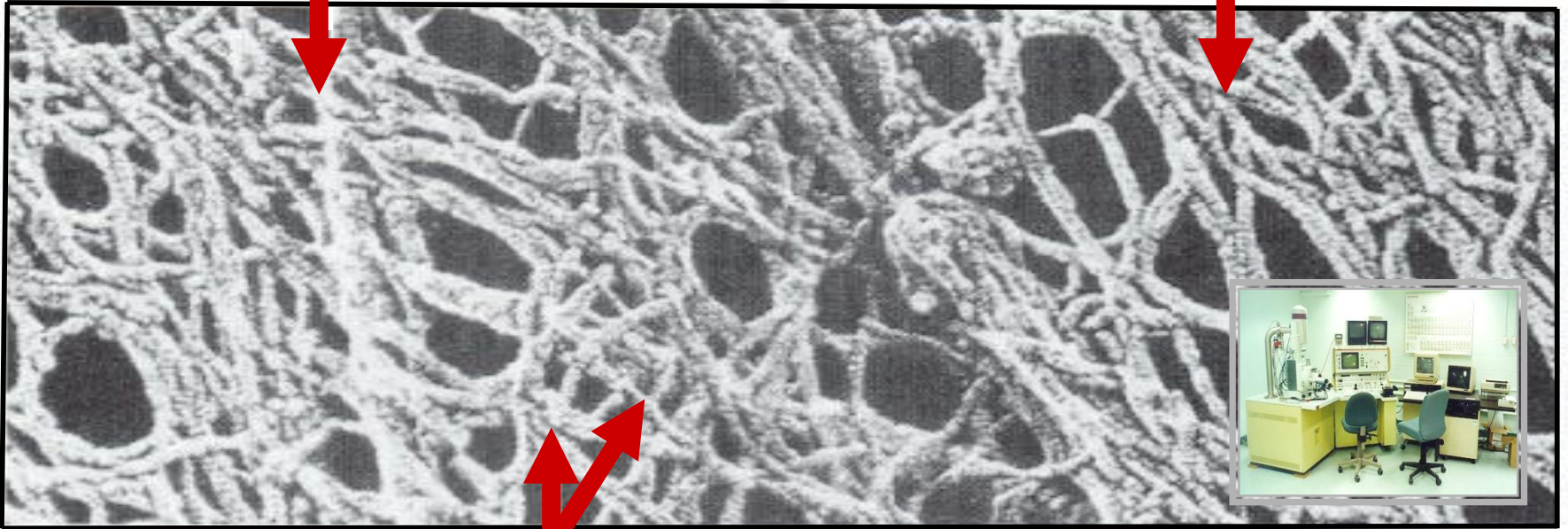


CYTOSKELETON ULTRASTRUCTURE

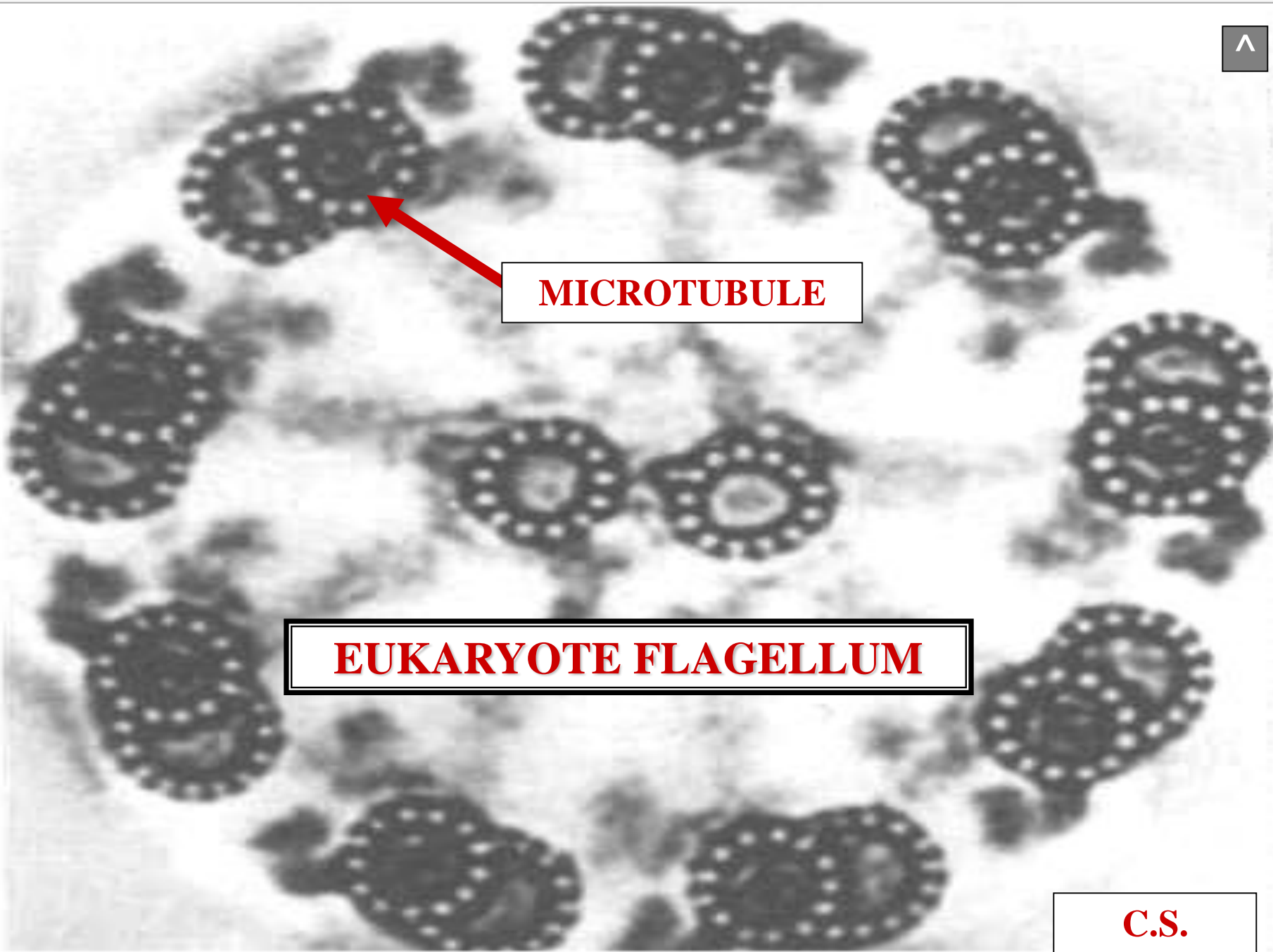


MICROTUBULE

CYTOSOL



MICROFILAMENTS



MICROTUBULE

EUKARYOTE FLAGELLUM

C.S.

EUKARYOTE FLAGELLUM

FLAGELLUM



FLAGELLUM

PROPULSION APPENDAGE

FLAGELLUM

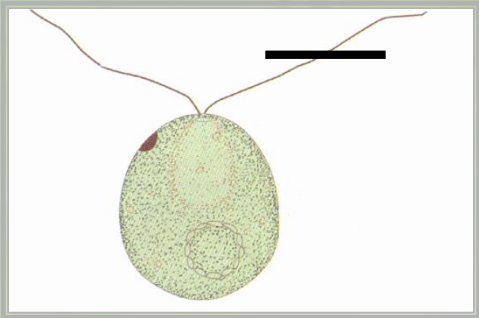


FLAGELLA



EUKARYOTE CELL





FLAGELLA

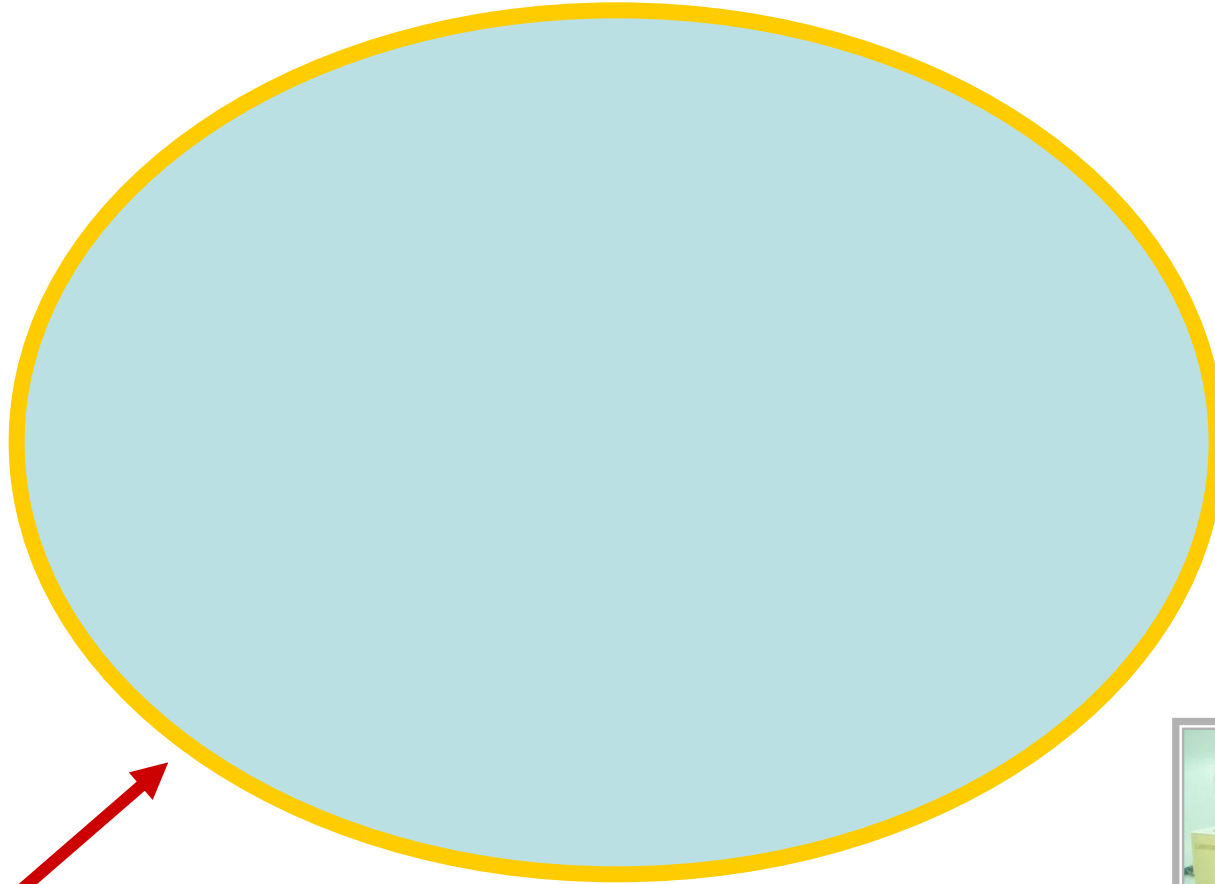


EUKARYOTE CELL



EUKARYOTE FLAGELLUM ULTRASTRUCTURE

PROKARYOTE FLAGELLUM



MEMBRANE



C.S.

PROKARYOTE FLAGELLUM



E

PR



MEMBRANE: ABSENT

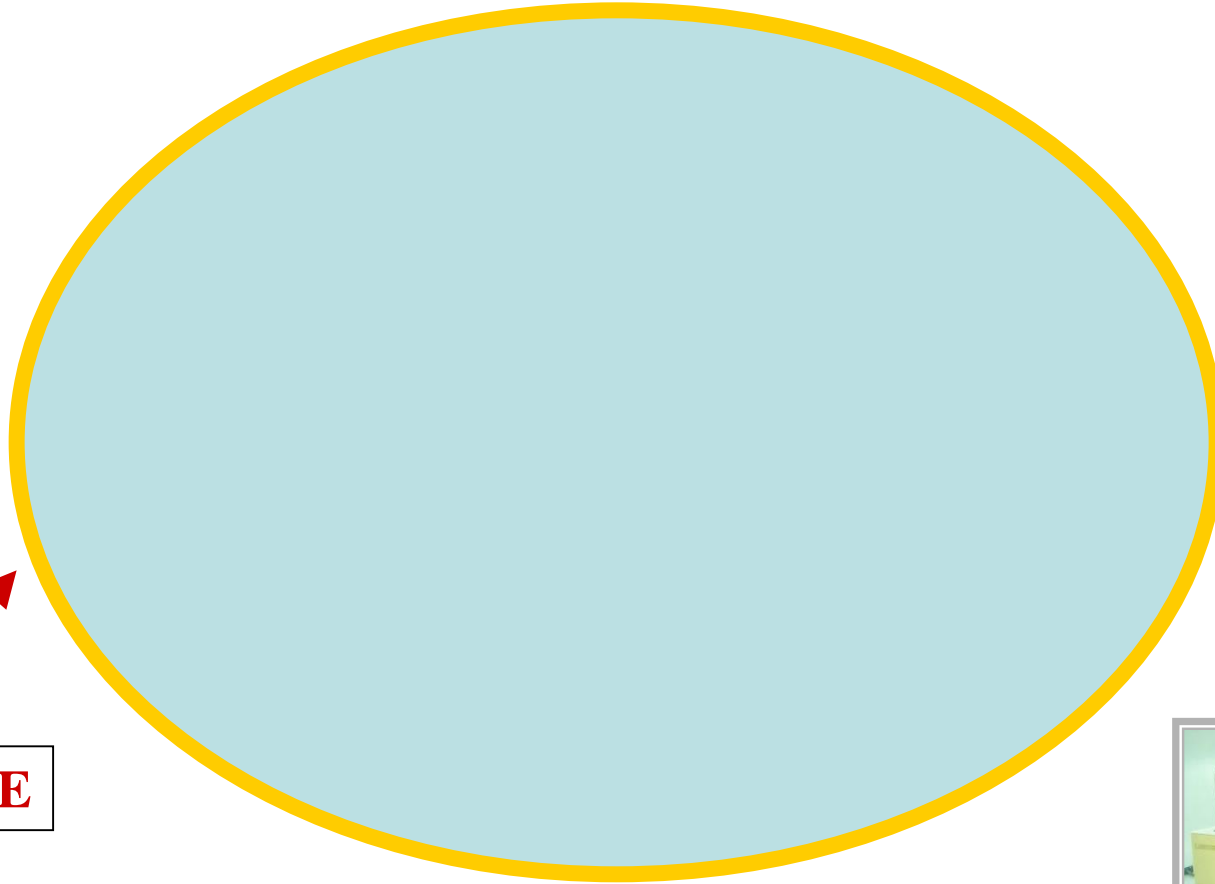
C.S.

EUKARYOTE FLAGELLUM

^

P

AB



MEMBRANE



MEMBRANE: PRESENT

C.S.

PROKARYOTE FLAGELLUM

9 + 2
MICROTUBULE
PATTERN
ABSENT

MEMBRANE: ABSENT



EUKARYOTE FLAGELLUM



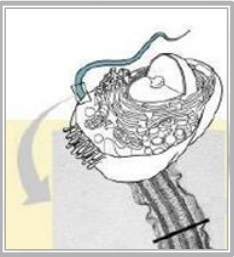
9 + 2
MICROTUBULE
PATTERN
PRESENT

MEMBRANE



MEMBRANE: PRESENT

C.S.



EUKARYOTE FLAGELLUM



C.S.



**MICROTUBULE
SUPPORT ROD**

EUKARYOTE FLAGELLUM



C.S.



1

2

2

3

9 OUTER
PAIRED
MICROTUBULES

4

9

EUKARYOTE FLAGELLUM

8

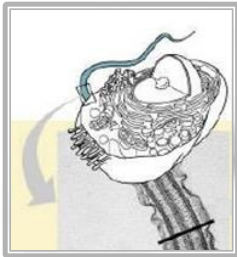
5

7

6



C.S.



