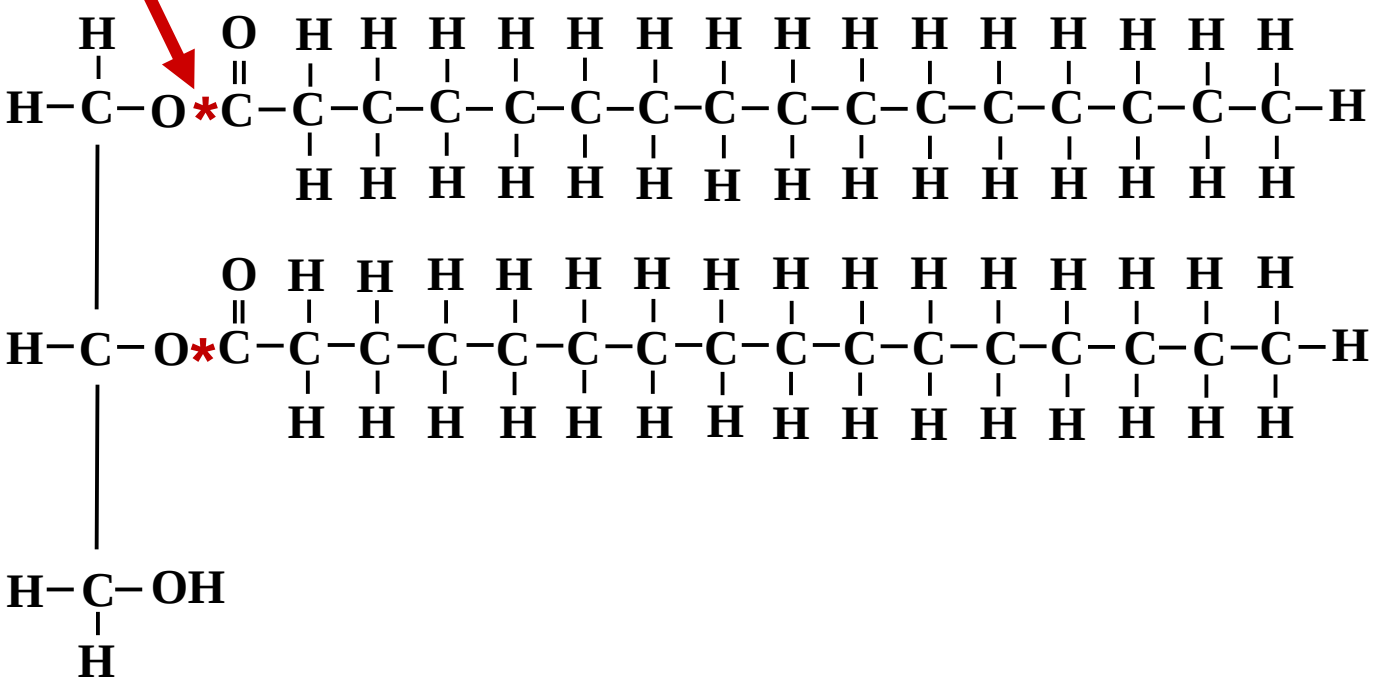
FATS/OILS
ESTER BOND

ESTER BOND



FATTY ACID

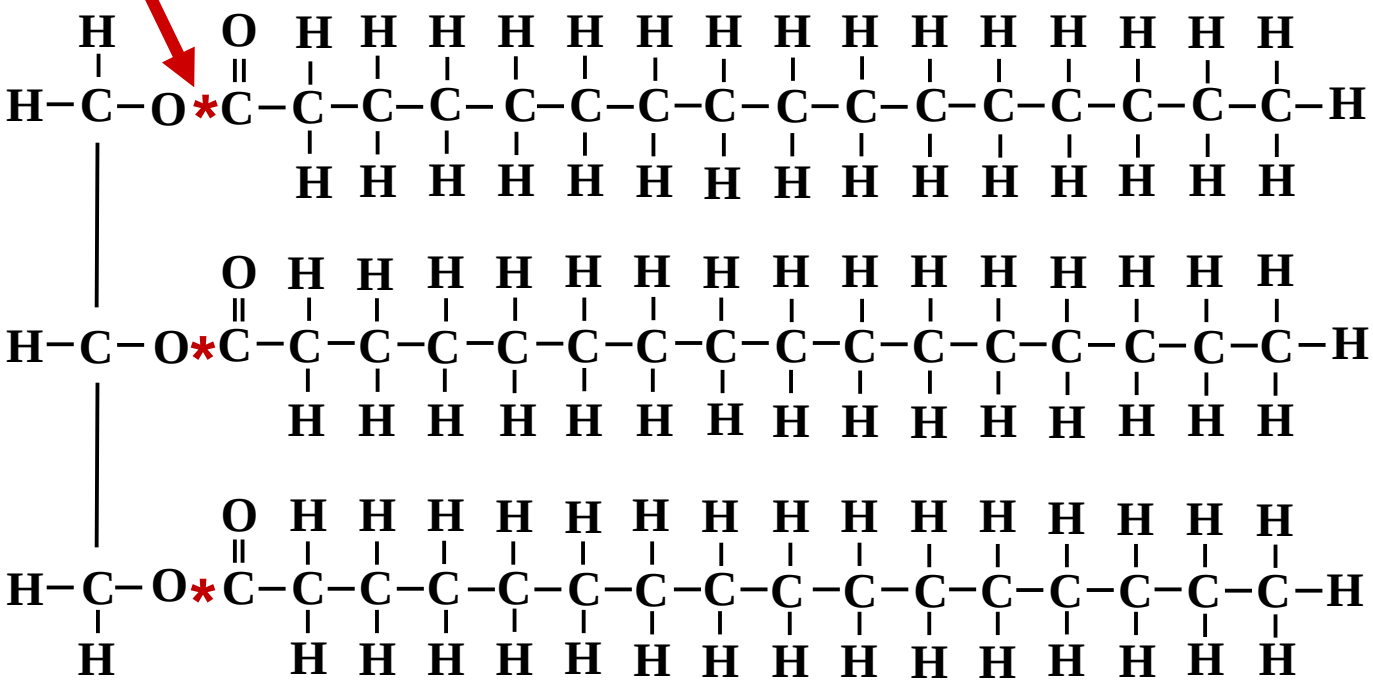
FATTY ACID

GLYCEROL

CONDENSATION REACTION

FATS/OILS STRUCTURE

ESTER BOND



FATTY ACID

FATTY ACID

FATTY ACID

GLYCEROL

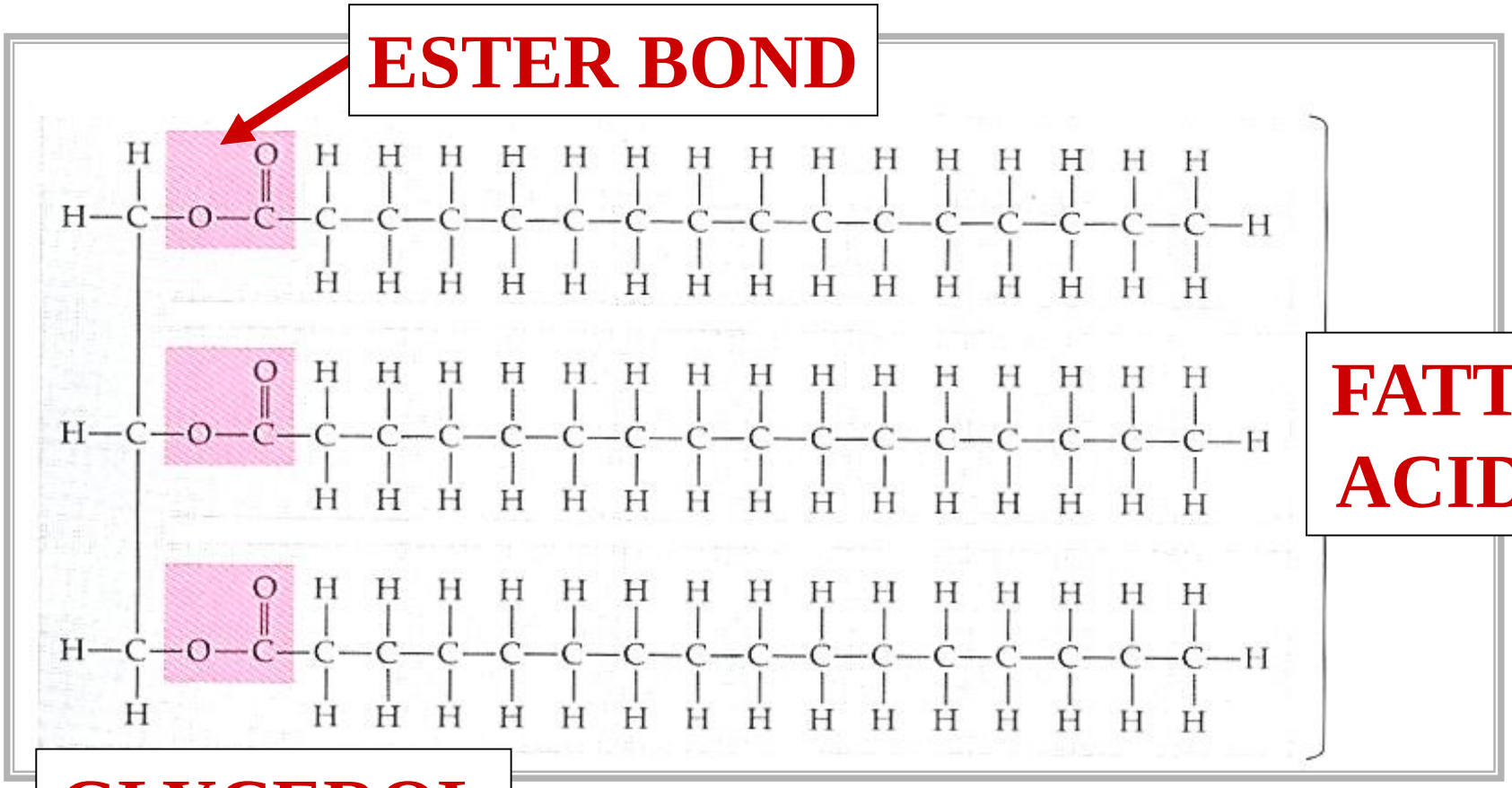
CONDENSATION REACTION

FATS VS OILS DIET

FATS

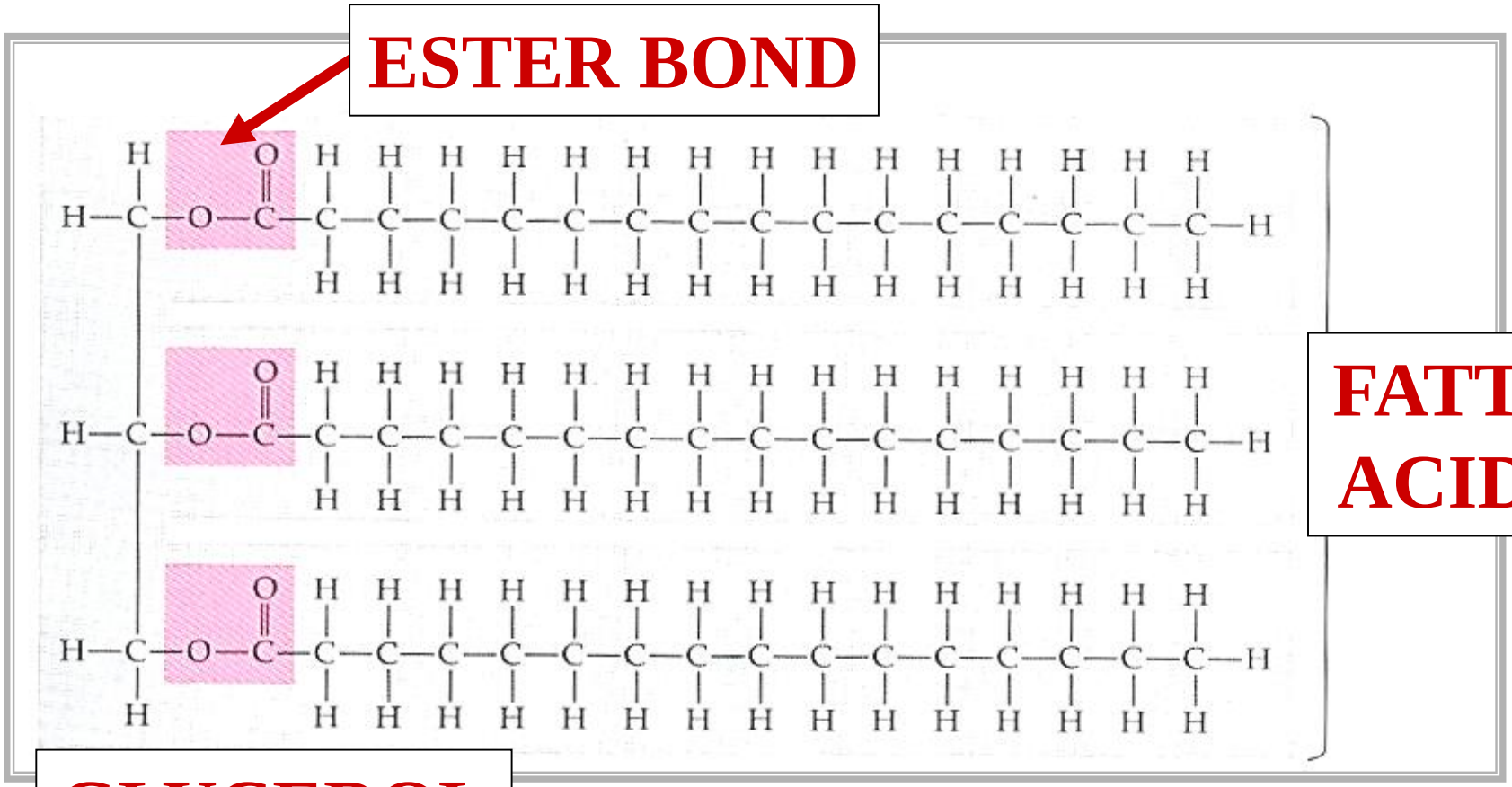
FATS/OILS STRUCTURE

¿
S



FAT

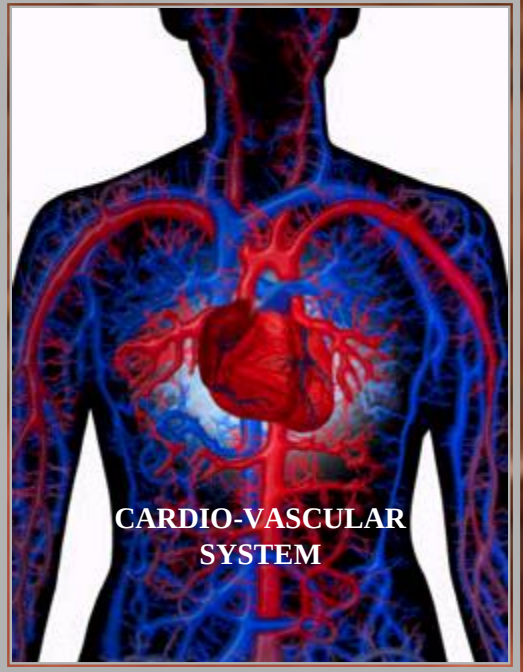
FATS
STRUCTURE



SATURATED FAT

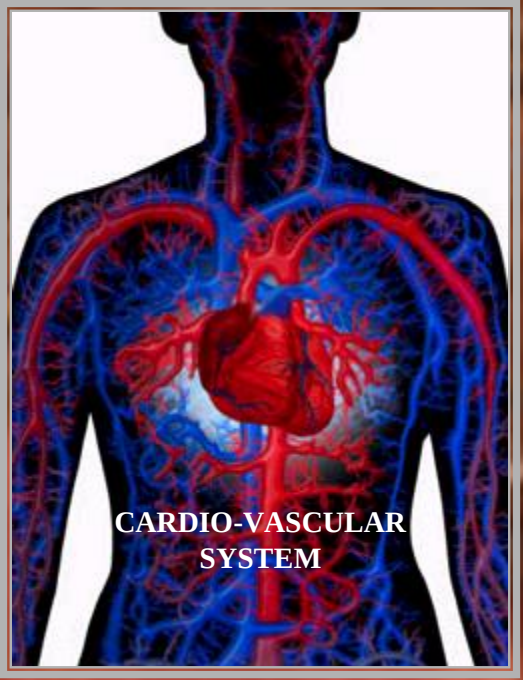
SATURATED FATS