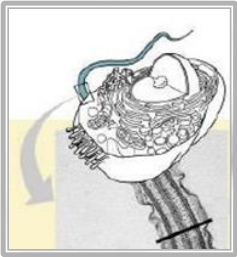
**9 OUTER
PAIRED
MICROTUBULES**

**2 INNER
NON-PAIRED
MICROTUBULES**

EUKARYOTE FLAGELLUM



C.S.



**9 OUTER
PAIRED
MICROTUBULES**

**2 INNER
NON-PAIRED
MICROTUBULES**

EUKARYOTE FLAGELLUM

9+2 MICROTUBULE PATTERN: PRESENT

INTERCELLULAR JUNCTIONS

INTERCELLULAR JUNCTIONS

INTERCELLULAR JUNCTIONS

PERMIT CELL TO CELL
COMMUNICATION
WITH
MULTICELLULAR
EUKARYOTES

INTERCELLULAR JUNCTIONS



IT

MULTICELLULAR EUKARYOTES





CC

INTEGRATED ORGANISMS





CELL TO CELL COMMUNICATION



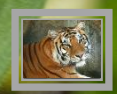


INTERCELLULAR JUNCTIONS

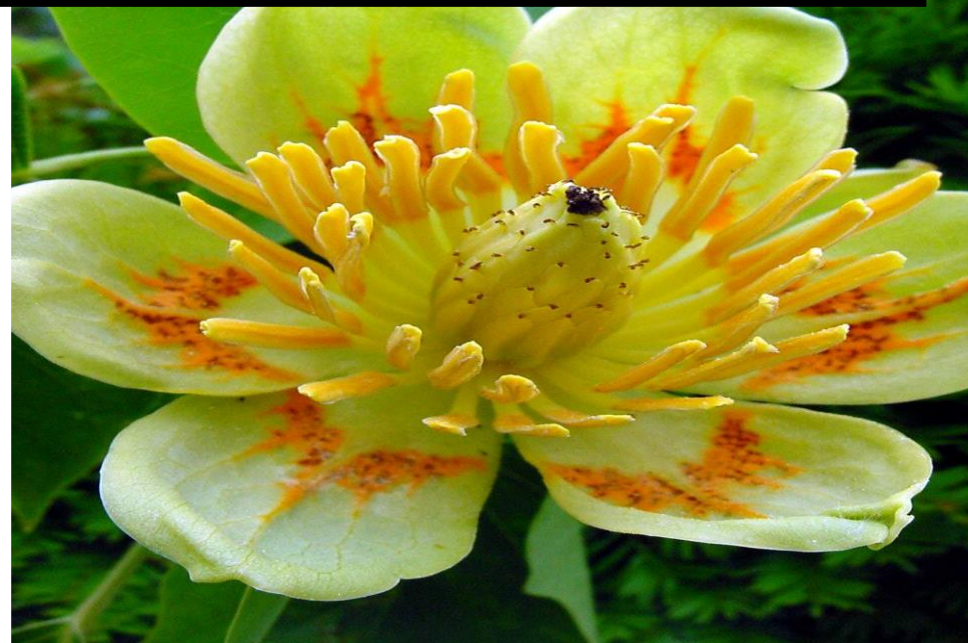




INTERCELLULAR JUNCTION TYPES



PLANT CELLS





ANIMAL CELLS



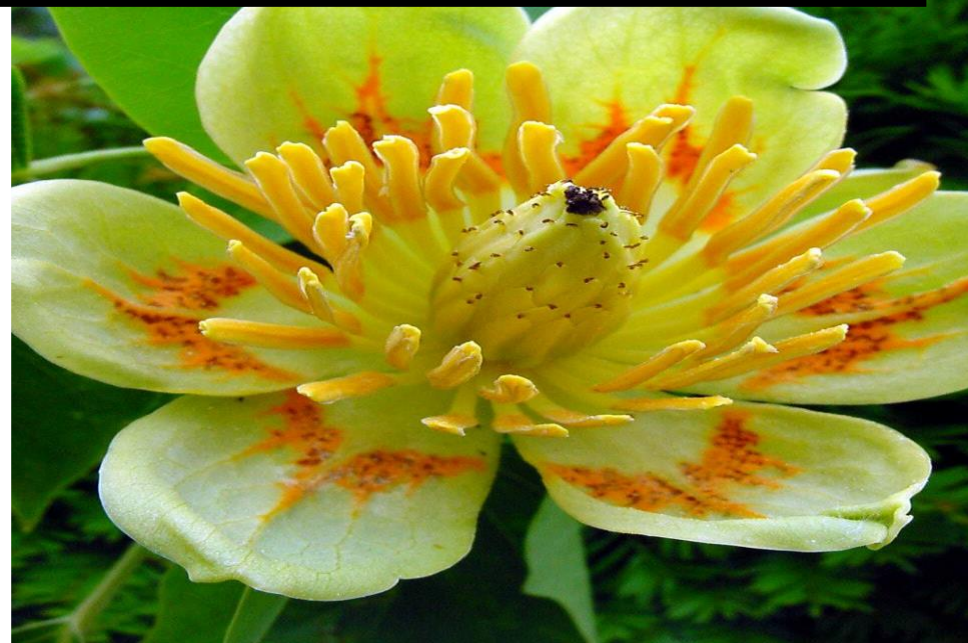


PLANT INTERCELLULAR JUNCTIONS



P

PLANT CELLS



PLASMODESMATA

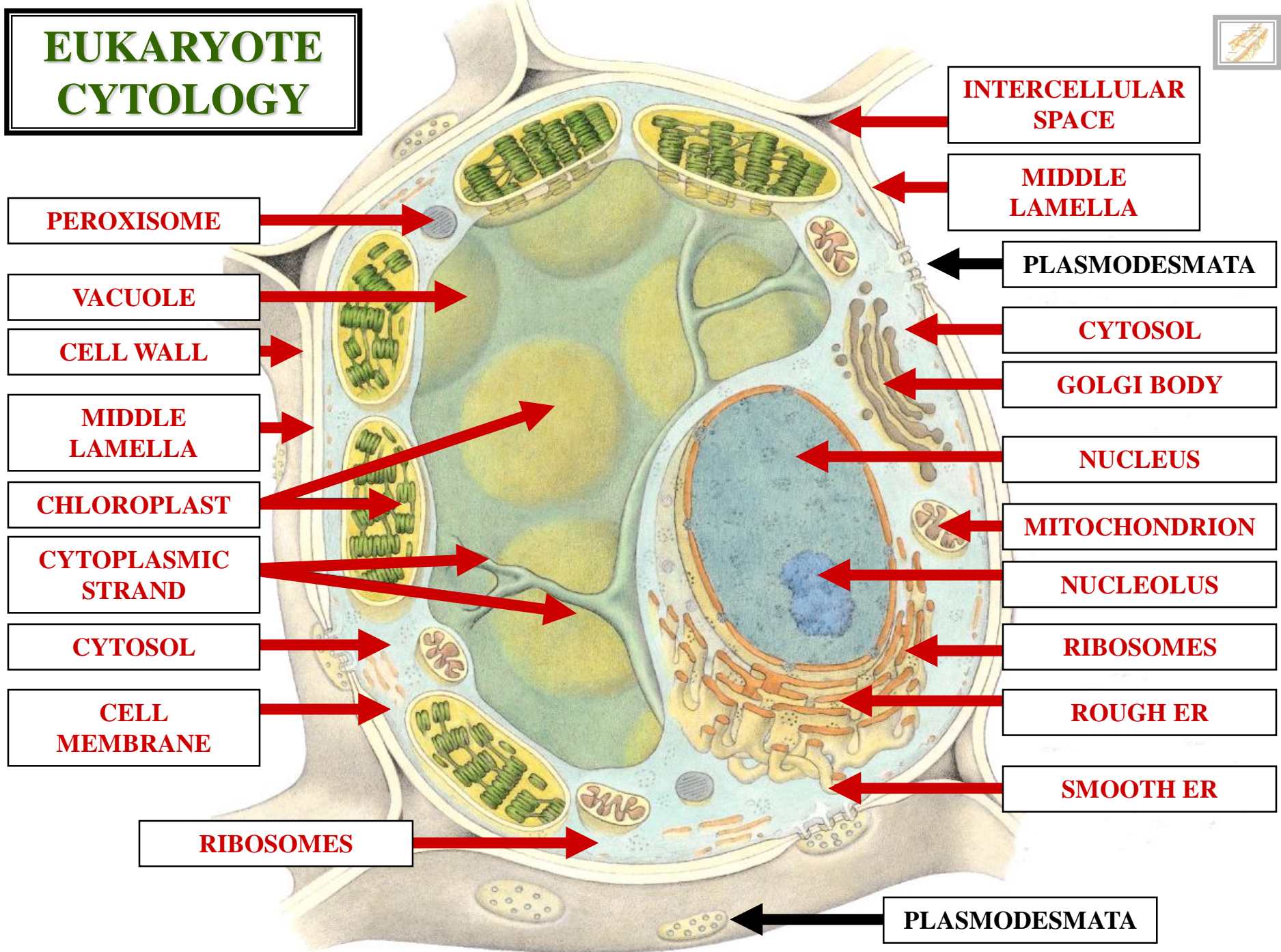


PLASMODESMATA

**CYTOSOL CHANNELS
BETWEEN
ADJACENT PLANT CELLS**

PLASMODESMATA

EUKARYOTE CYTOLOGY



CELL #1



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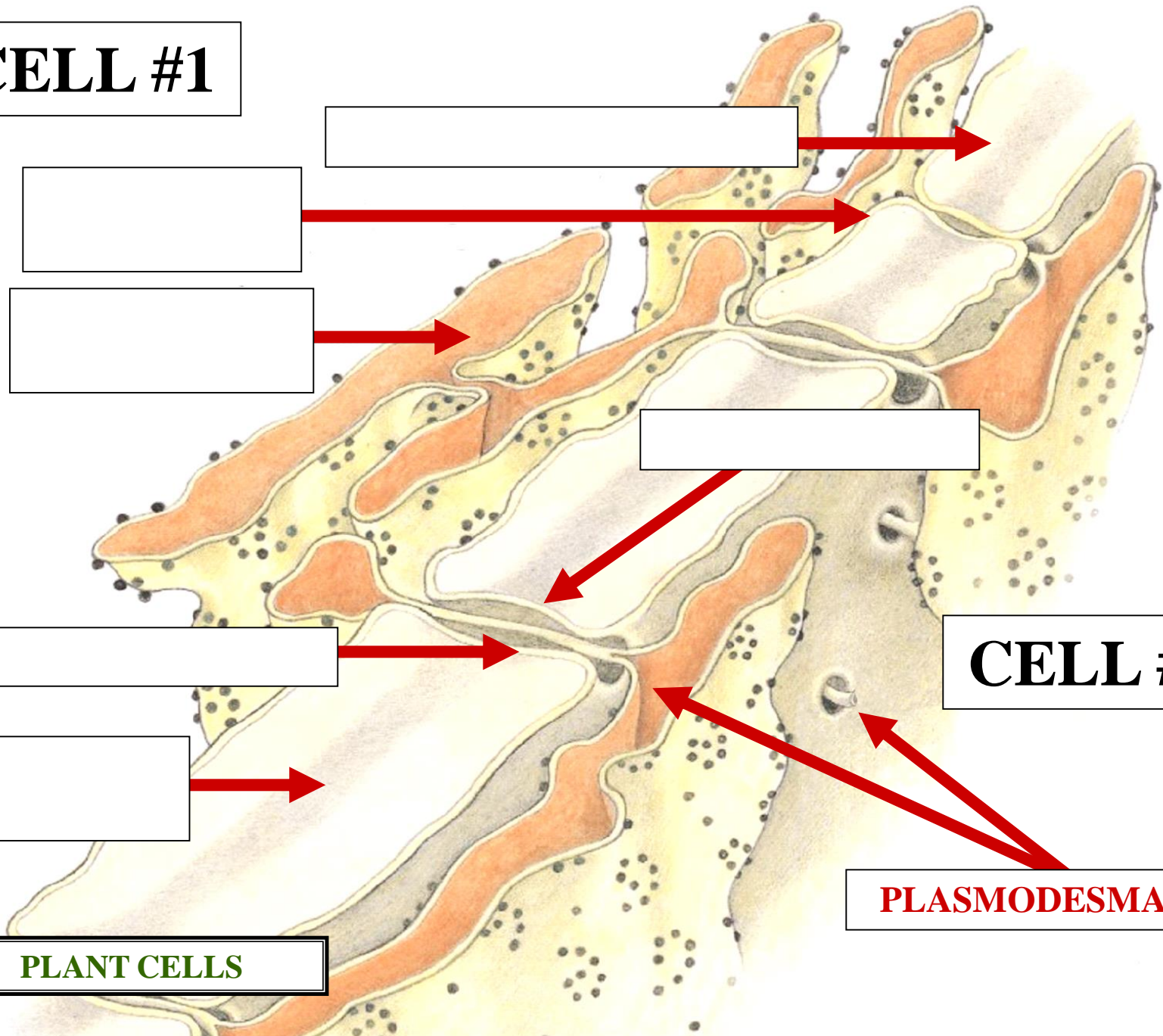
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CELL #2

PLASMODESMATA

PLANT CELLS



CELL #1

CW

PR

[]

[]

[]

[]

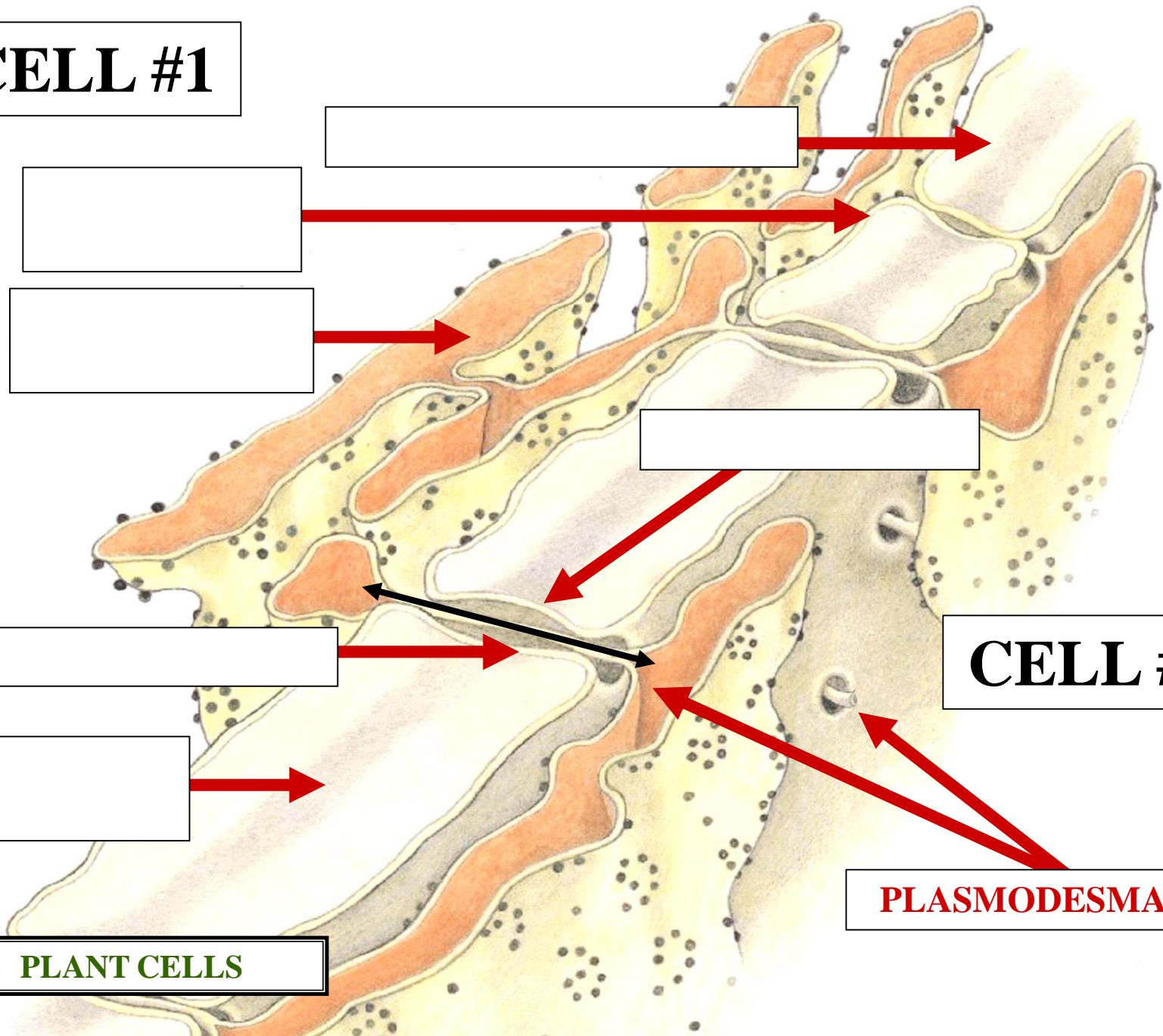
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[]

CELL #2

PLASMODESMATA

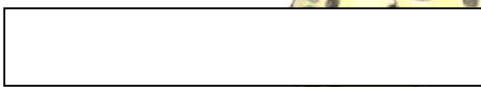
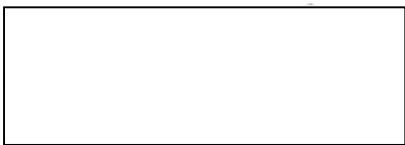
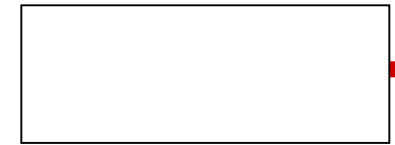
PLANT CELLS



CELL #1



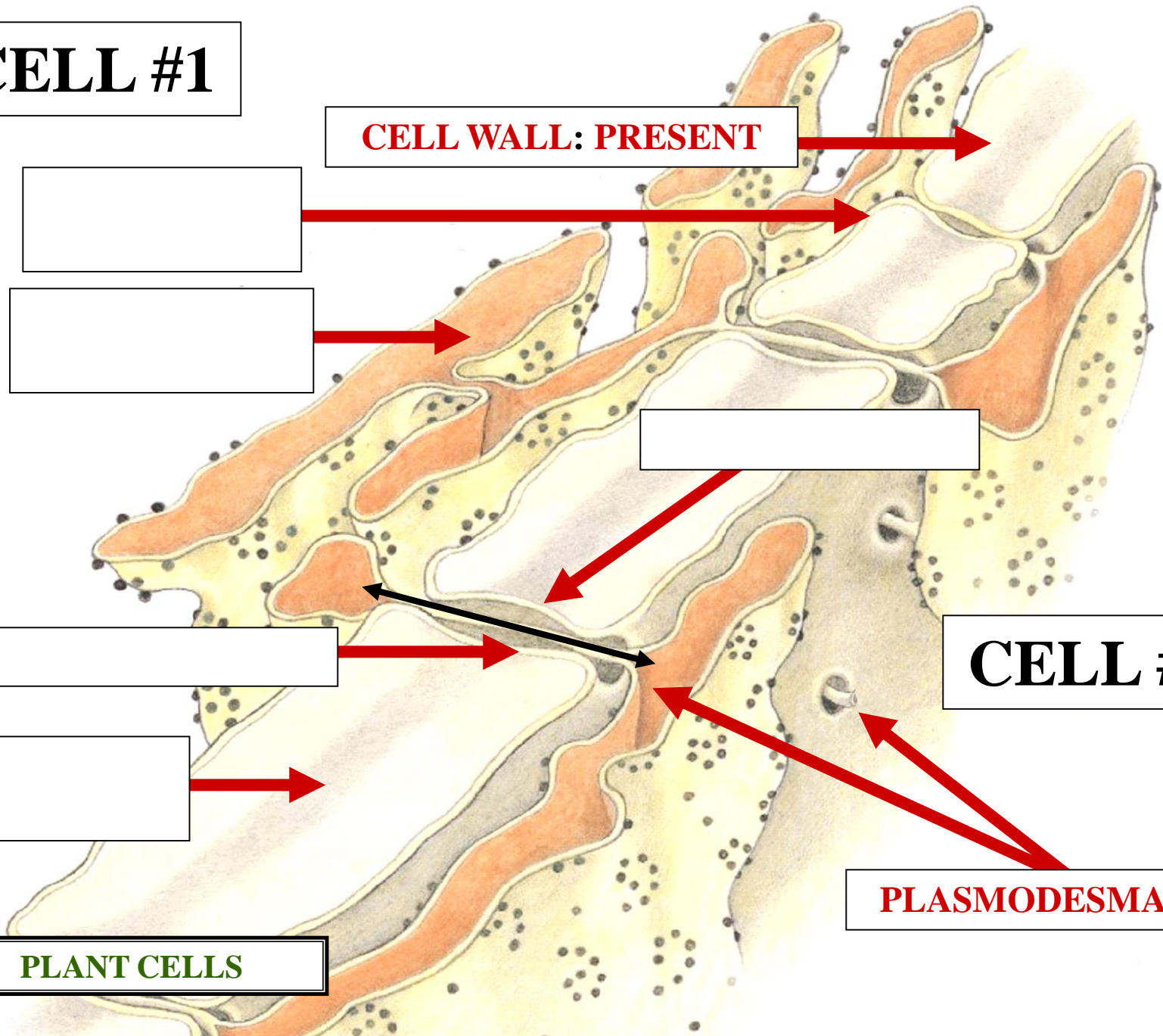
CELL WALL: PRESENT



CELL #2

PLASMODESMATA

PLANT CELLS





ANIMAL INTERCELLULAR JUNCTIONS



ANIMAL CELLS



GAP JUNCTIONS

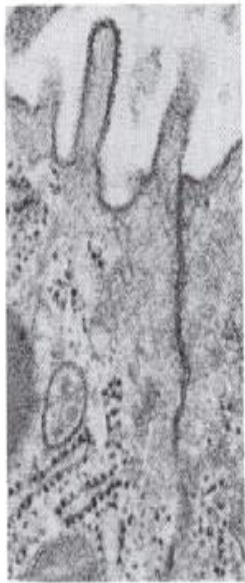


GAP JUNCTIONS

**CYTOSOL CHANNELS
BETWEEN**

ADJACENT ANIMAL CELLS

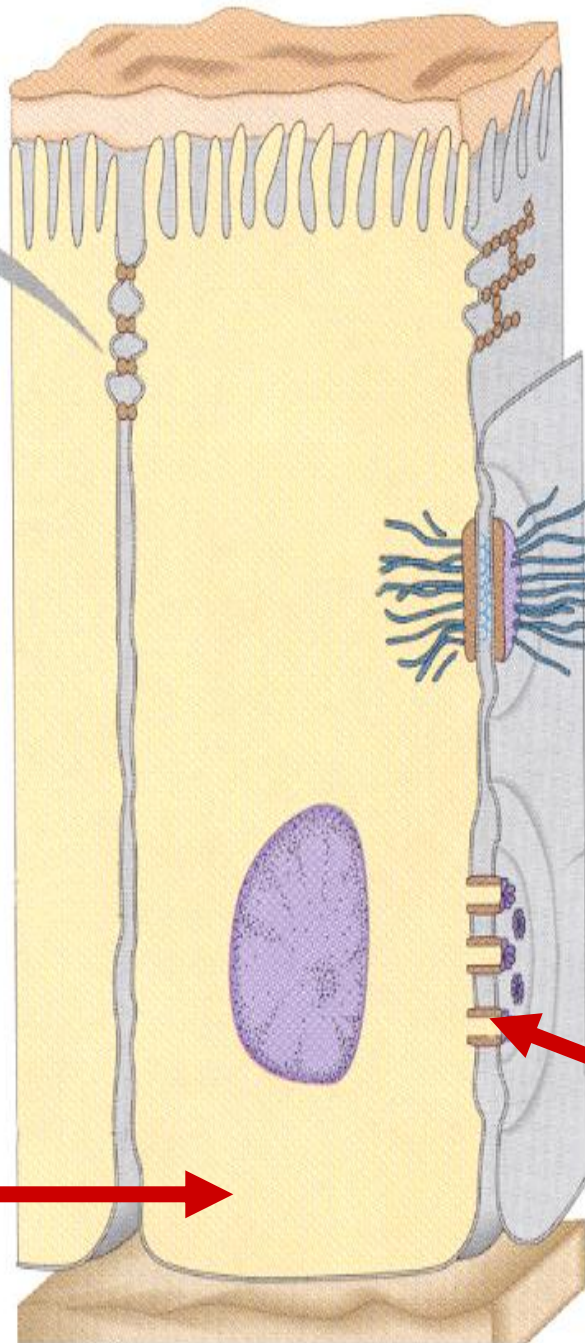
GAP JUNCTIONS



0.25 μm

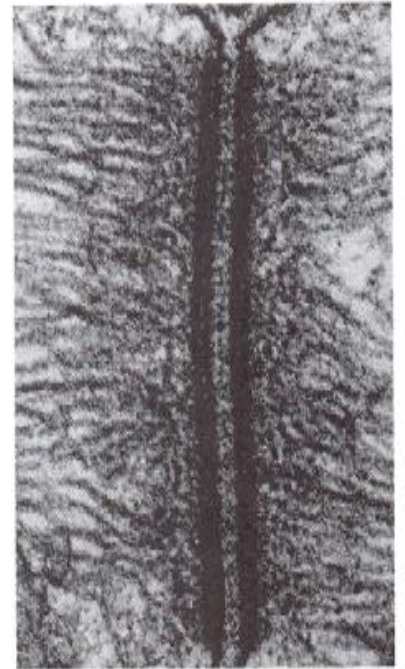
ANIMAL CELLS

CELL #1

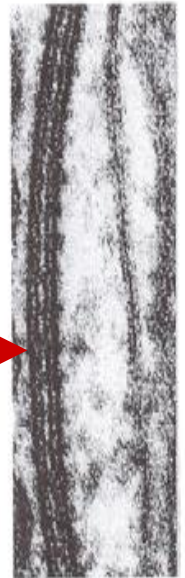