ANIMAL TISSUES



SATURATED FATS

UNHEALTHY DIET

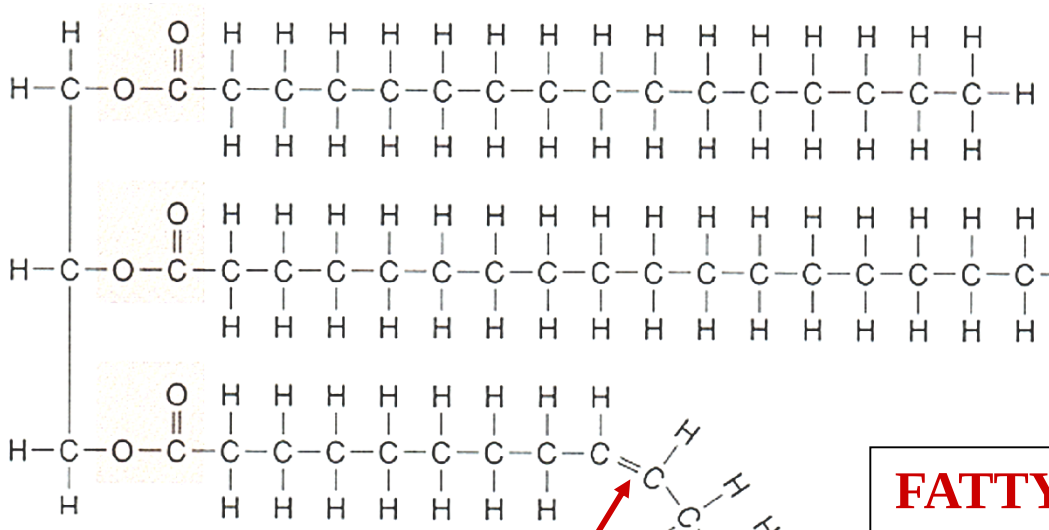



SATURATED FATS
UNHEALTHY DIET
Nutrition Facts
Serving Size: 1 unit (from 1 lb chkn) (110g)
Amount Per Serving
Calories 314 Calories from Fat 167
% Daily Value*
Total Fat 18.6 g 29%
Saturated Fat 5.04 g 25%
Trans Fat
Cholesterol 101.2 mg 34%
Sodium 97.9 mg 4%
Potassium 253 mg 7%
Total Carbohydrate 4.49 g 1%
Dietary Fiber 0 g 0%
Sugars 0 g
Sugar Alcohols
Protein 29.94 g
Vitamin A 114.4 IU 2%
Vitamin C 0 mg 0%
Calcium 18.7 mg 2%
Iron 1.65 mg 9%