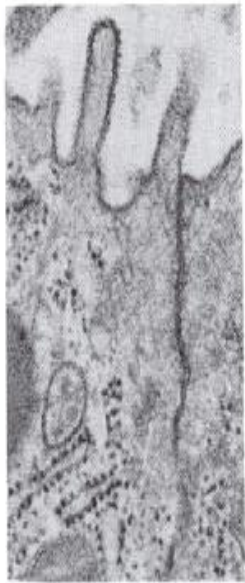
CELL #2

GAP JUNCTIONS



1 μm

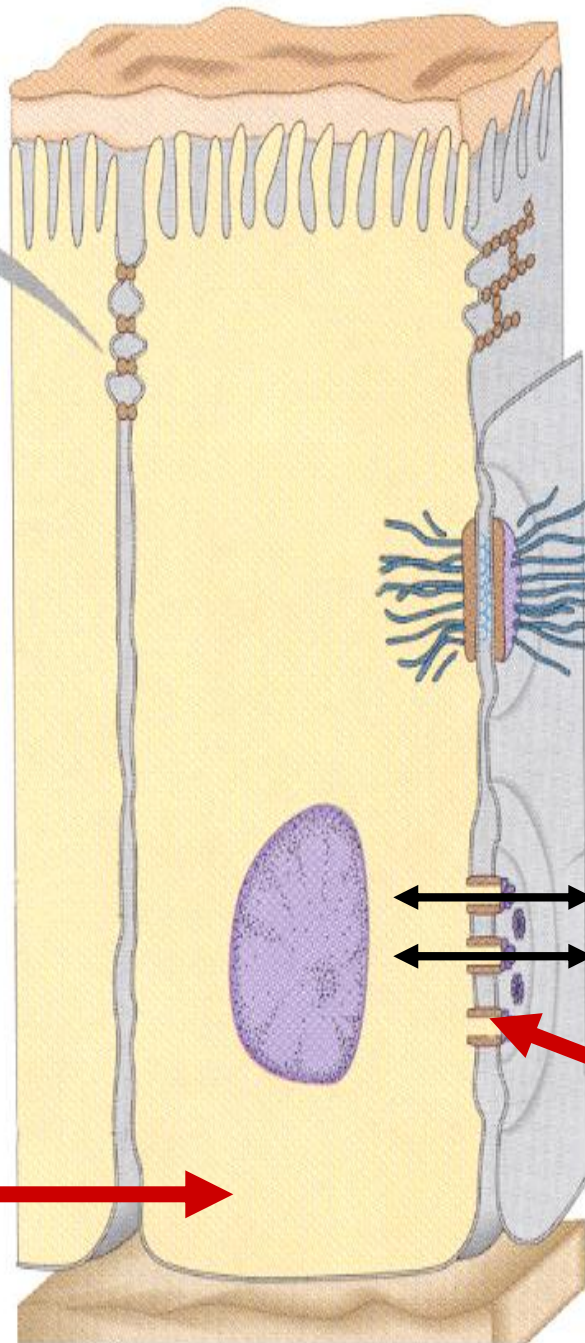




0.25 μm

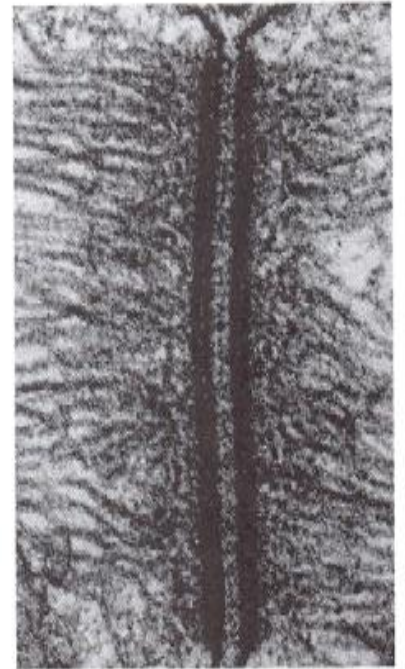
ANIMAL CELLS

CELL #1



CELL #2

**GAP
JUNCTIONS**

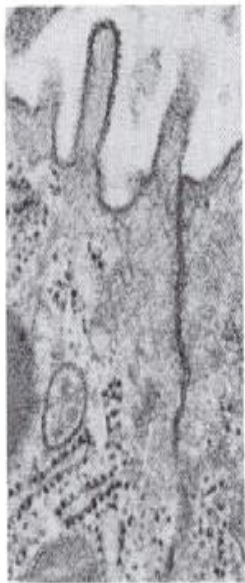


1 μm

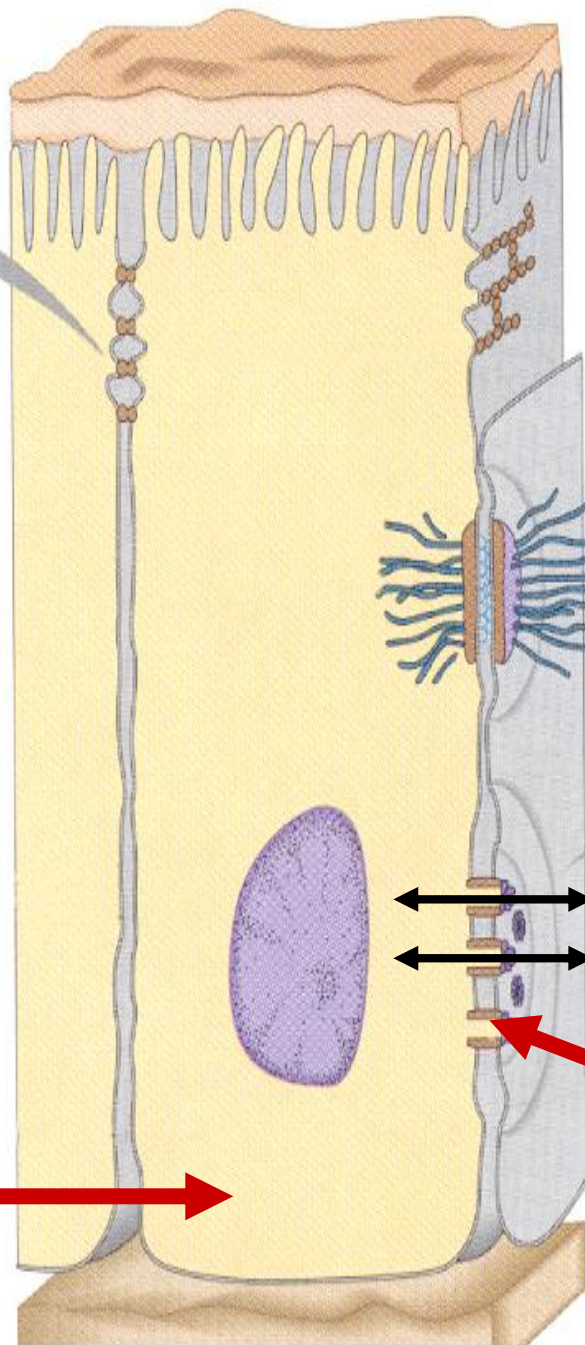
CW

AB





0.25 μm



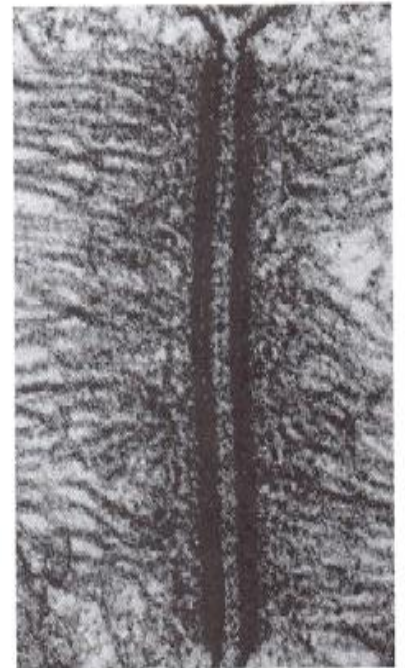
ANIMAL CELLS

CELL WALL: ABSENT

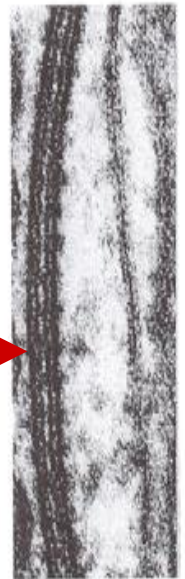
CELL #1

CELL #2

**GAP
JUNCTIONS**



1 μm

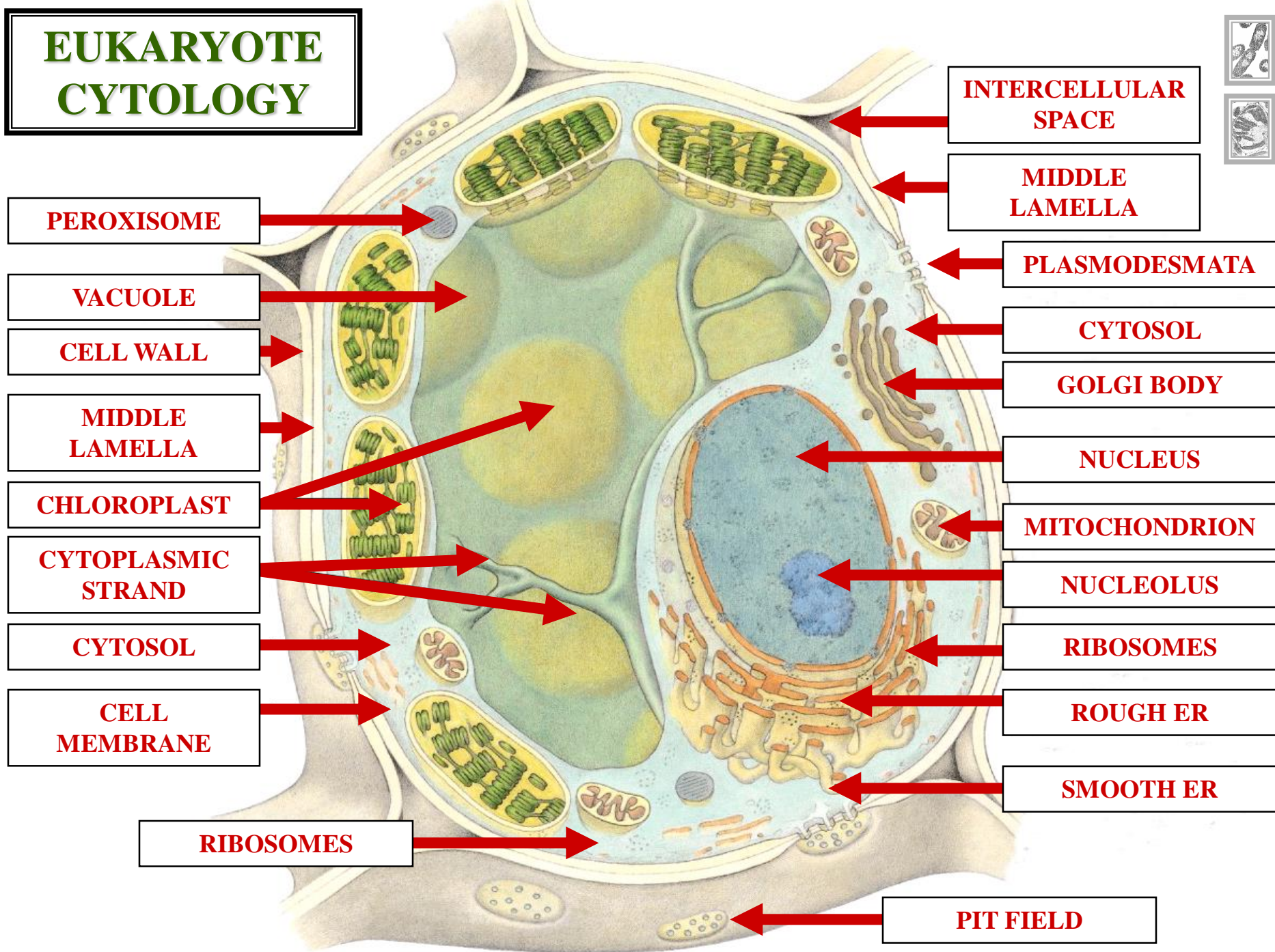


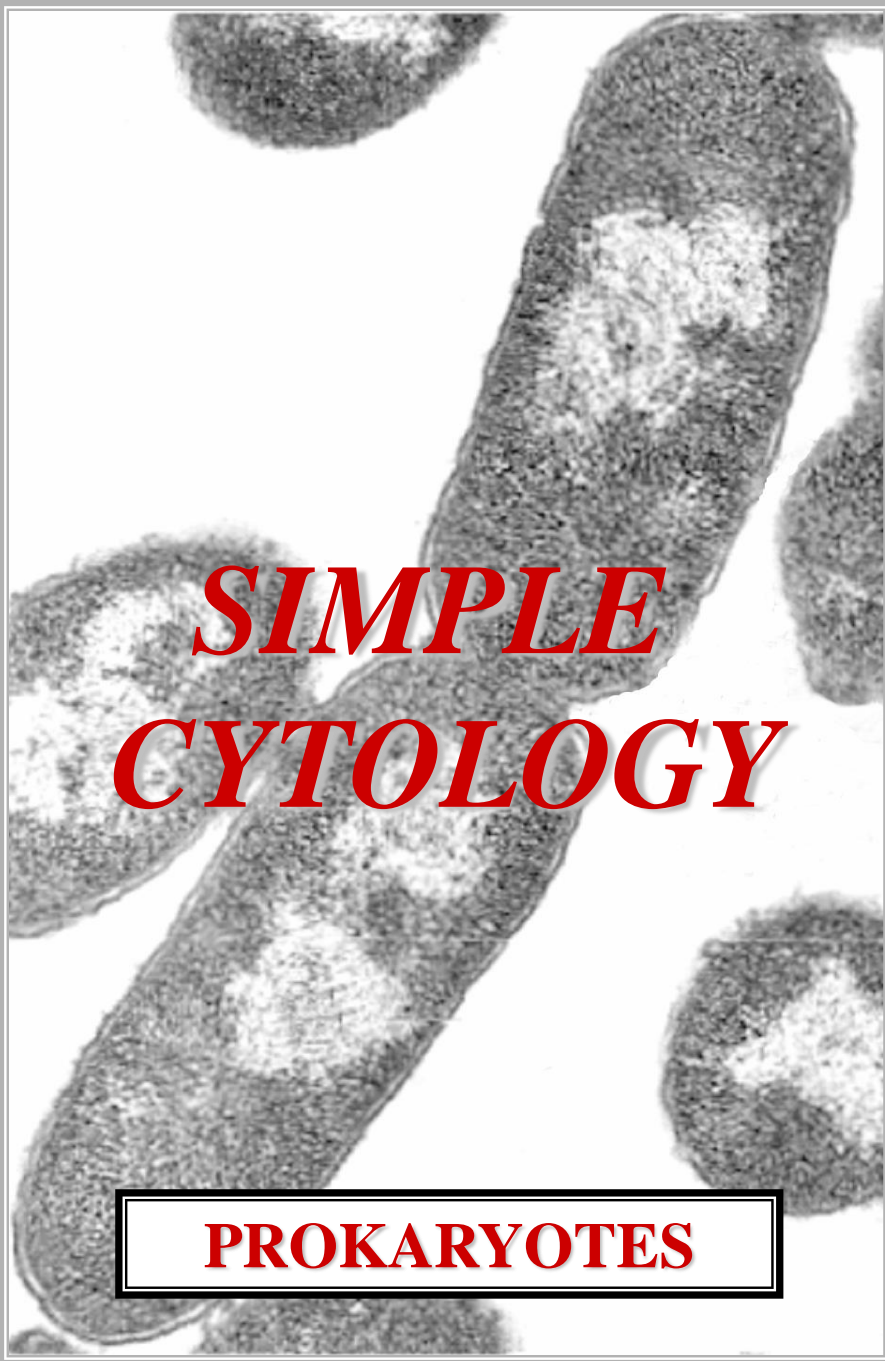
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EUKARYOTE CYTOLOGY SUMMARY

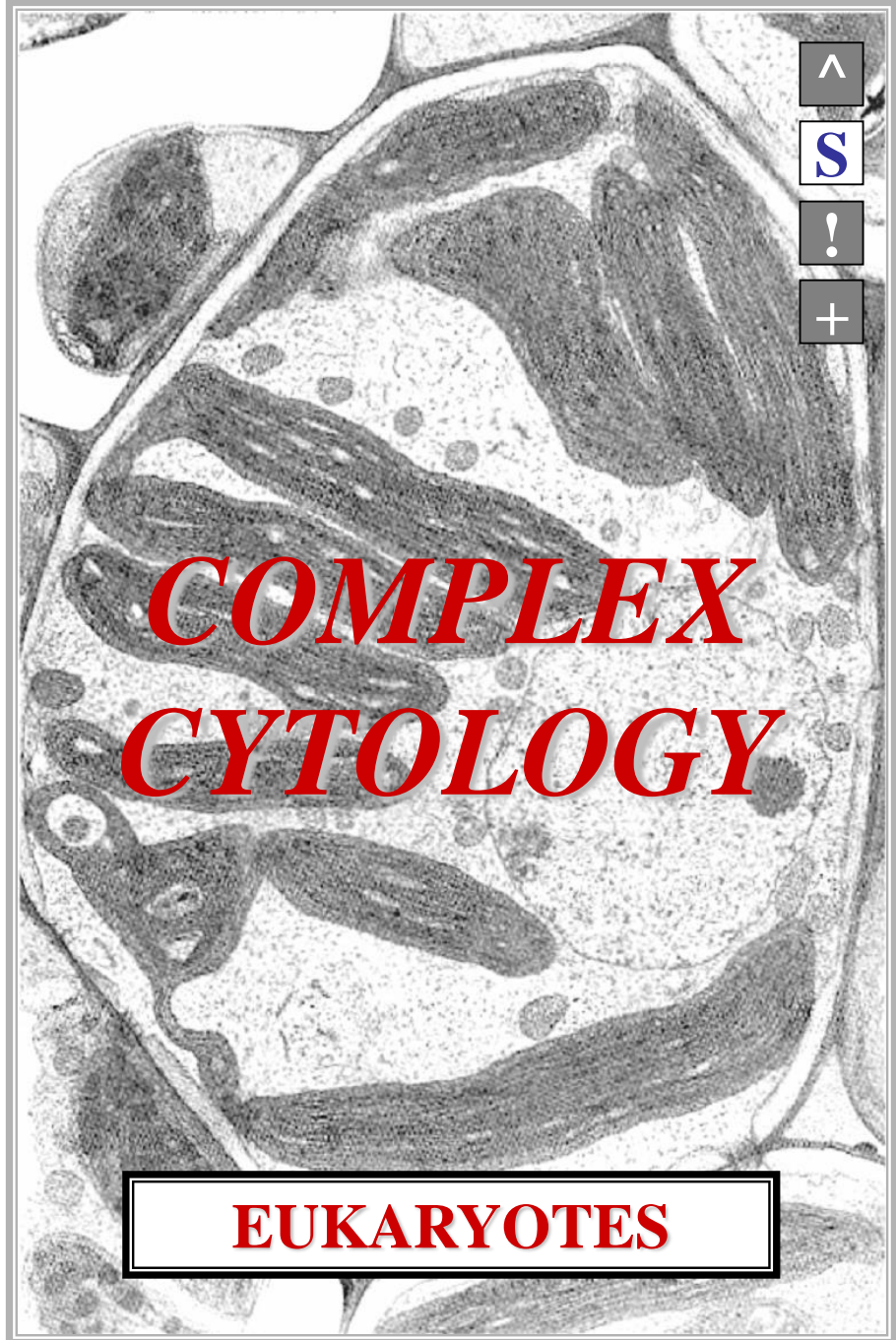
EUKARYOTE CYTOLOGY





***SIMPLE
CYTOLOGY***

PROKARYOTES

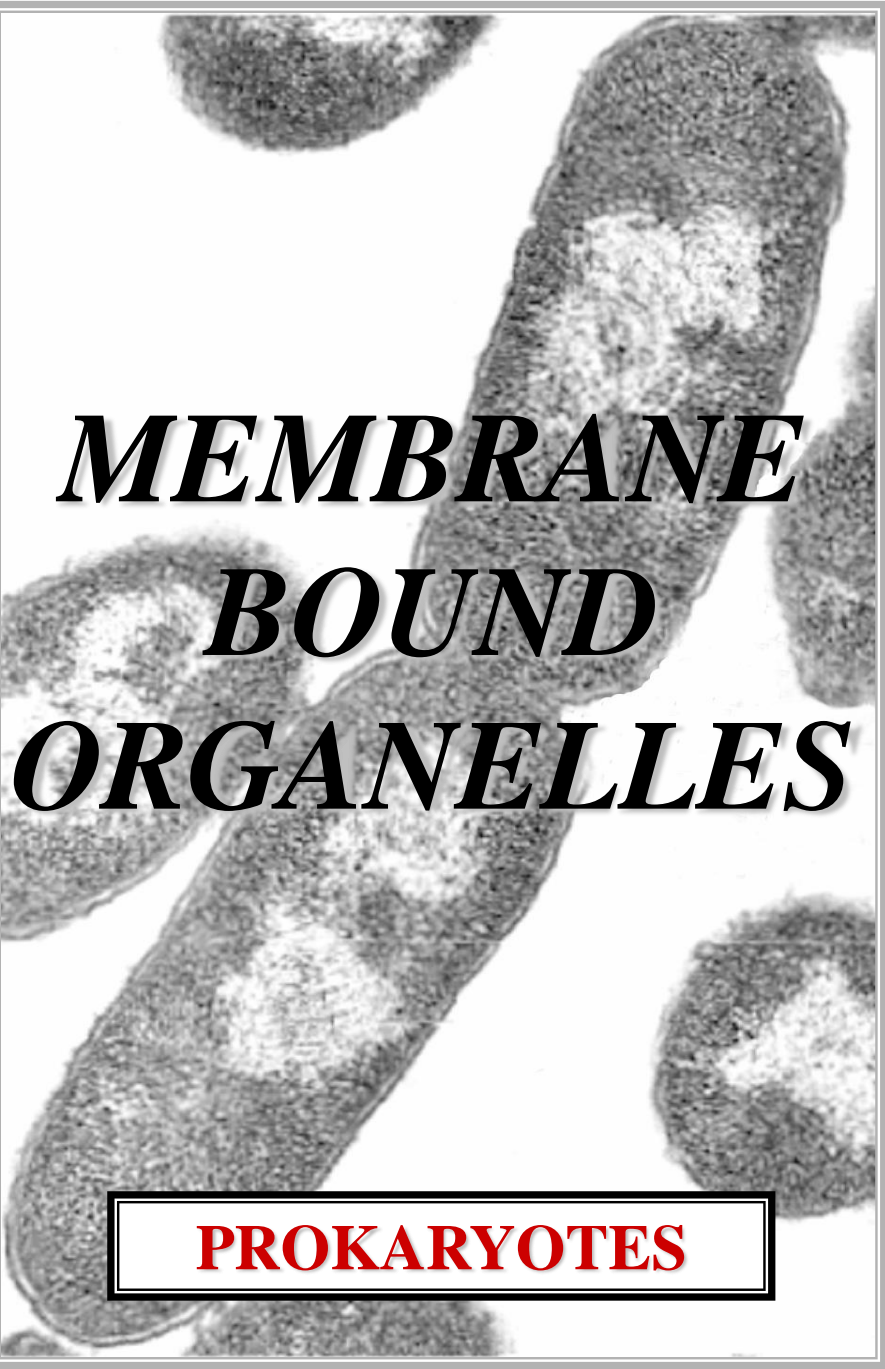


***COMPLEX
CYTOLOGY***

EUKARYOTES

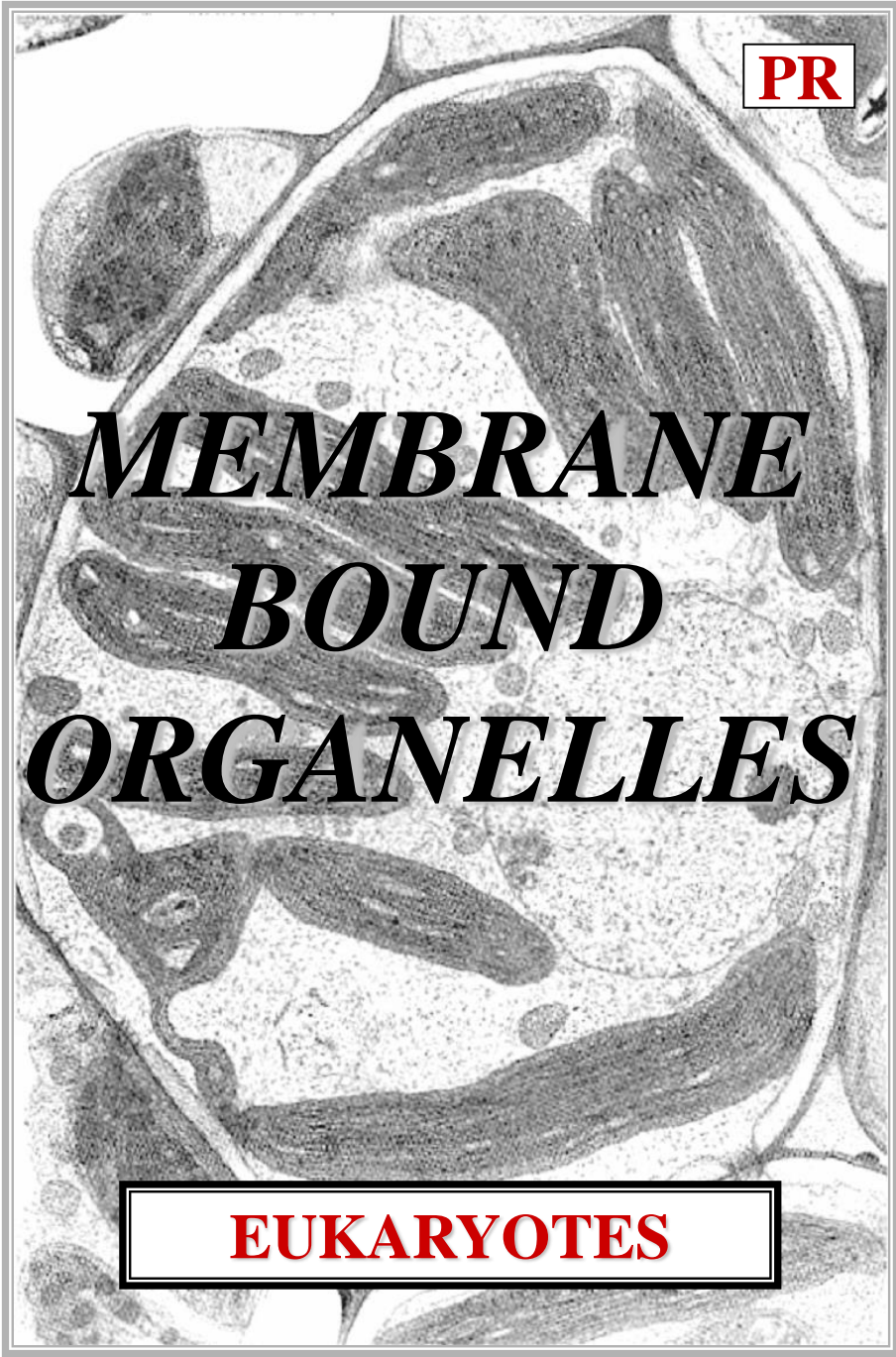
**PROKARYOTE
CYTOLOGY
VS
EUKARYOTE
CYTOLOGY
SUMMARY**





***MEMBRANE
BOUND
ORGANELLES***

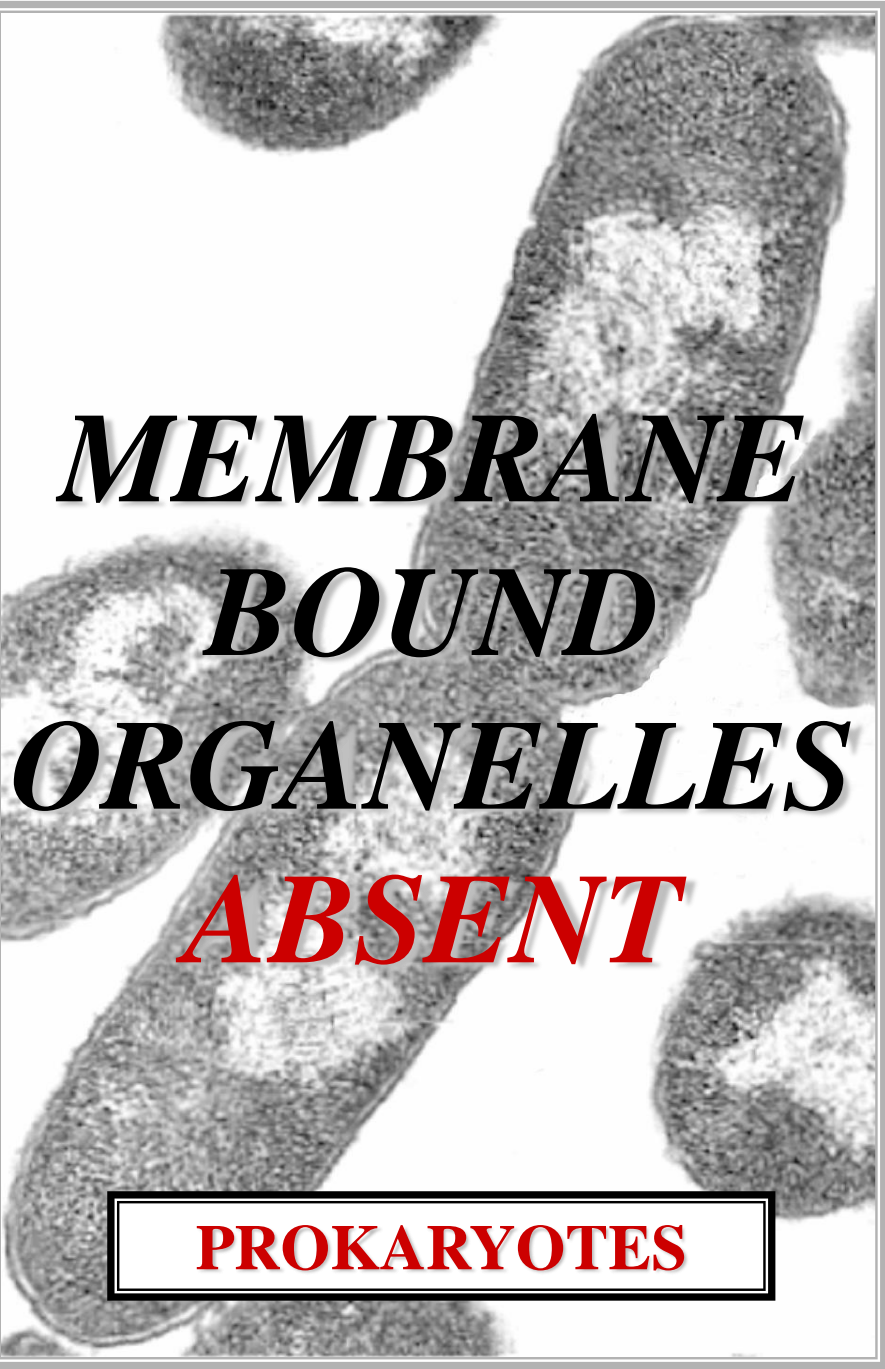
PROKARYOTES



PR

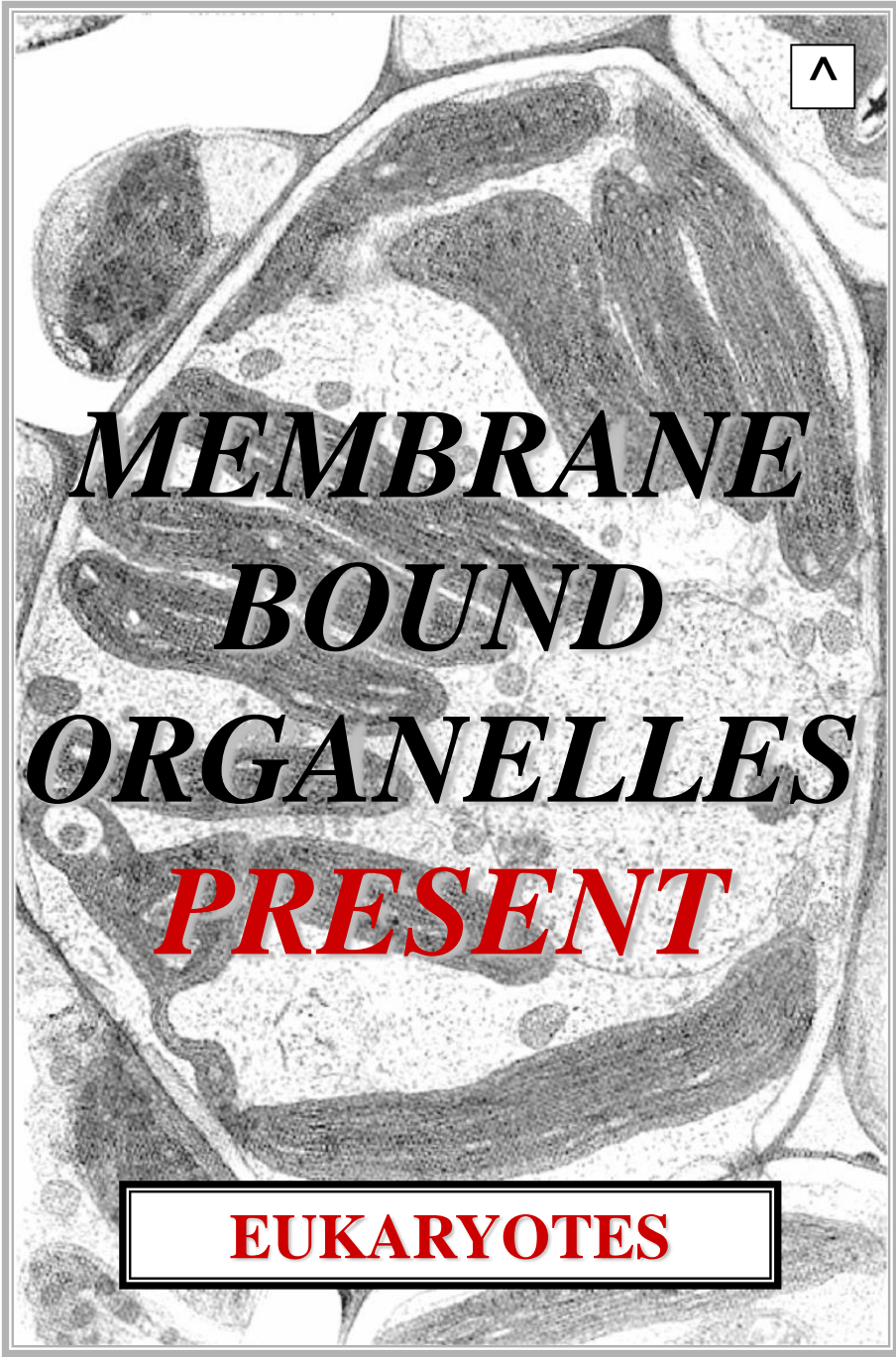
***MEMBRANE
BOUND
ORGANELLES***

EUKARYOTES



***MEMBRANE
BOUND
ORGANELLES
ABSENT***

PROKARYOTES



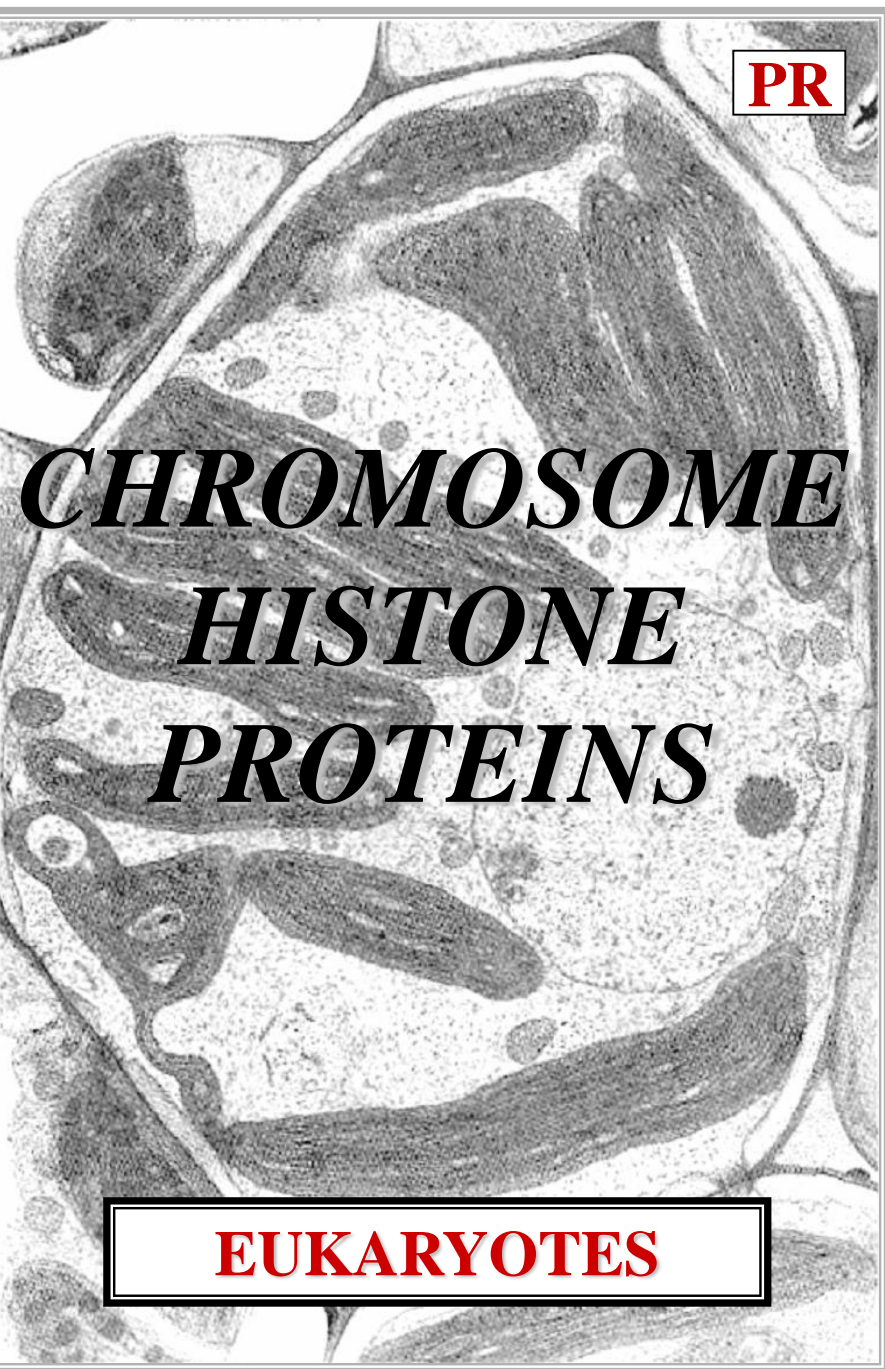
***MEMBRANE
BOUND
ORGANELLES
PRESENT***

EUKARYOTES