OILS

FATS/OILS STRUCTURE

ESTER BOND



FATTY ACID

FATTY ACID

FATTY ACID

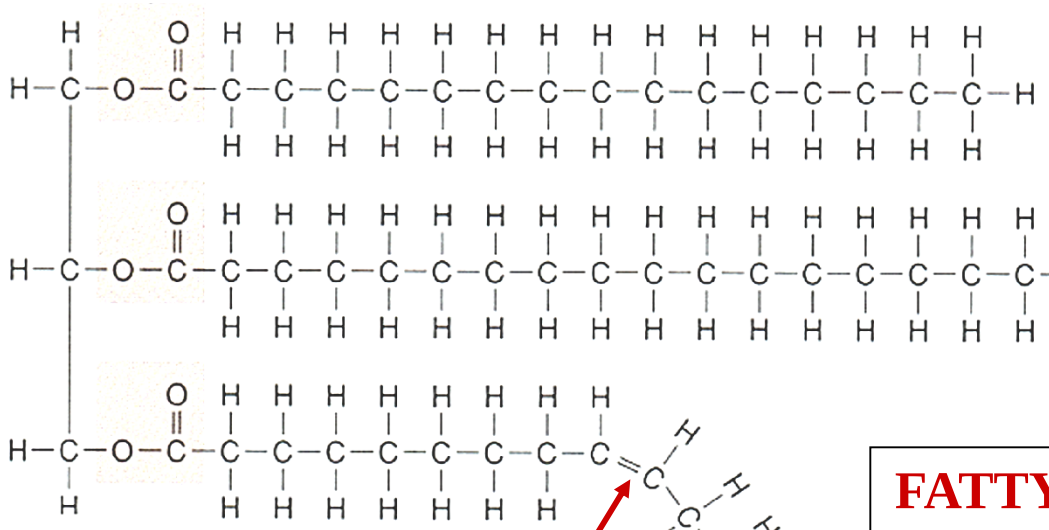
GLYCEROL

DOUBLE BOND

OIL

FATS/OILS STRUCTURE

ESTER BOND



FATTY ACID

FATTY ACID

FATTY ACID

GLYCEROL

DOUBLE BOND

UNSATURATED OIL

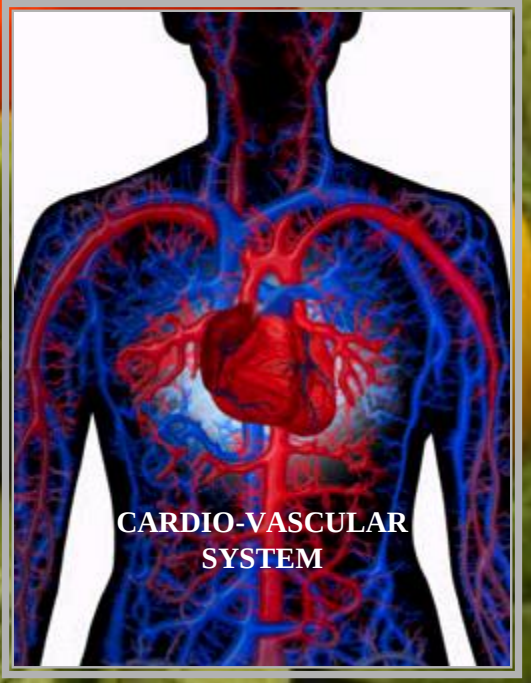
H

UNSATURATED OILS

PLANT TISSUES

UNSATURATED OILS

HEALTHY DIET



UNSATURATED OILS

HEALTHY DIET

P

PHOSPHOLIPIDS

PHOSPHOLIPID

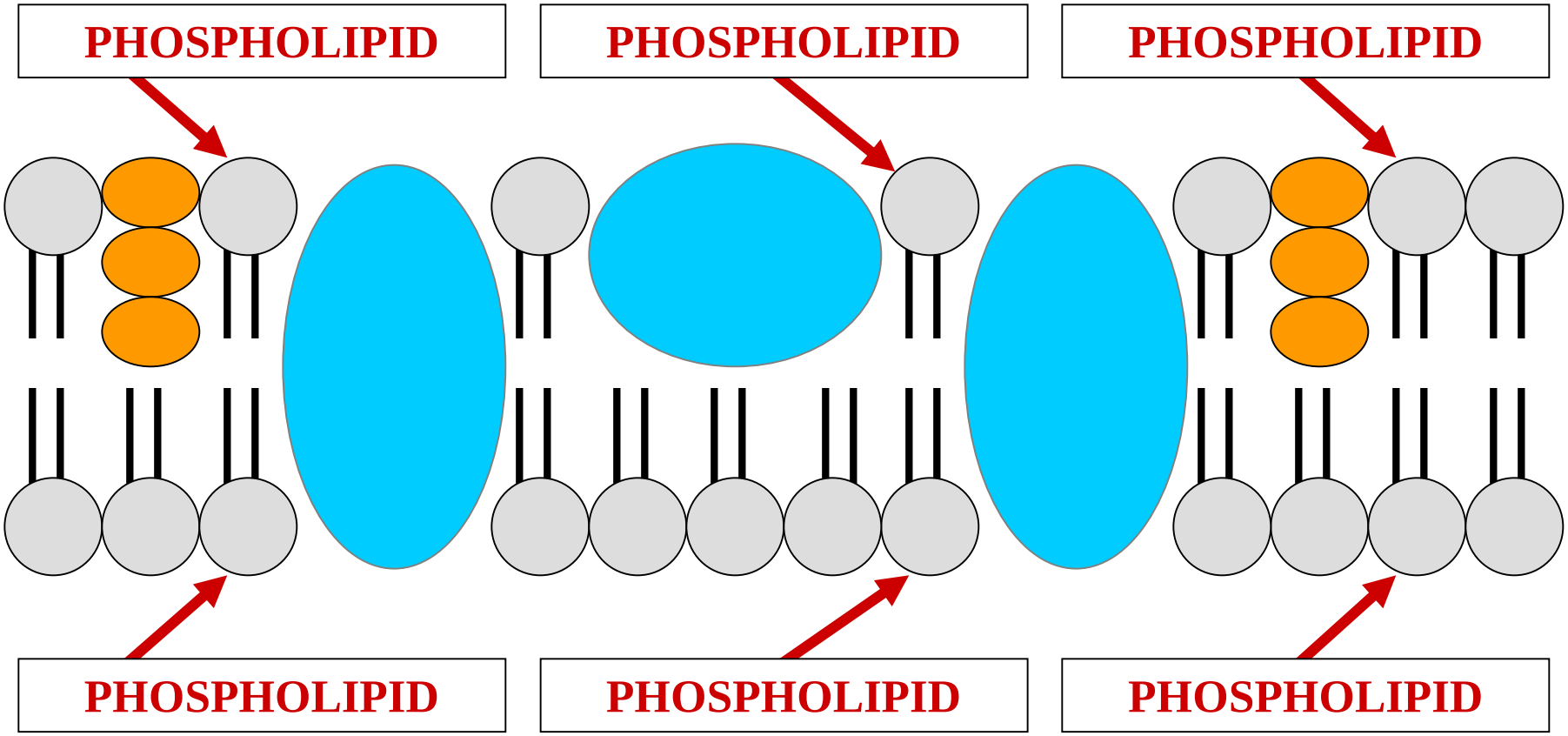
PHOSPHOLIPID

GLYCEROL
1 PHOSPHATE GROUP
AND
2 FATTY ACIDS

PHOSPHOLIPID

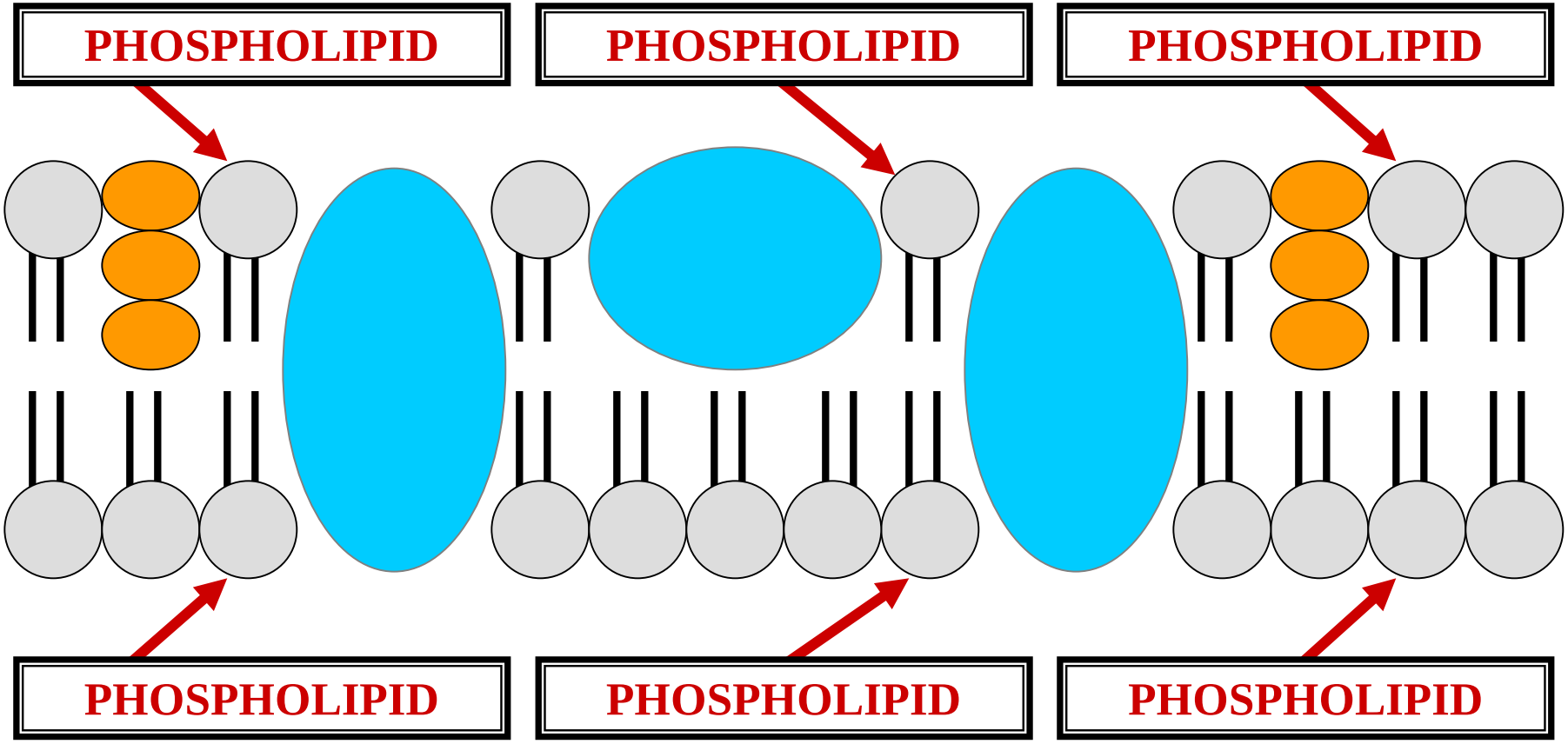
PHOSPHOLIPIDS FUNCTION

BIO-MEMBRANE STRUCTURE



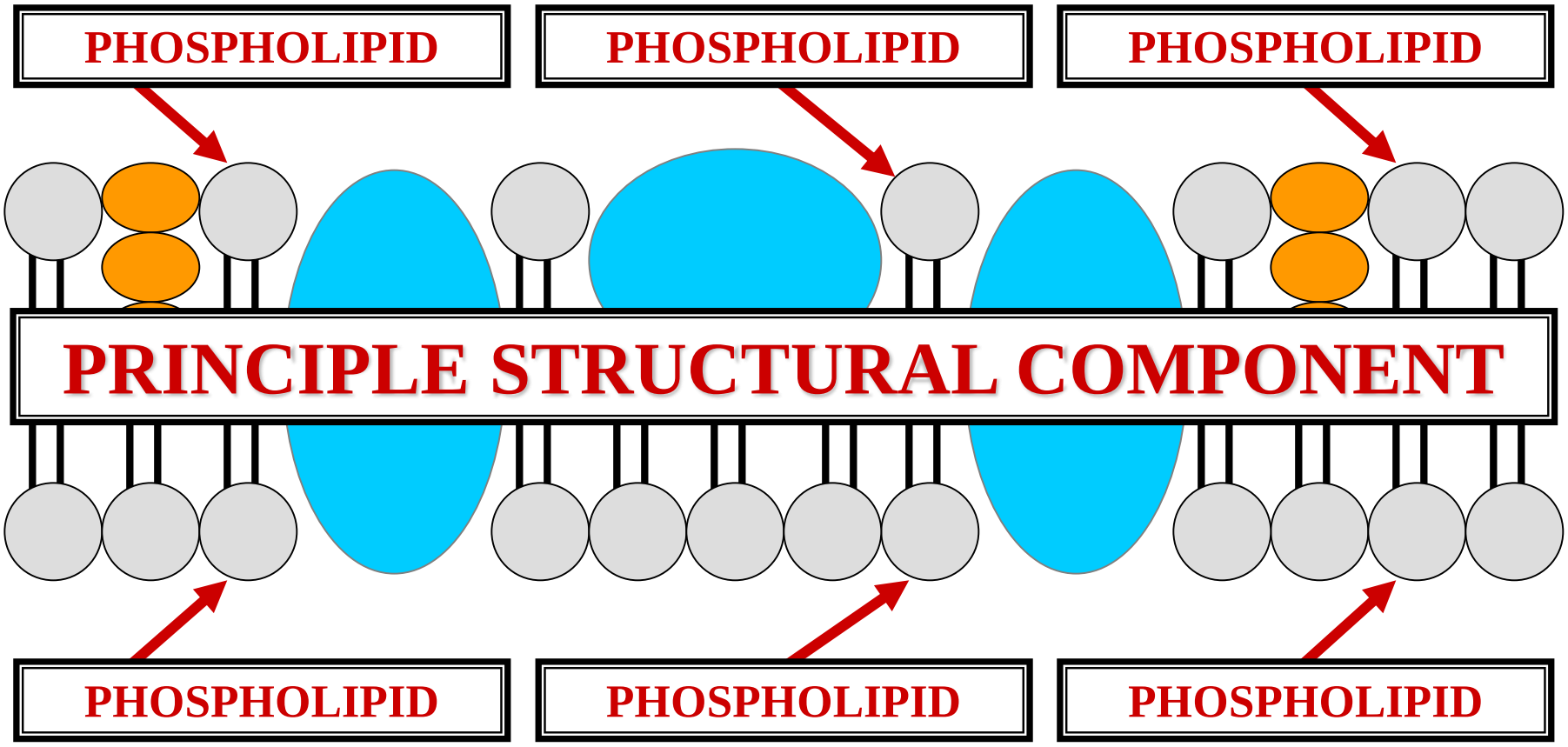
BIO-MEMBRANE STRUCTURE

BIO-MEMBRANE STRUCTURE



BIO-MEMBRANE STRUCTURE

BIO-MEMBRANE STRUCTURE



BIO-MEMBRANE STRUCTURE

PHOSPHOLIPID STRUCTURE

PHOSPHOLIPID STRUCTURAL COMPONENTS

PHOSPHOLIPID STRUCTURAL COMPONENTS

1 GLYCEROL

PHOSPHOLIPID STRUCTURAL COMPONENTS

PHOSPHOLIPID STRUCTURAL COMPONENTS

1 GLYCEROL
1 PHOSPHATE GROUP

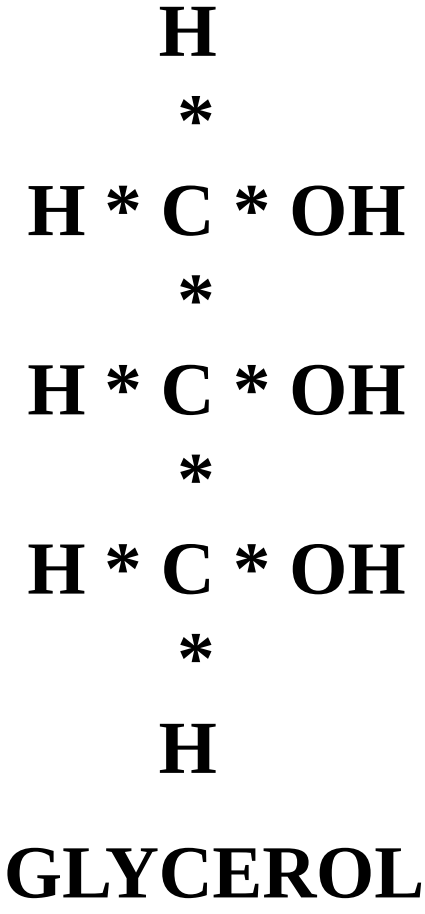