An electron micrograph showing a single, large, circular, and highly condensed chromosome from a prokaryote. The chromosome has a distinct, granular texture and is surrounded by a thin membrane. The background is light gray with some smaller, less distinct structures.

CHROMOSOME
HISTONE
PROTEINS

PROKARYOTES

An electron micrograph of a eukaryotic nucleus. The nucleus is large and contains multiple, dark, thread-like chromosomes. The nuclear envelope is visible as a double membrane with nuclear pores. The nucleolus is also present. The background shows the cytoplasm with various organelles.

CHROMOSOME
HISTONE
PROTEINS

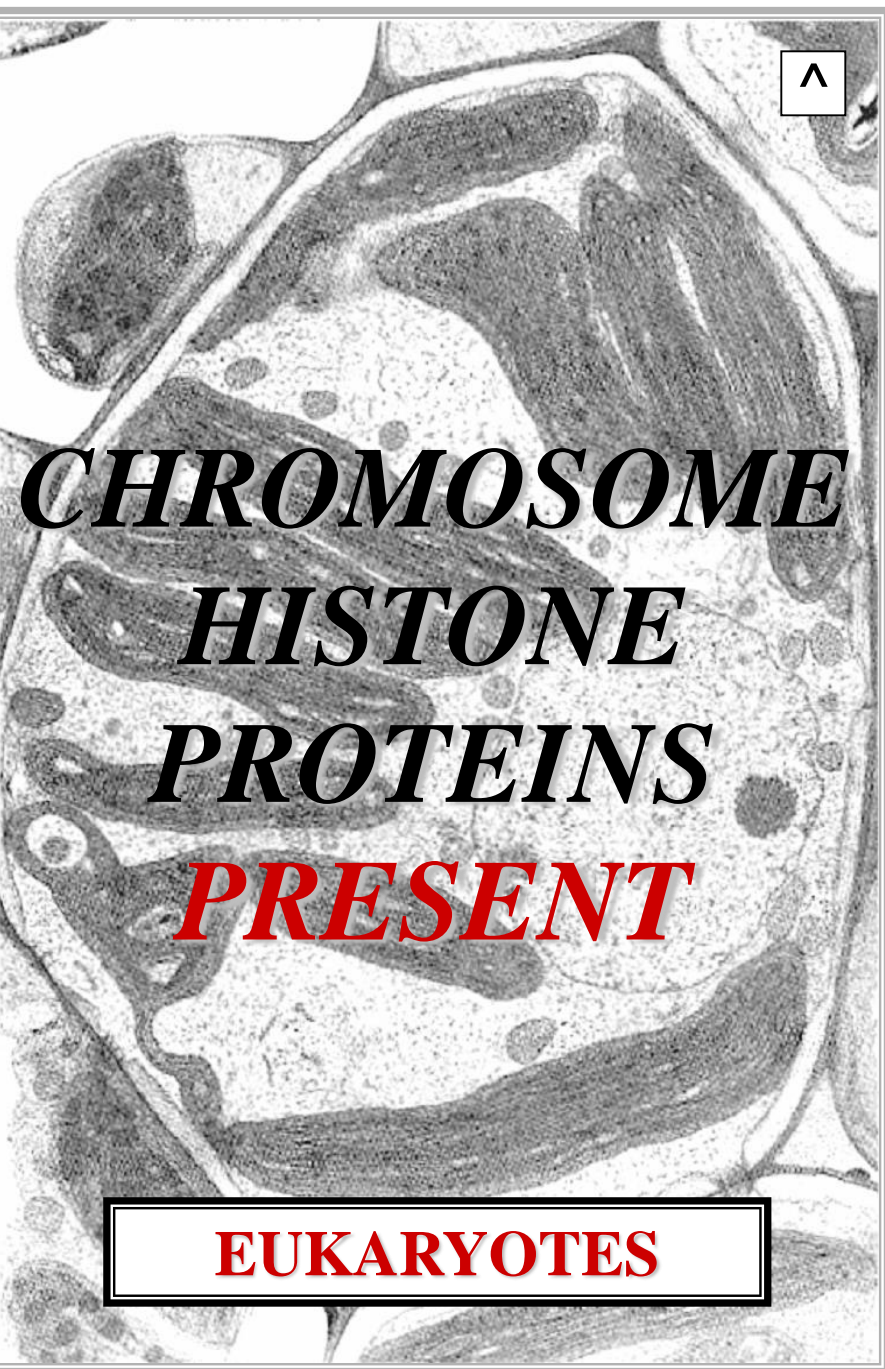
EUKARYOTES

PR



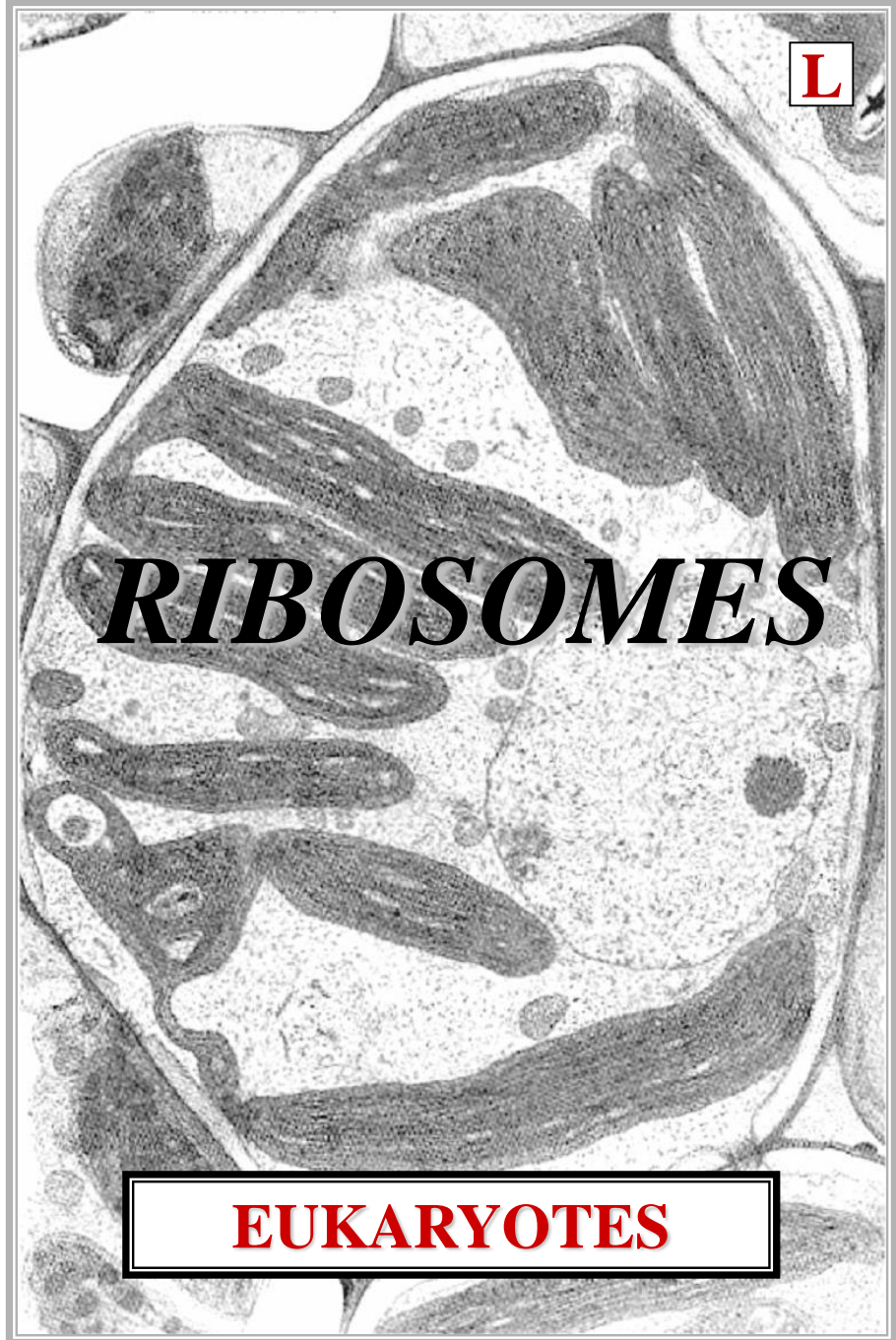
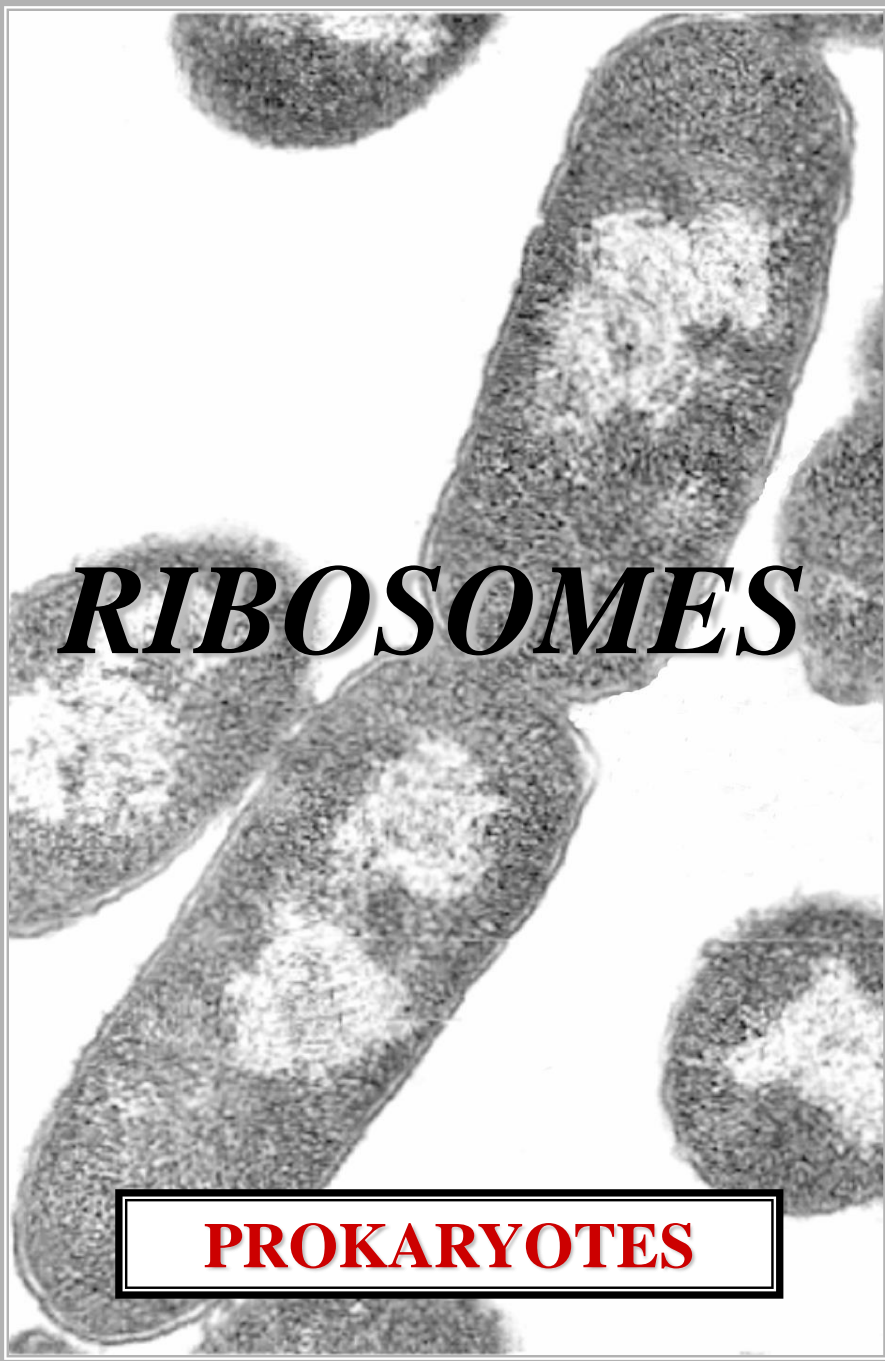
CHROMOSOME
HISTONE
PROTEINS
ABSENT