PHOSPHOLIPID STRUCTURAL COMPONENTS

PHOSPHOLIPID STRUCTURAL COMPONENTS

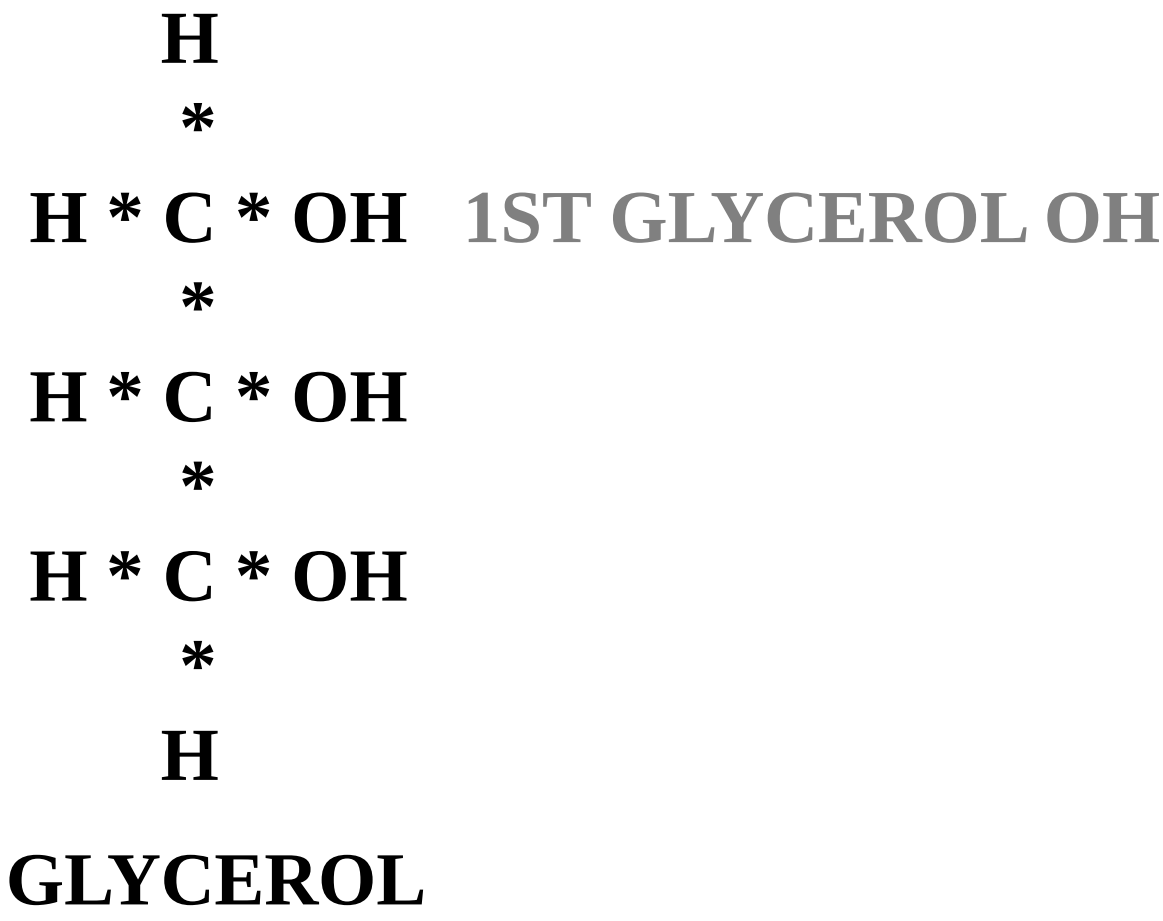
1 GLYCEROL
1 PHOSPHATE GROUP
2 FATTY ACIDS

PHOSPHOLIPID STRUCTURAL COMPONENTS

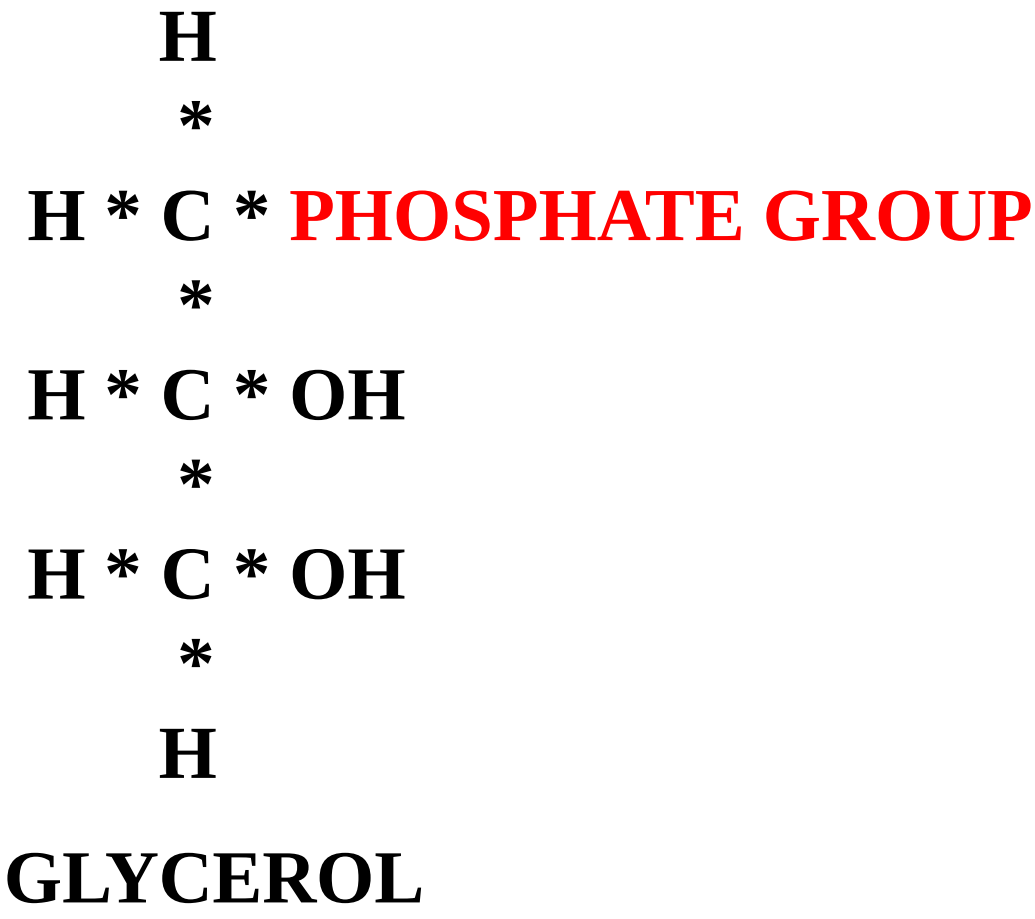
PHOSPHOLIPID STRUCTURE



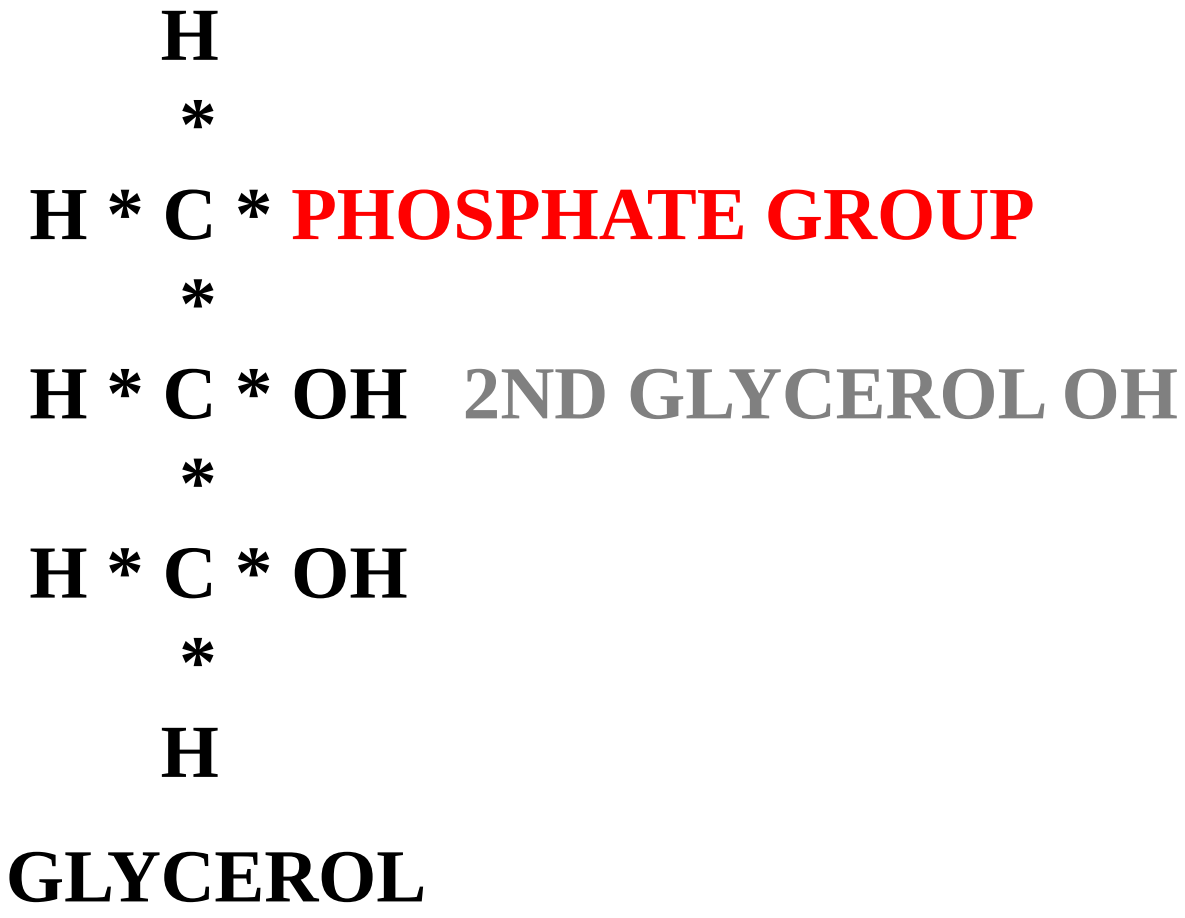
PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID STRUCTURE

H

*

H * C * PHOSPHATE GROUP

*

H * C * FATTY ACID

*

H * C * OH

*

H

GLYCEROL

PHOSPHOLIPID STRUCTURE

H

*

H * C * PHOSPHATE GROUP

*

H * C * FATTY ACID

*

H * C * OH 3RD GLYCEROL OH

*

H

GLYCEROL

PHOSPHOLIPID STRUCTURE

H

*

H * C * PHOSPHATE GROUP

*

H * C * FATTY ACID

*

H * C * FATTY ACID

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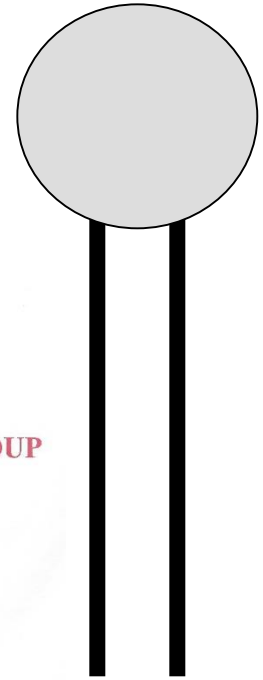
H

GLYCEROL

P

PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID STRUCTURE

H
*
H * C * PHOSPHATE GROUP
*
H * C * FATTY ACID
*
H * C * FATTY ACID
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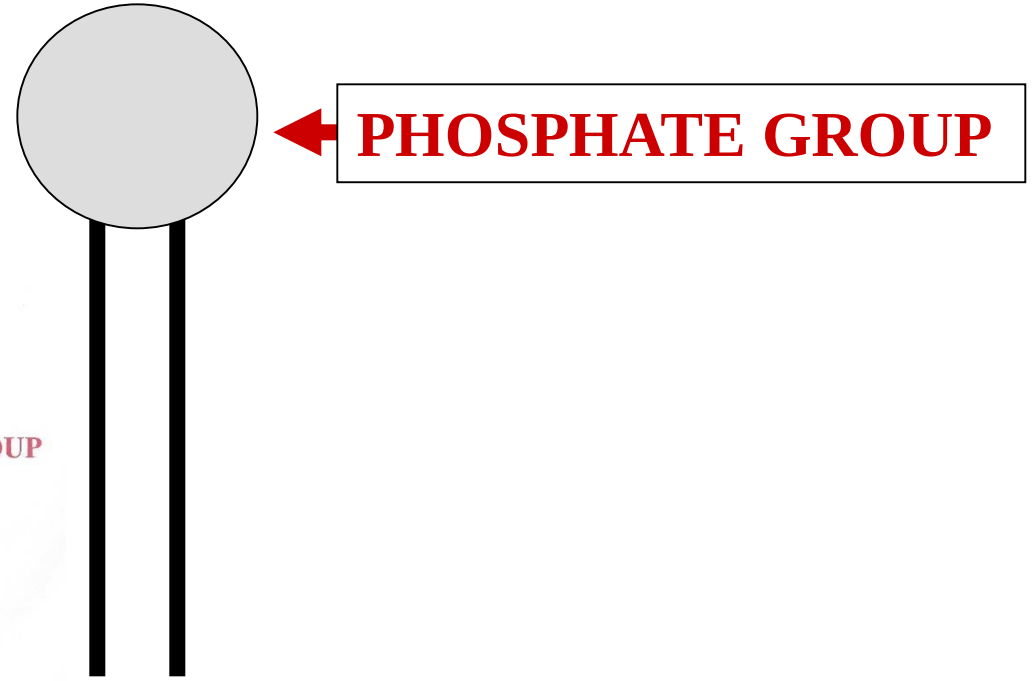
H

PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID STRUCTURE

H
*
H * C * PHOSPHATE GROUP
*
H * C * FATTY ACID
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H * C * FATTY ACID
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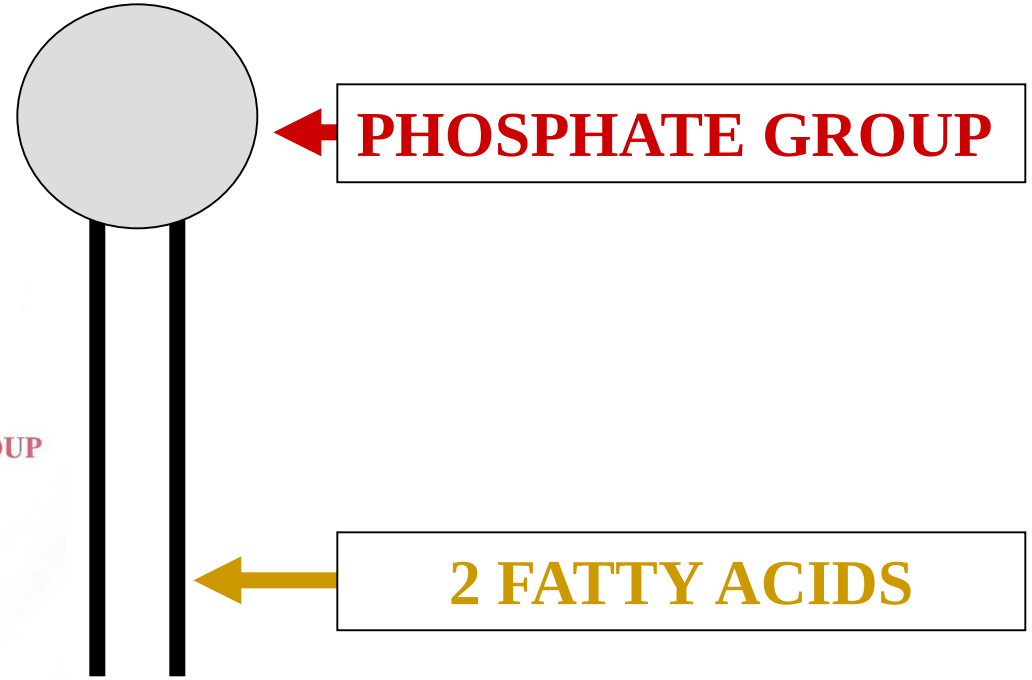
H

PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE



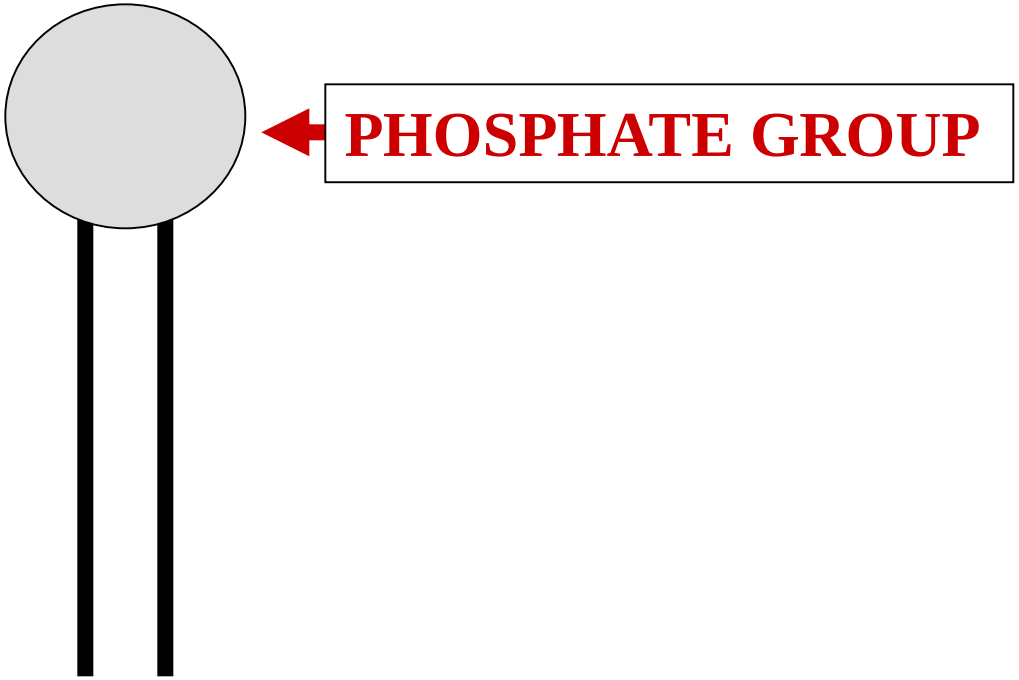
PHOSPHOLIPID STRUCTURE

H
*
H * C * PHOSPHATE GROUP
*
H * C * FATTY ACID
*
H * C * FATTY ACID
*
H

PHOSPHOLIPID

+/-

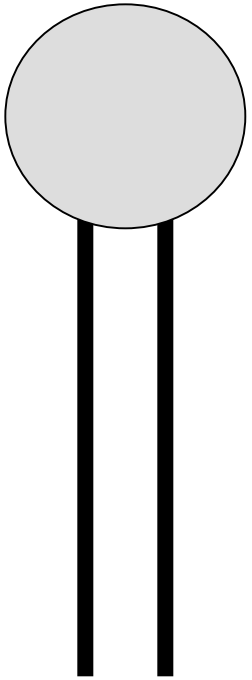
PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID

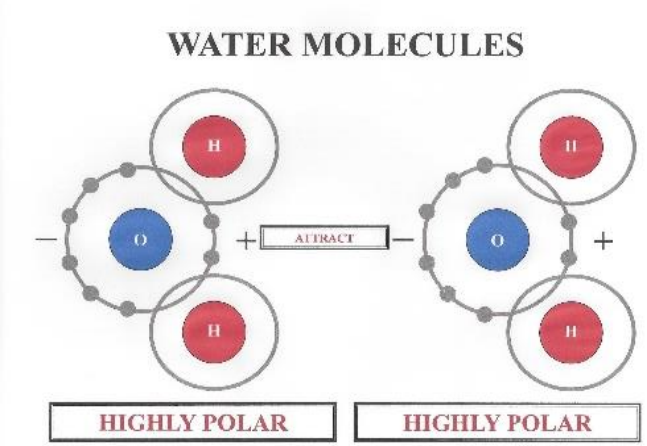
PHOSPHOLIPID STRUCTURE

+/-



PHOSPHATE GROUP

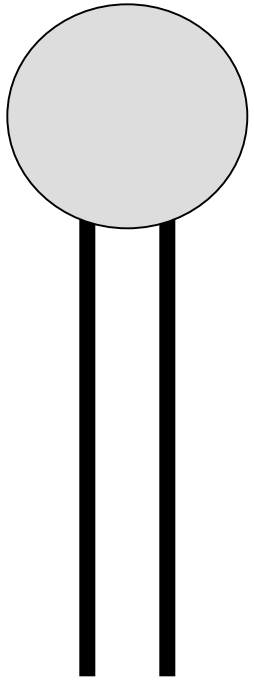
POLAR



PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE

+/-



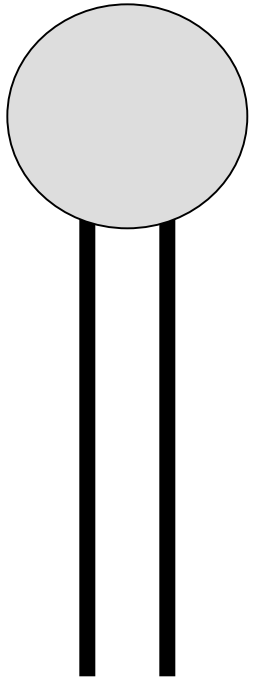
PHOSPHATE GROUP

H-BONDS W/ H2O: PRESENT

PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE

+/-

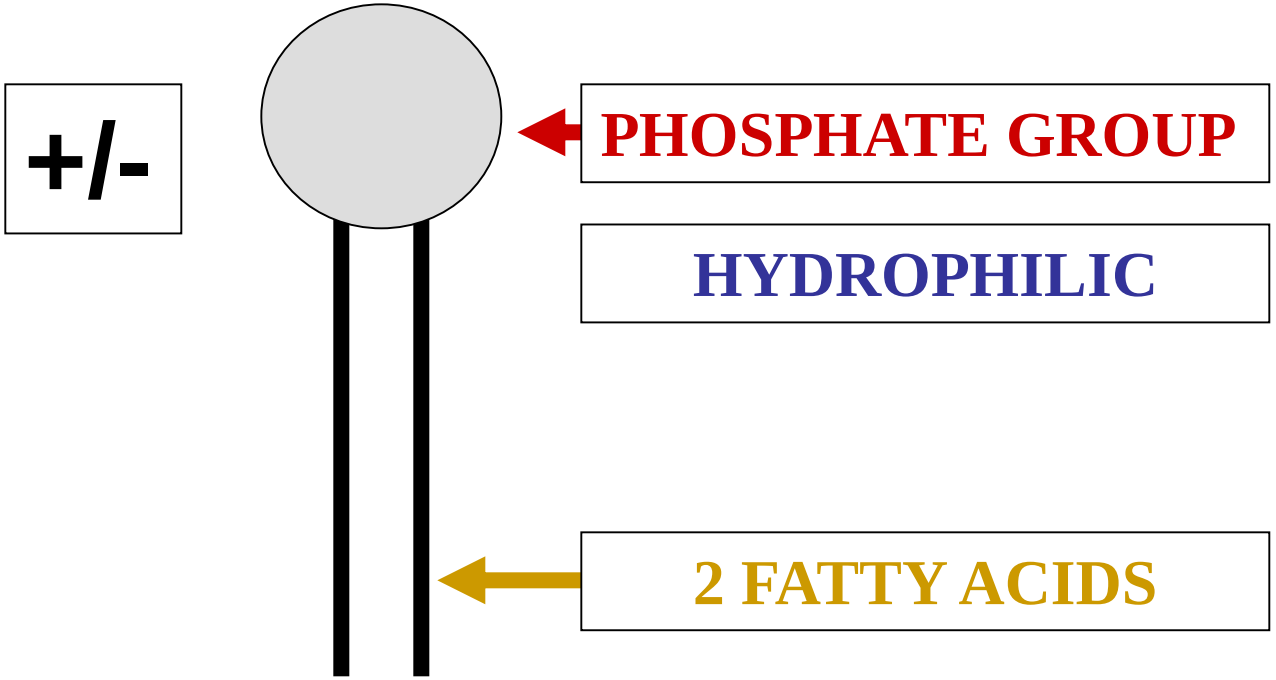


PHOSPHATE GROUP

HYDROPHILIC

PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE

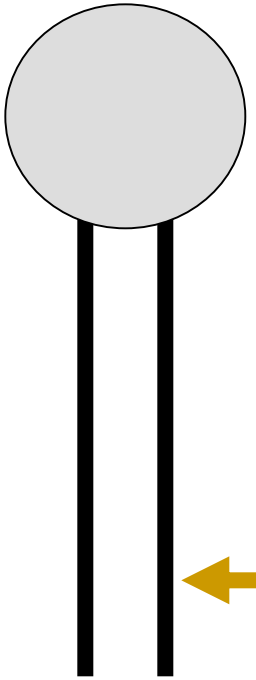


PHOSPHOLIPID

H

PHOSPHOLIPID STRUCTURE

+/-



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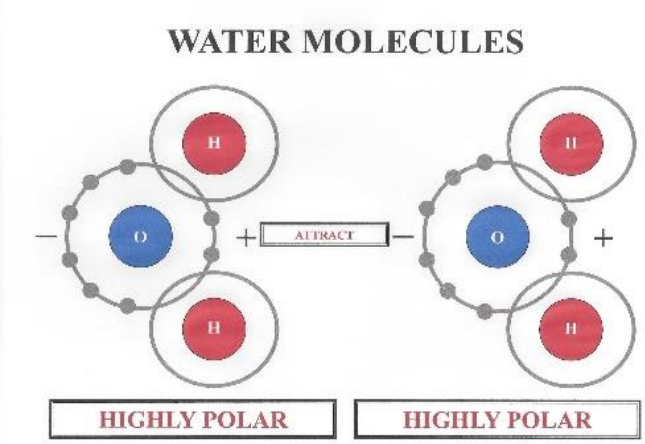