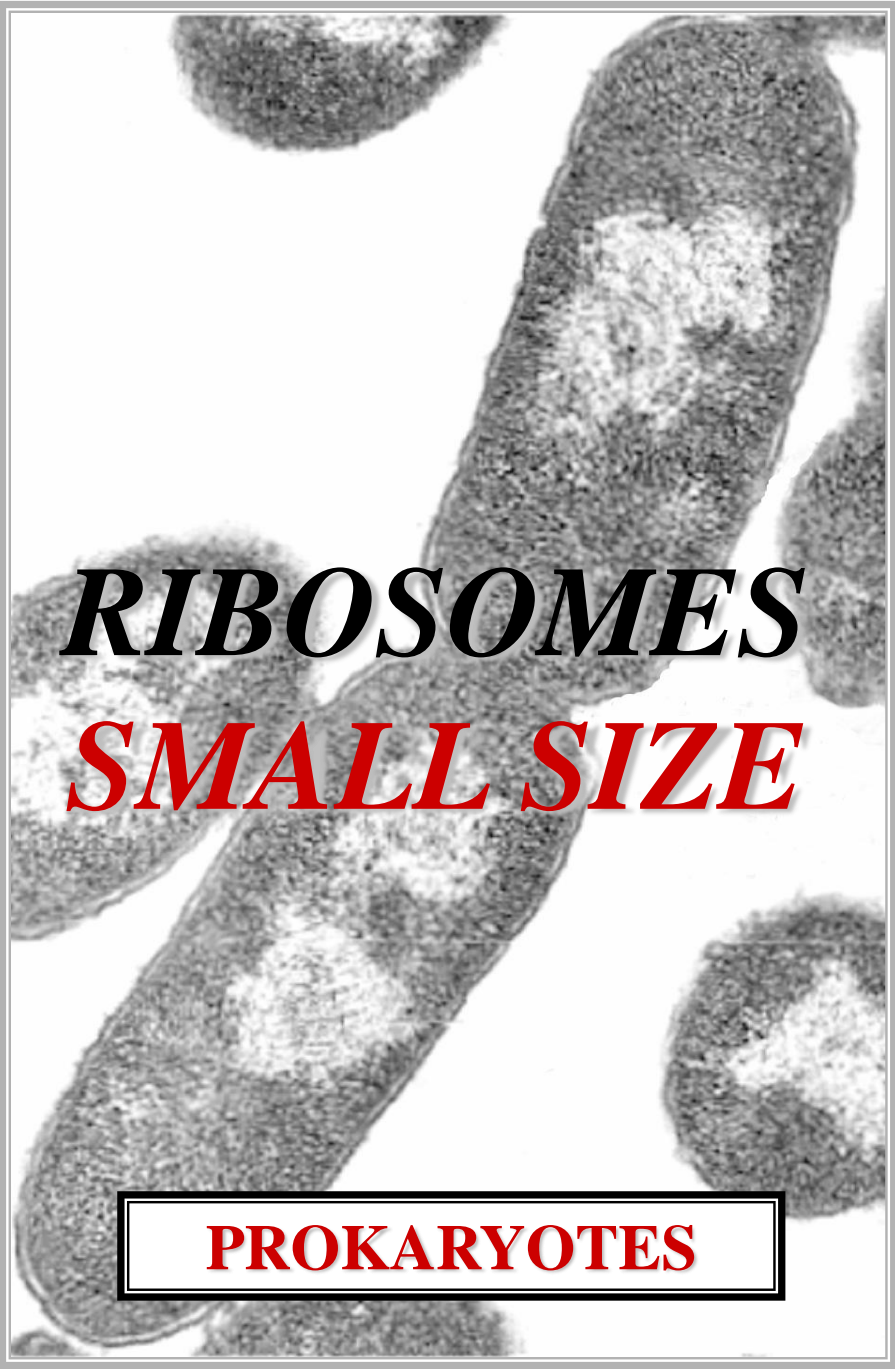
PROKARYOTES



CHROMOSOME
HISTONE
PROTEINS
PRESENT

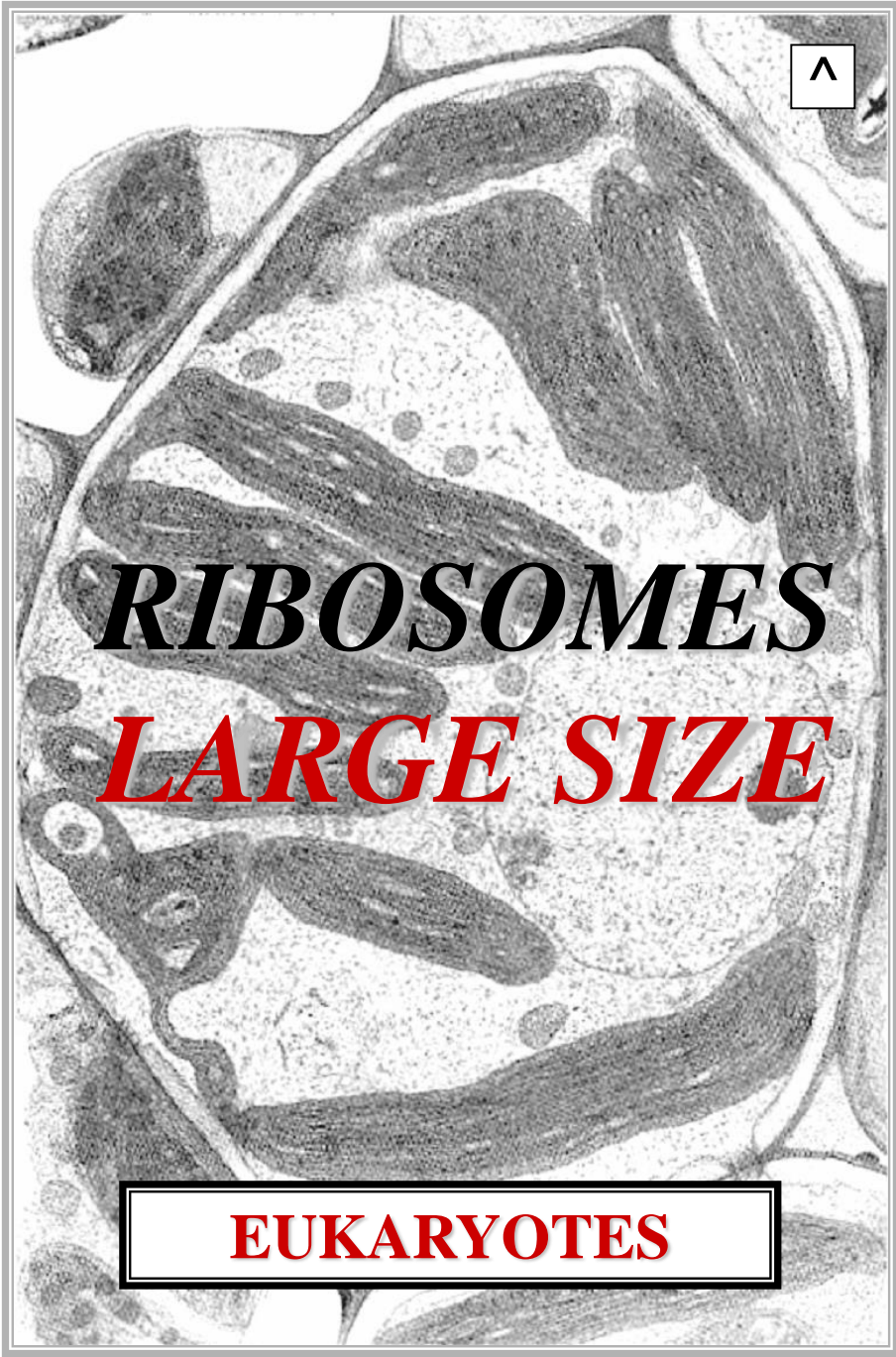
EUKARYOTES





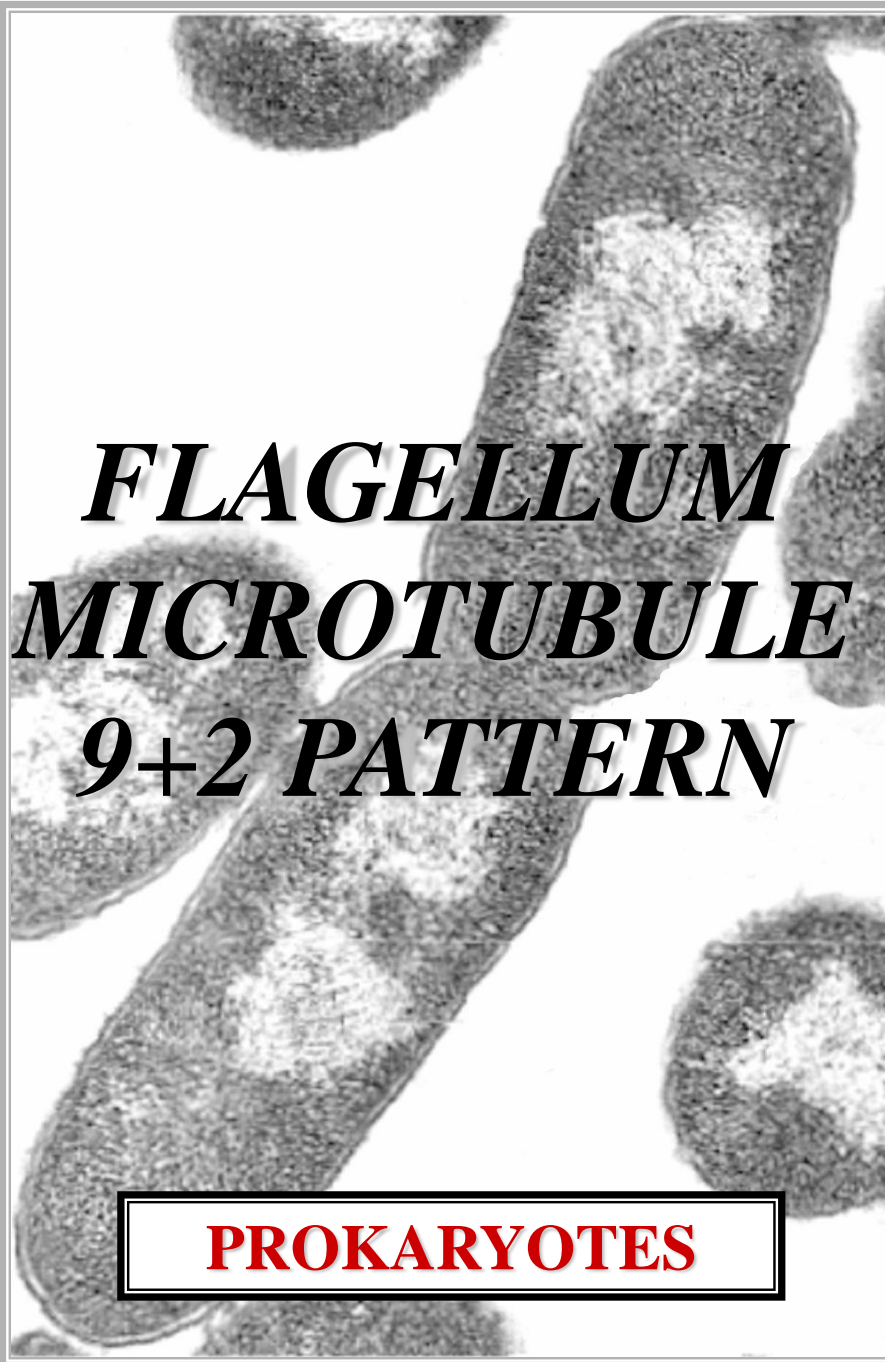
RIBOSOMES
SMALL SIZE

PROKARYOTES



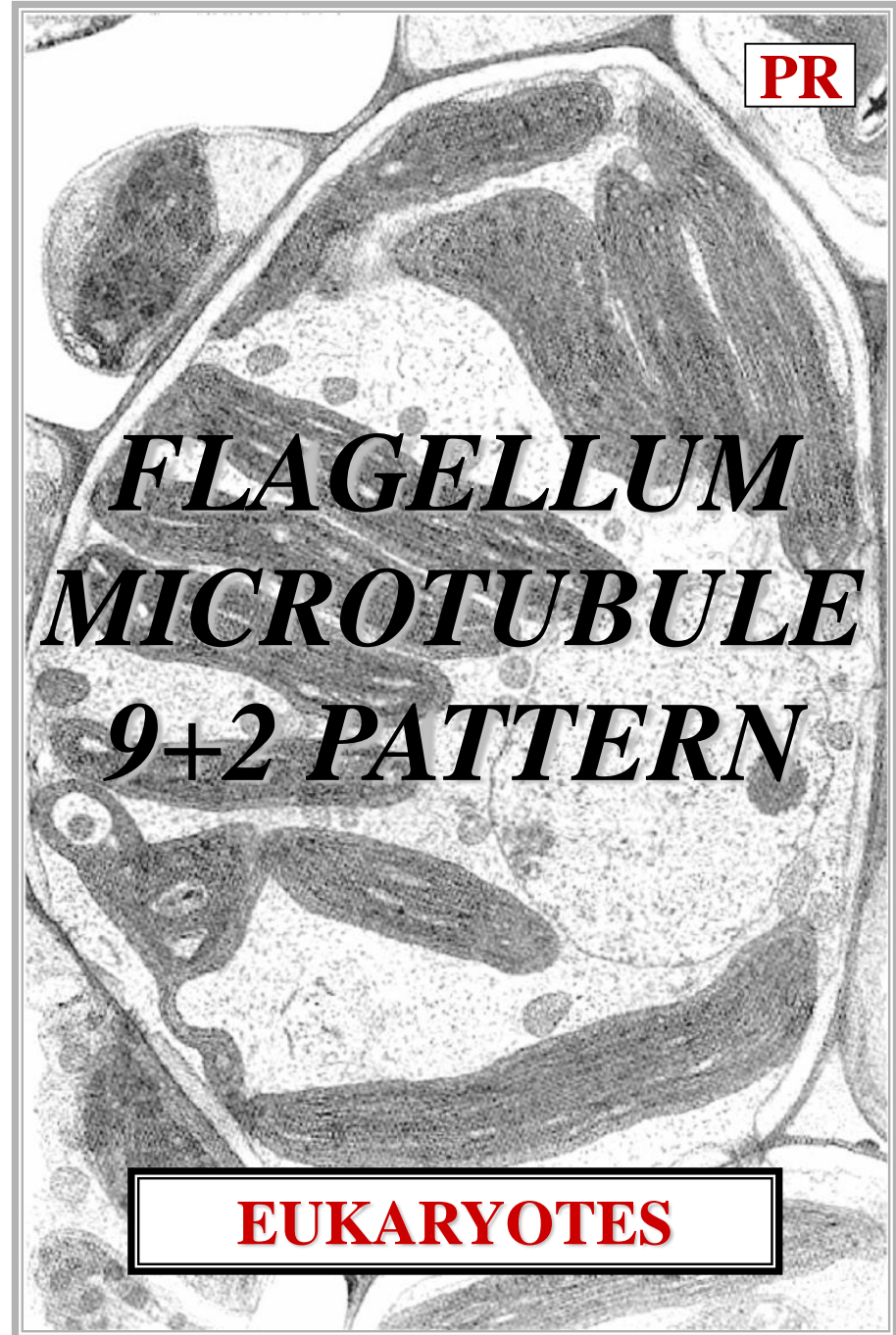
RIBOSOMES
LARGE SIZE

EUKARYOTES



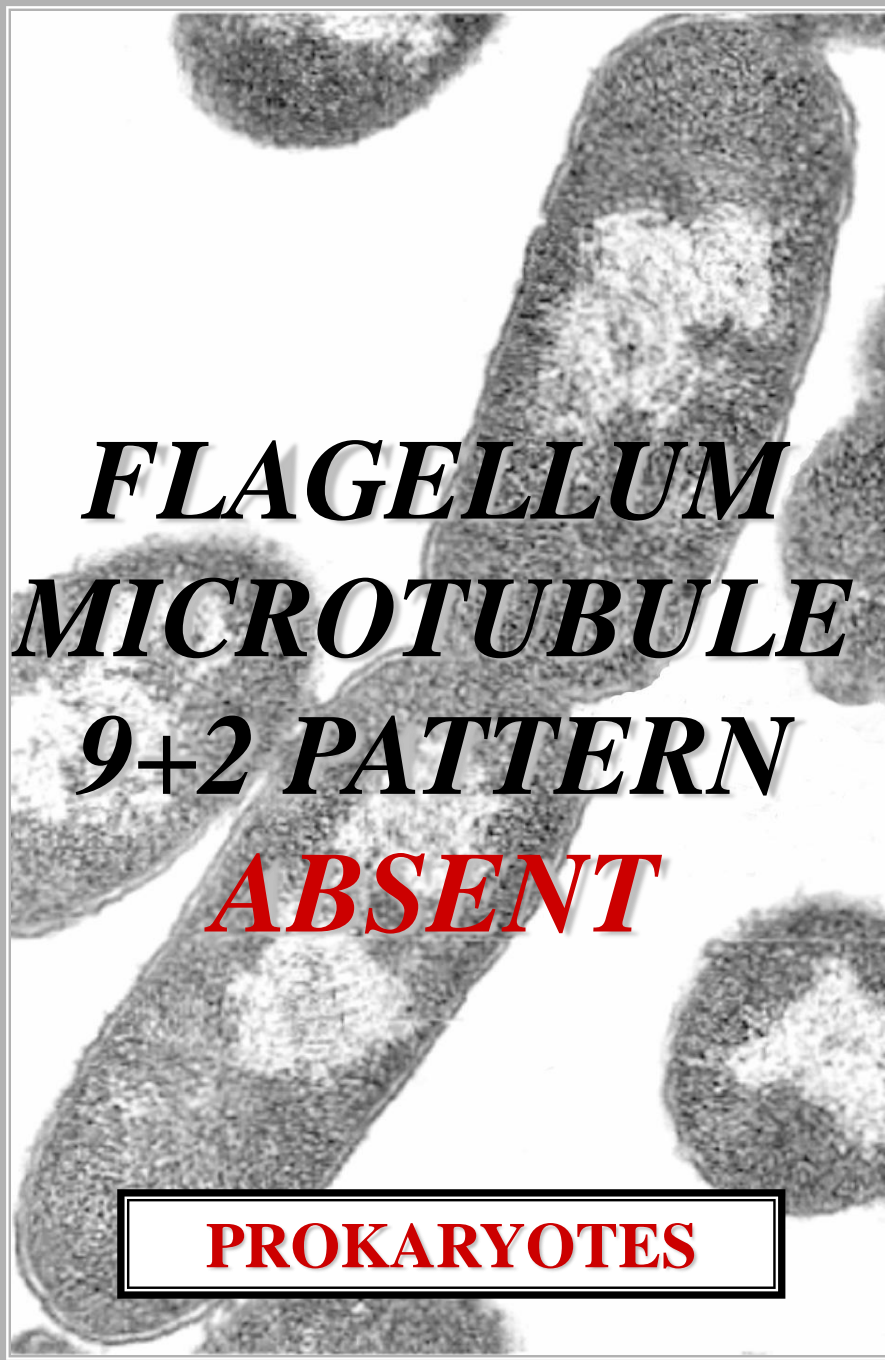
***FLAGELLUM
MICROTUBULE
9+2 PATTERN***

PROKARYOTES