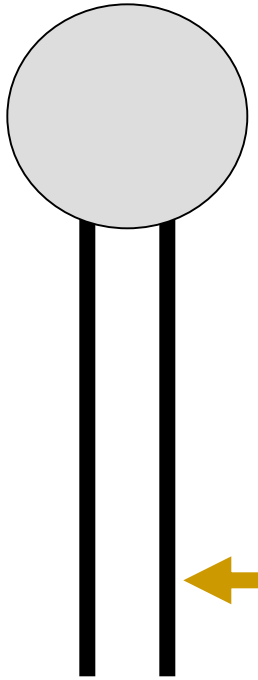
2 FATTY ACIDS

NON-POLAR

PHOSPHOLIPID

H

PHOSPHOLIPID STRUCTURE



+/-

PHOSPHATE GROUP

HYDROPHILIC

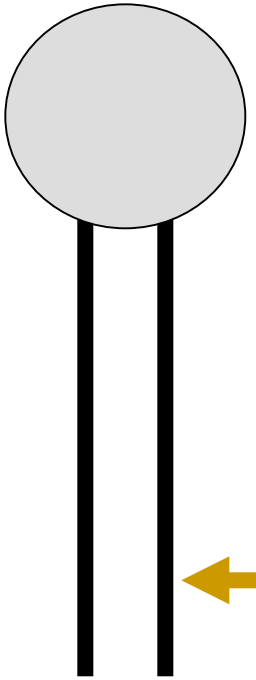
~

2 FATTY ACIDS

H-BONDS W/ H2O: ABSENT

PHOSPHOLIPID

PHOSPHOLIPID STRUCTURE



+/-

PHOSPHATE GROUP

HYDROPHILIC

~

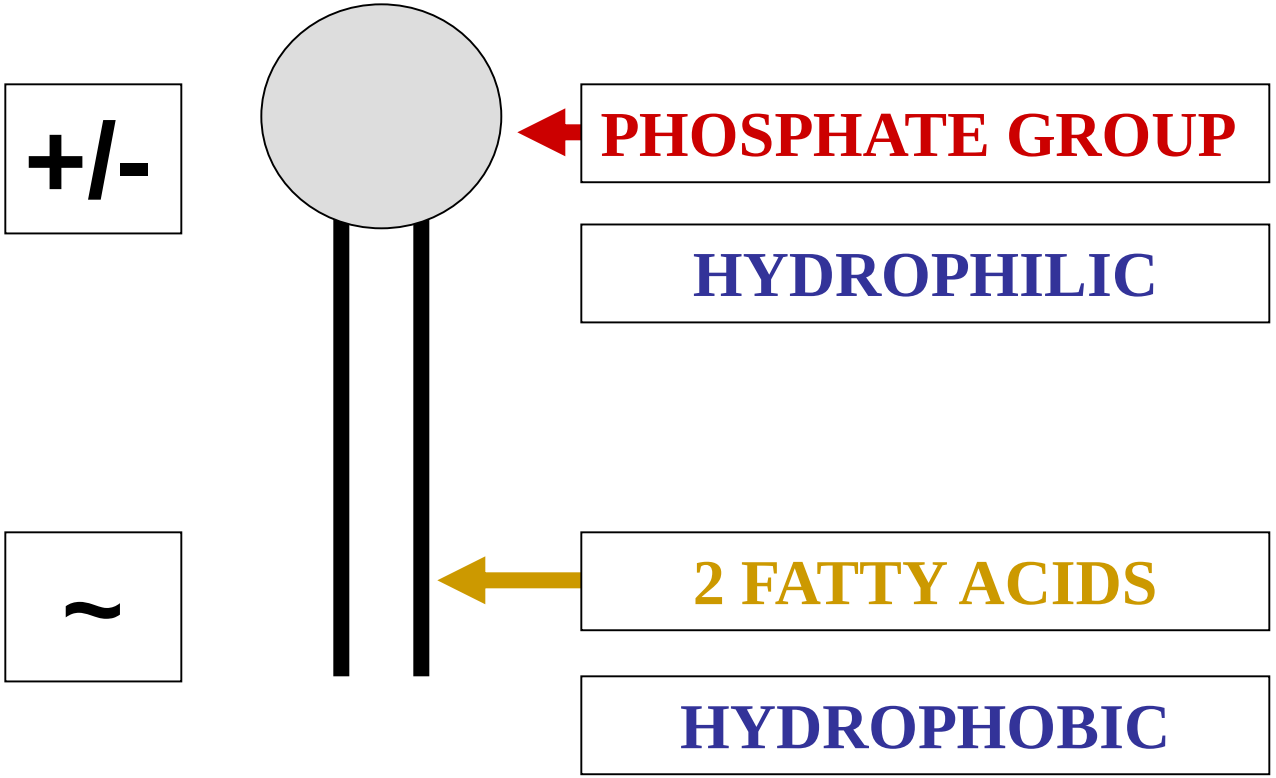
2 FATTY ACIDS

HYDROPHOBIC

PHOSPHOLIPID

A

PHOSPHOLIPID STRUCTURE



PHOSPHOLIPID: AMPHIPATHIC

AMPHIPATHIC MOLECULE

AMPHIPATHIC MOLECULE

HYDROPHLIC COMPONENT

&

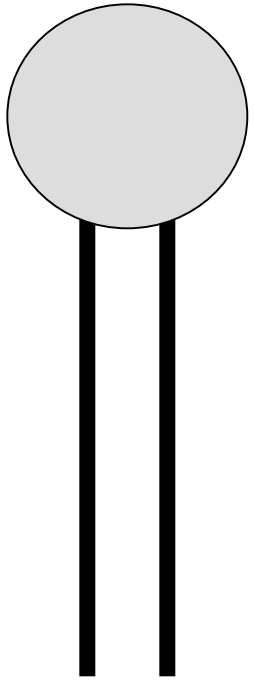
HYDROPHOBIC COMPONENT

AMPHIPATHIC MOLECULE

PHOSPHOLIPID STRUCTURE

SUMMARY

PHOSPHOLIPID STRUCTURE



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PHOSPHOLIPID STRUCTURE

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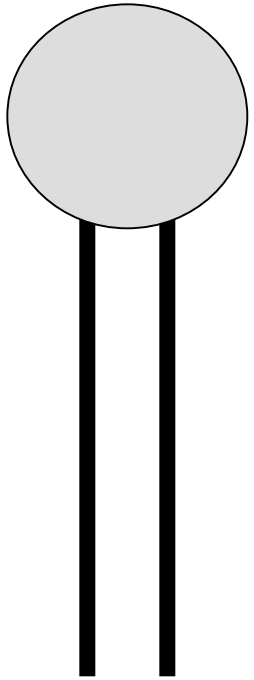
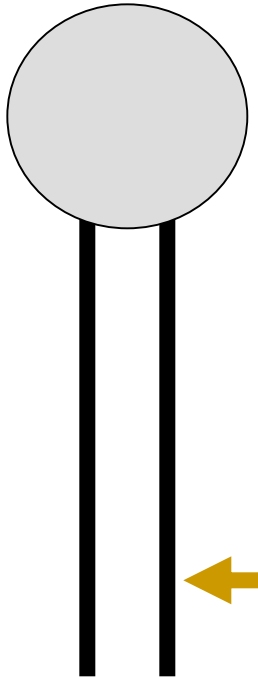


PHOSPHATE GROUP

HYDROPHILIC

PHOSPHOLIPID STRUCTURE



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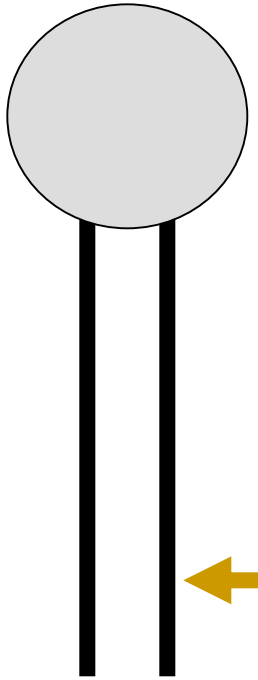
PHOSPHATE GROUP

HYDROPHILIC

2 FATTY ACIDS

HYDROPHOBIC

PHOSPHOLIPID STRUCTURE



+/-

PHOSPHATE GROUP

HYDROPHILIC

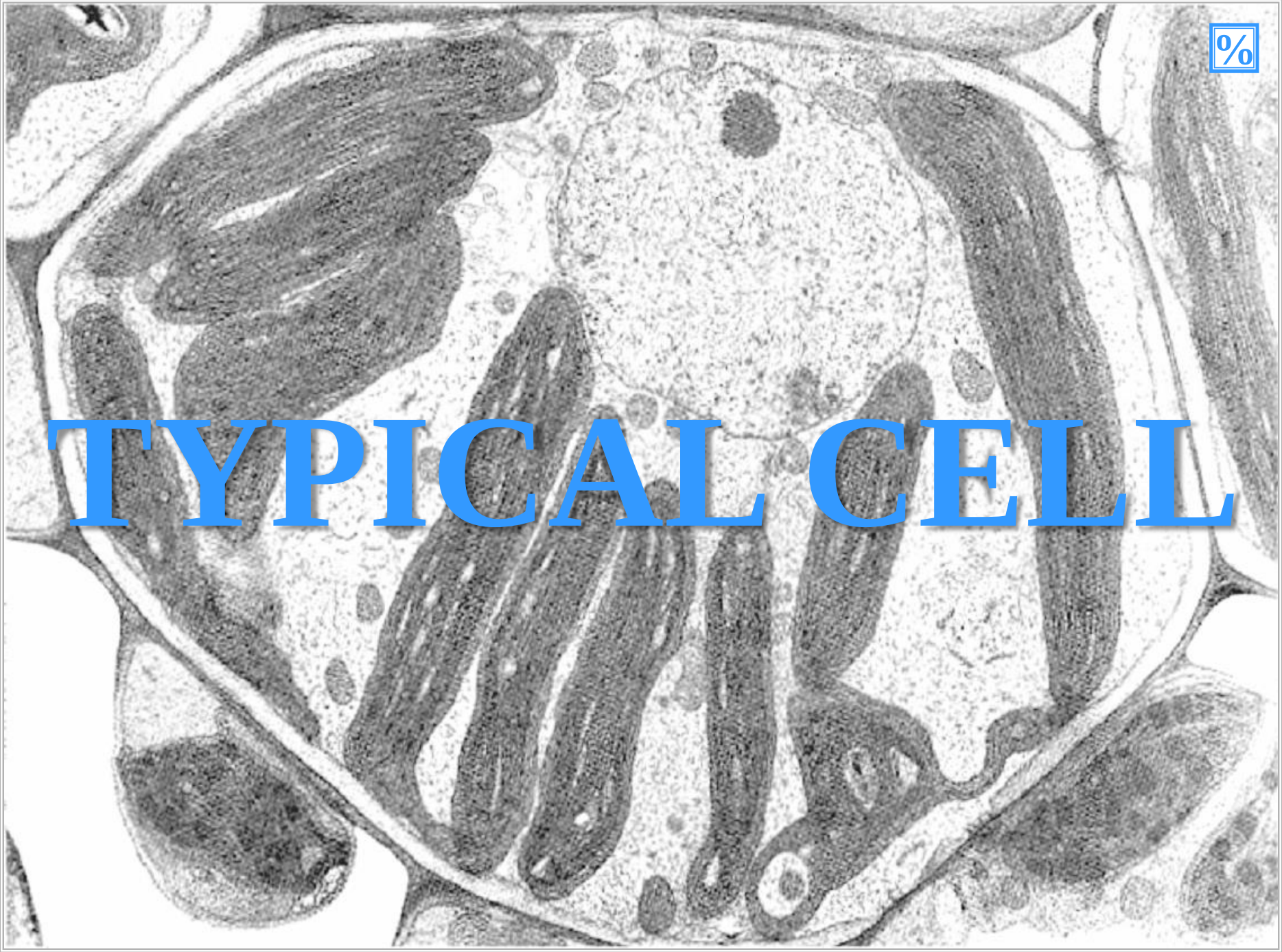
~

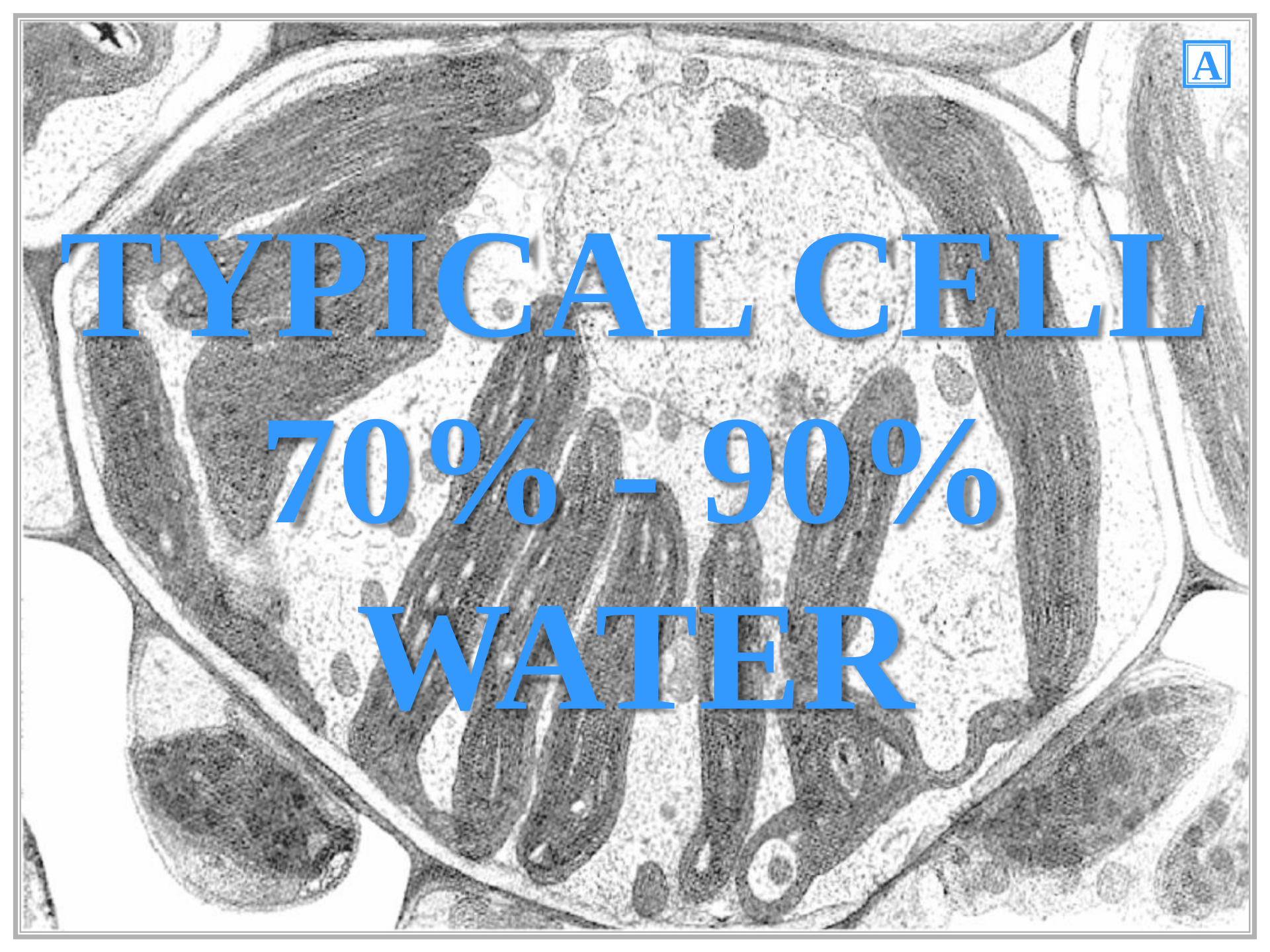
2 FATTY ACIDS

HYDROPHOBIC

AMPHIPATHIC MOLECULE

AMPHIPATHIC PHOSPHOLIPIDS & WATER AQUEOUS SOLUTION


%
TYPICAL CELL

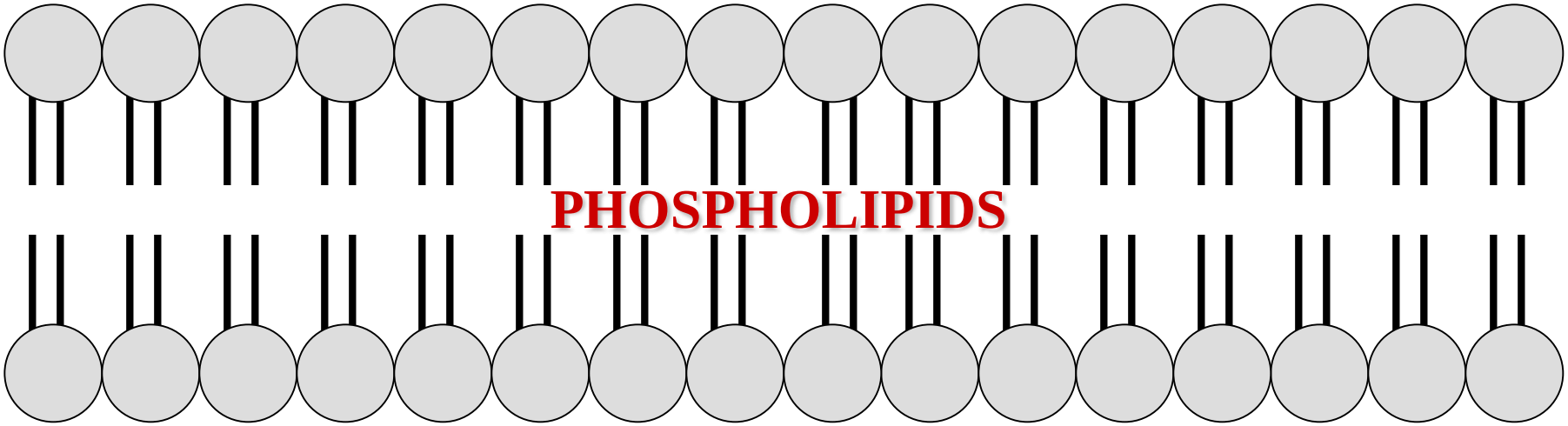

A
TYPICAL CELL
70% - 90%
WATER


TYPICAL CELL
AQUEOUS
SOLUTION

P

WATER WATER WATER

WATER WATER WATER



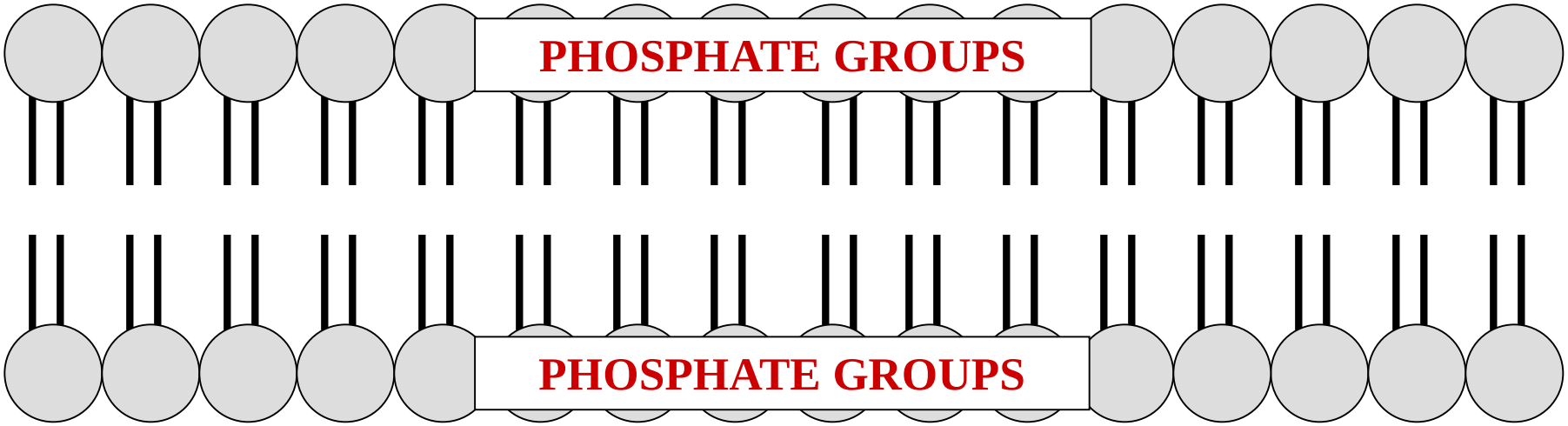
WATER WATER WATER

WATER WATER WATER

+/-

WATER WATER WATER

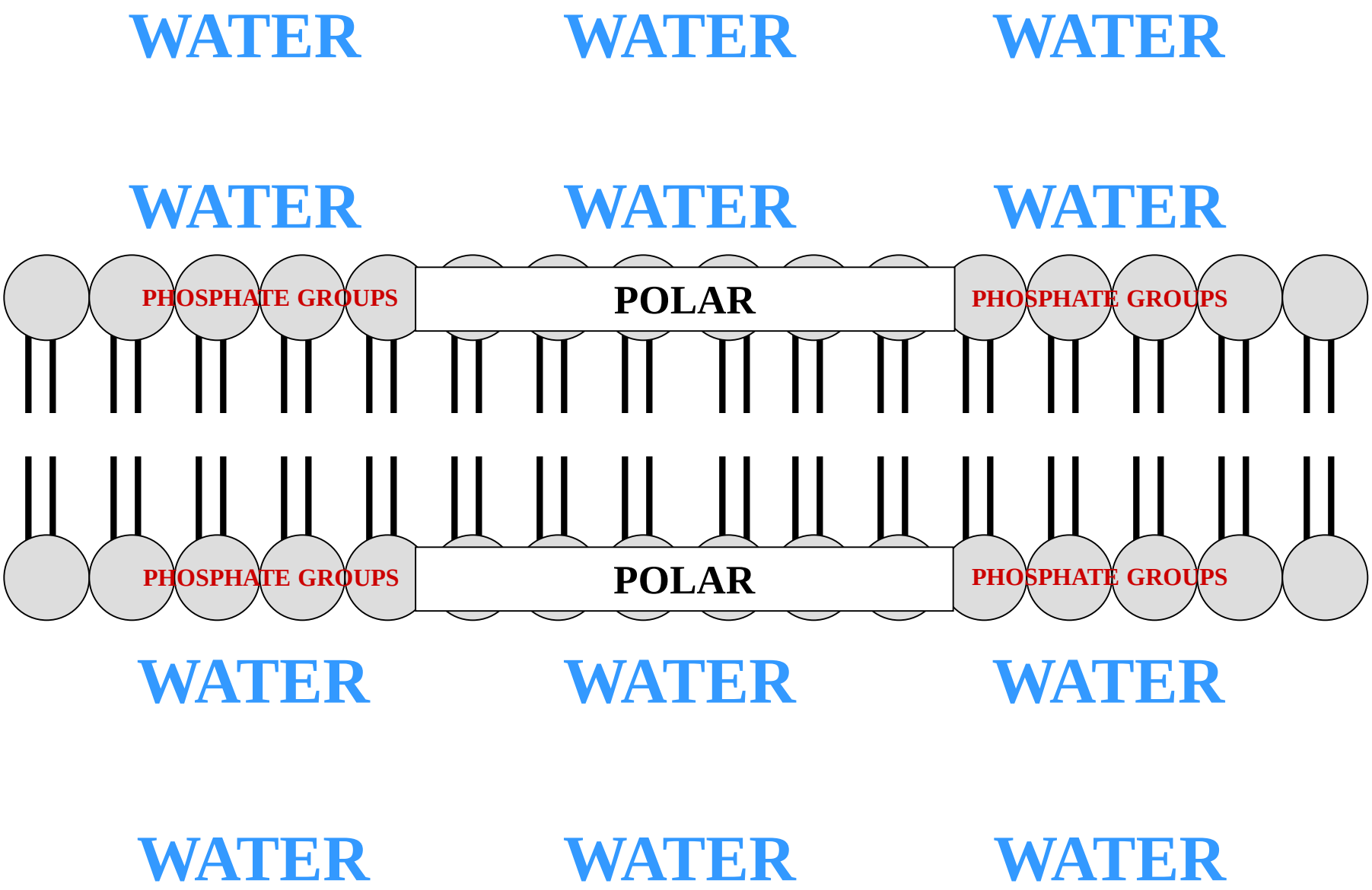
WATER WATER WATER



WATER WATER WATER

WATER WATER WATER

HB


WATER
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WATER
PHOSPHATE GROUPS
POLAR
PHOSPHATE GROUPS
PHOSPHATE GROUPS
POLAR
PHOSPHATE GROUPS