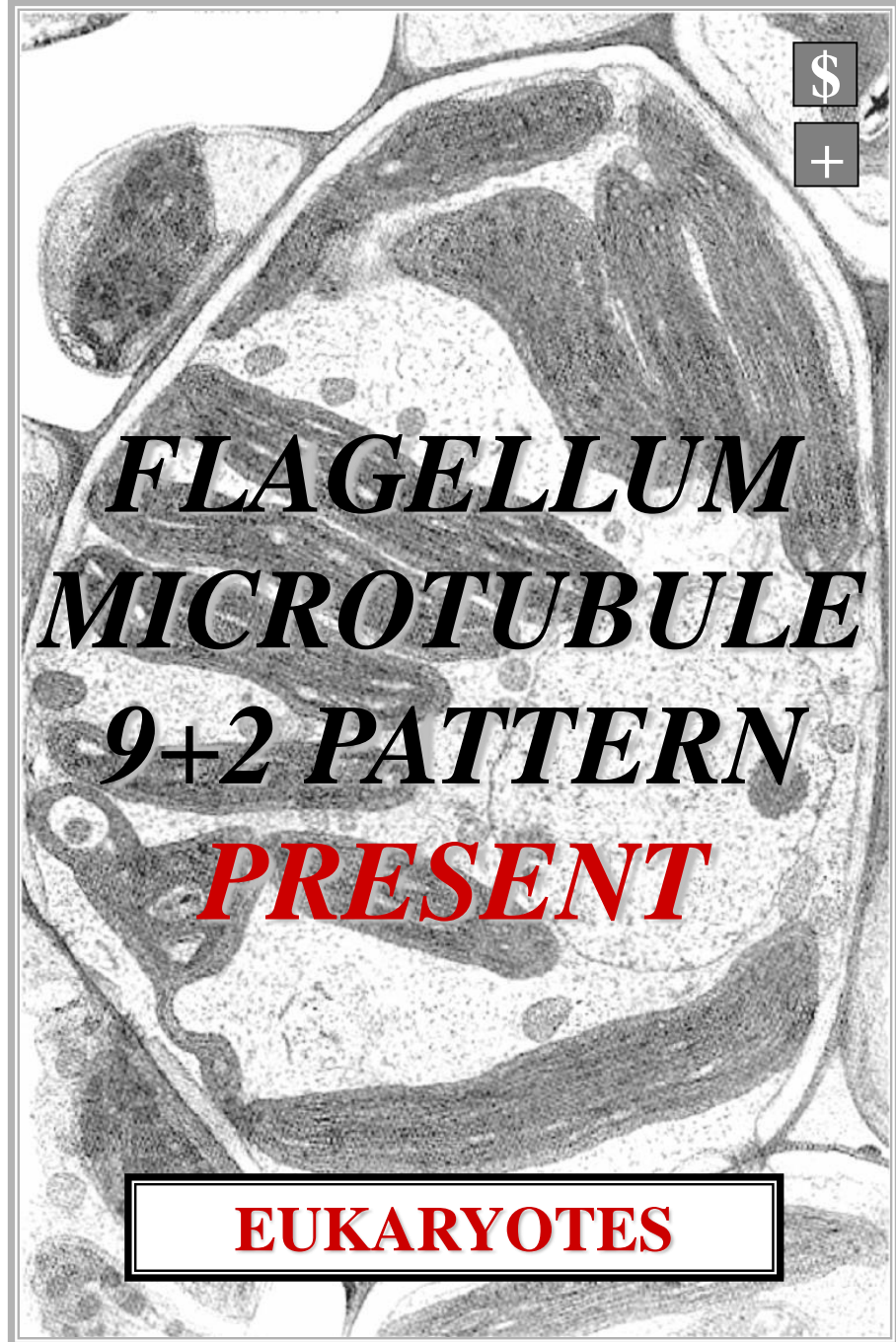
***FLAGELLUM
MICROTUBULE
9+2 PATTERN***

EUKARYOTES



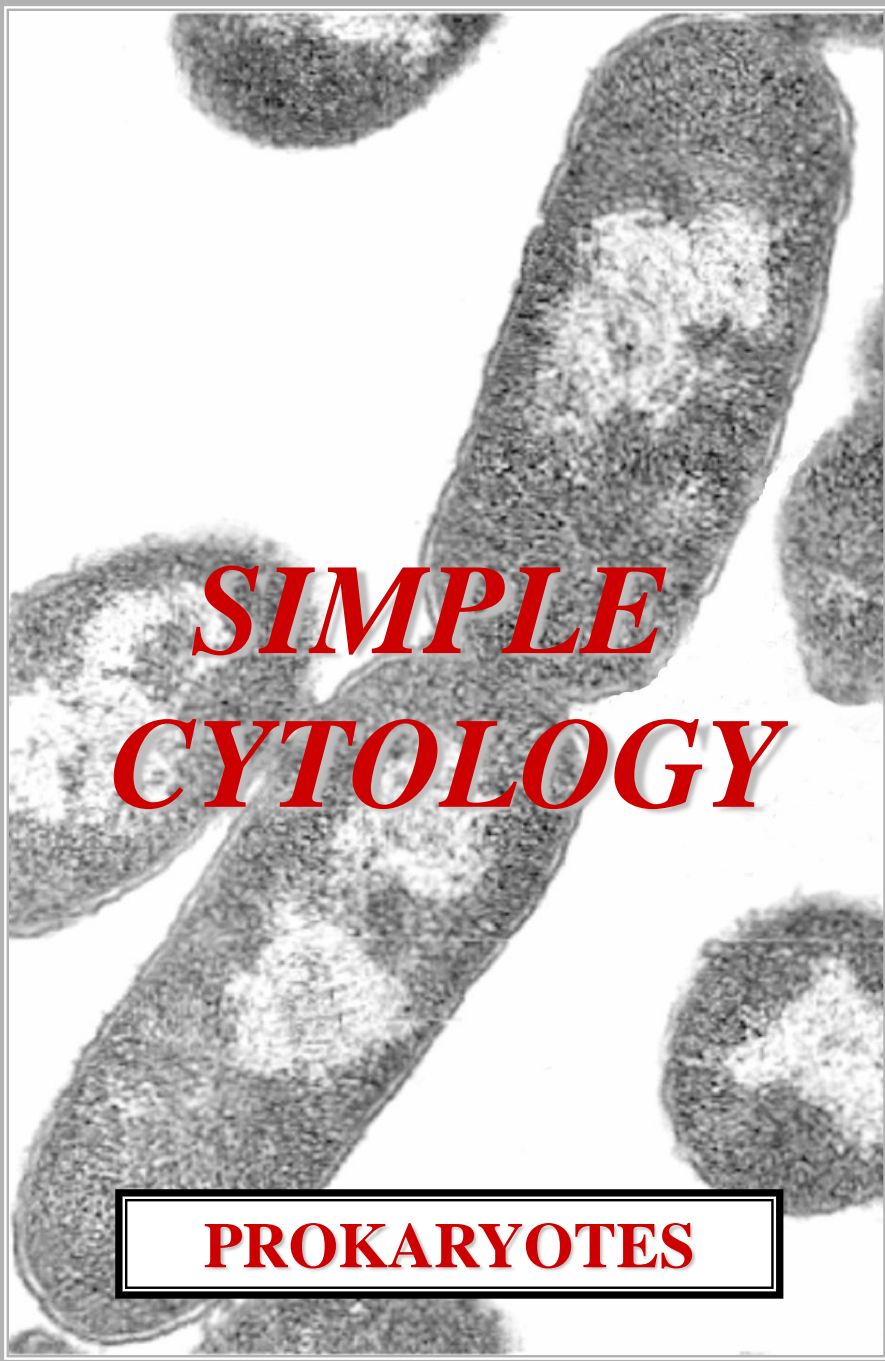
***FLAGELLUM
MICROTUBULE
9+2 PATTERN
ABSENT***

PROKARYOTES



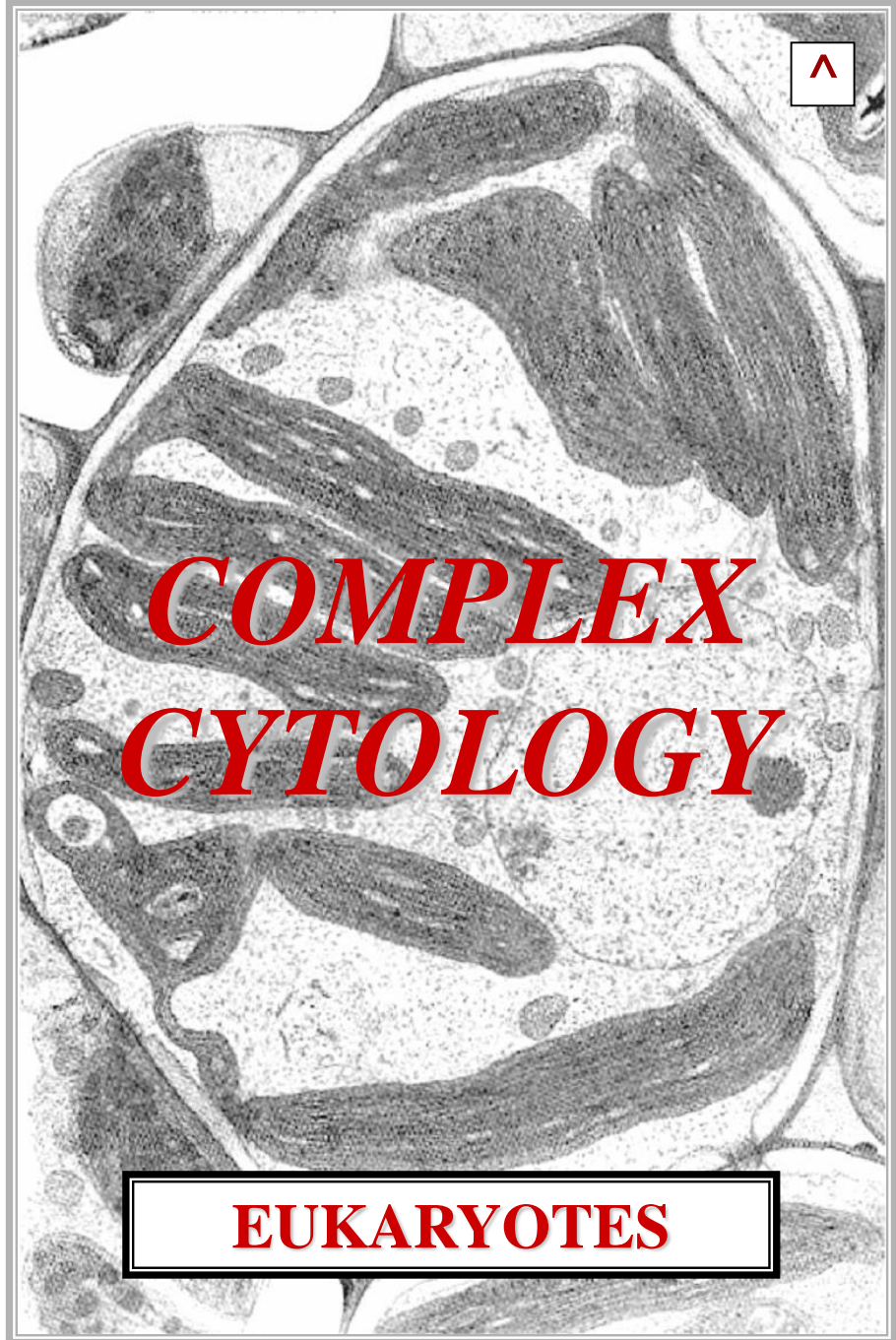
***FLAGELLUM
MICROTUBULE
9+2 PATTERN
PRESENT***

EUKARYOTES



***SIMPLE
CYTOLOGY***

PROKARYOTES



***COMPLEX
CYTOLOGY***

EUKARYOTES

CHAPTER 07

MEMBRANE

STRUCTURE

&

MEMBRANE

FUNCTION