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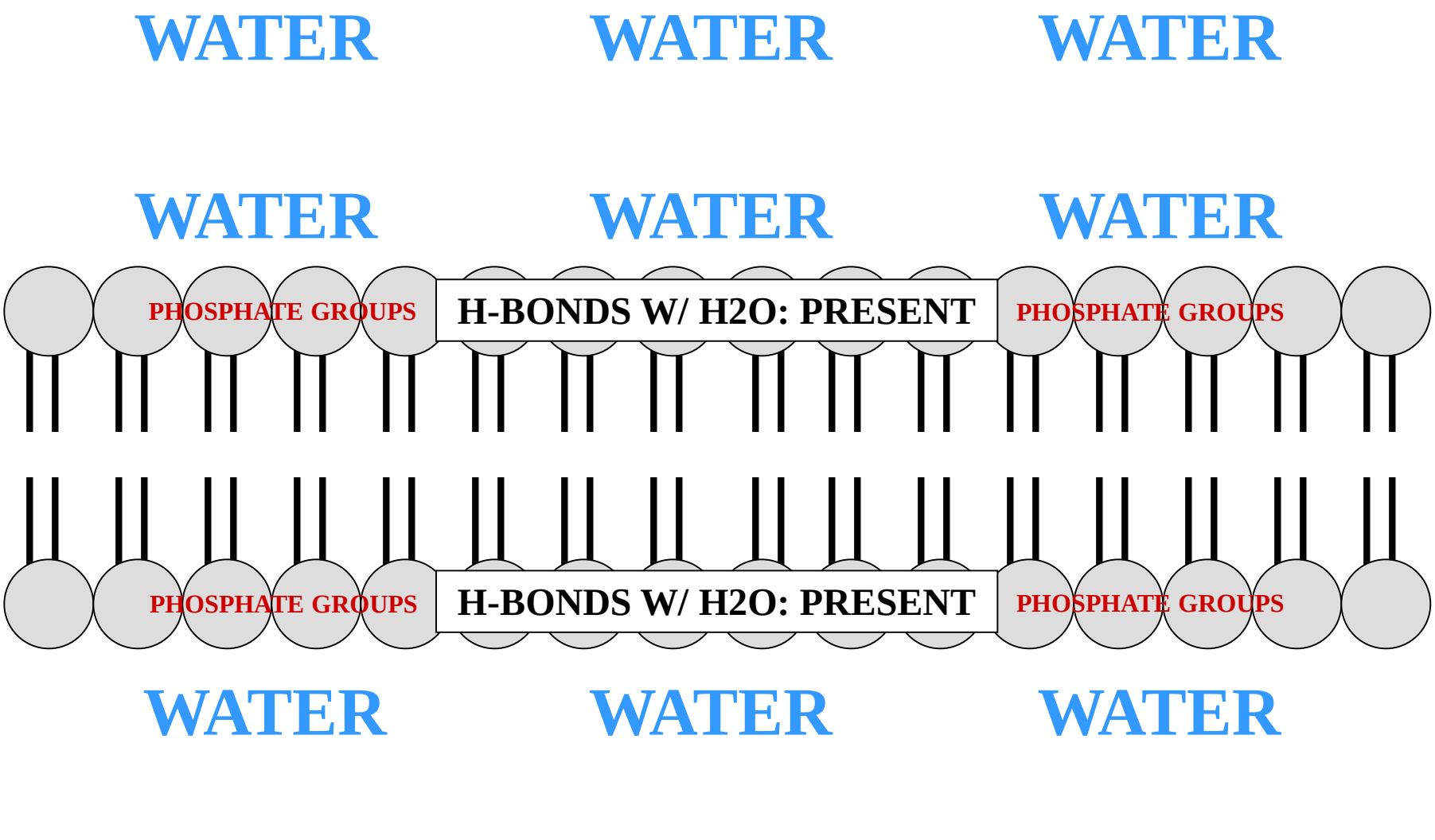
WATER

AT


WATER
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PHOSPHATE GROUPS
H-BONDS W/ H2O: PRESENT
PHOSPHATE GROUPS
PHOSPHATE GROUPS
H-BONDS W/ H2O: PRESENT
PHOSPHATE GROUPS
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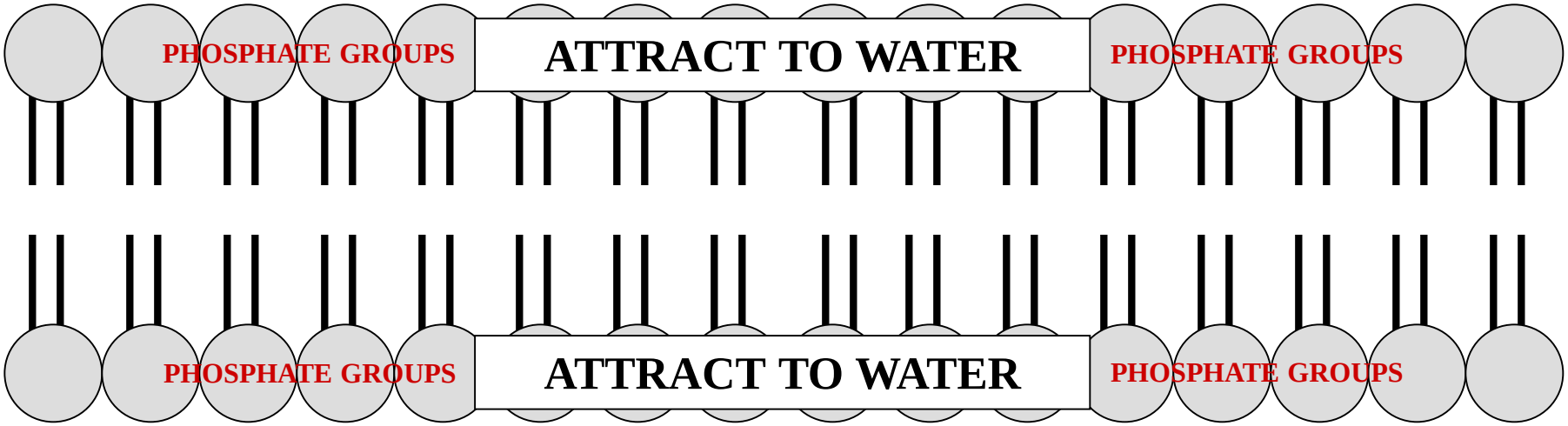
WATER WATER WATER

WATER WATER WATER



WATER WATER WATER

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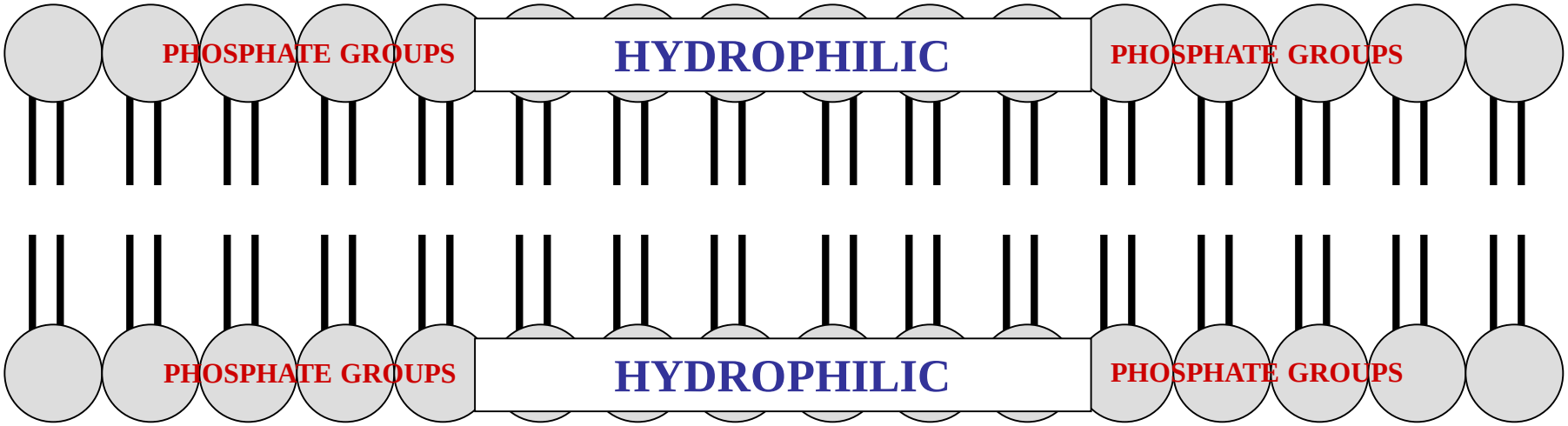
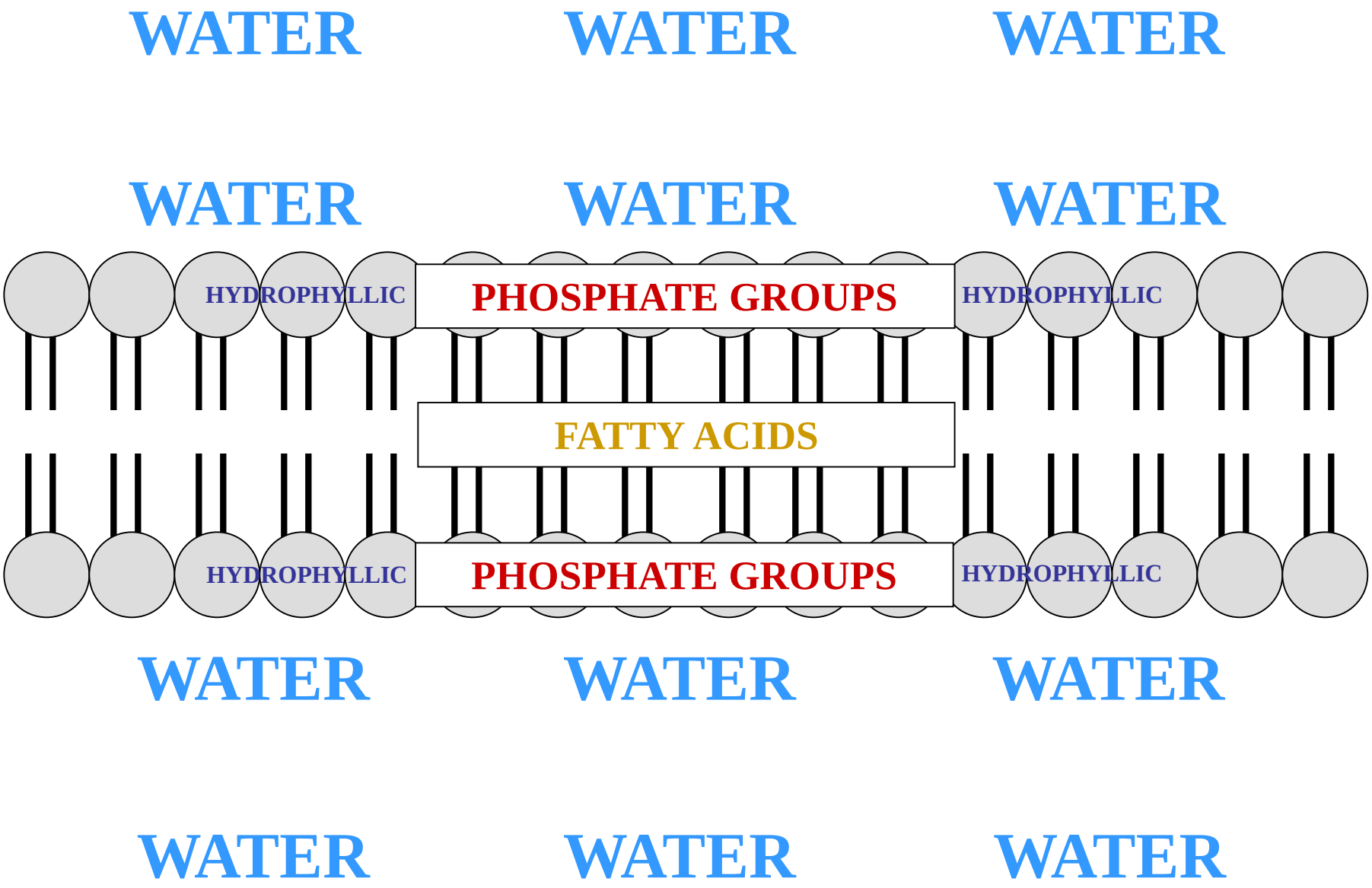
WATER WATER WATER

WATER WATER WATER



WATER WATER WATER

WATER WATER WATER


WATER
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HYDROPHYLLIC
PHOSPHATE GROUPS
HYDROPHYLLIC
FATTY ACIDS
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PHOSPHATE GROUPS
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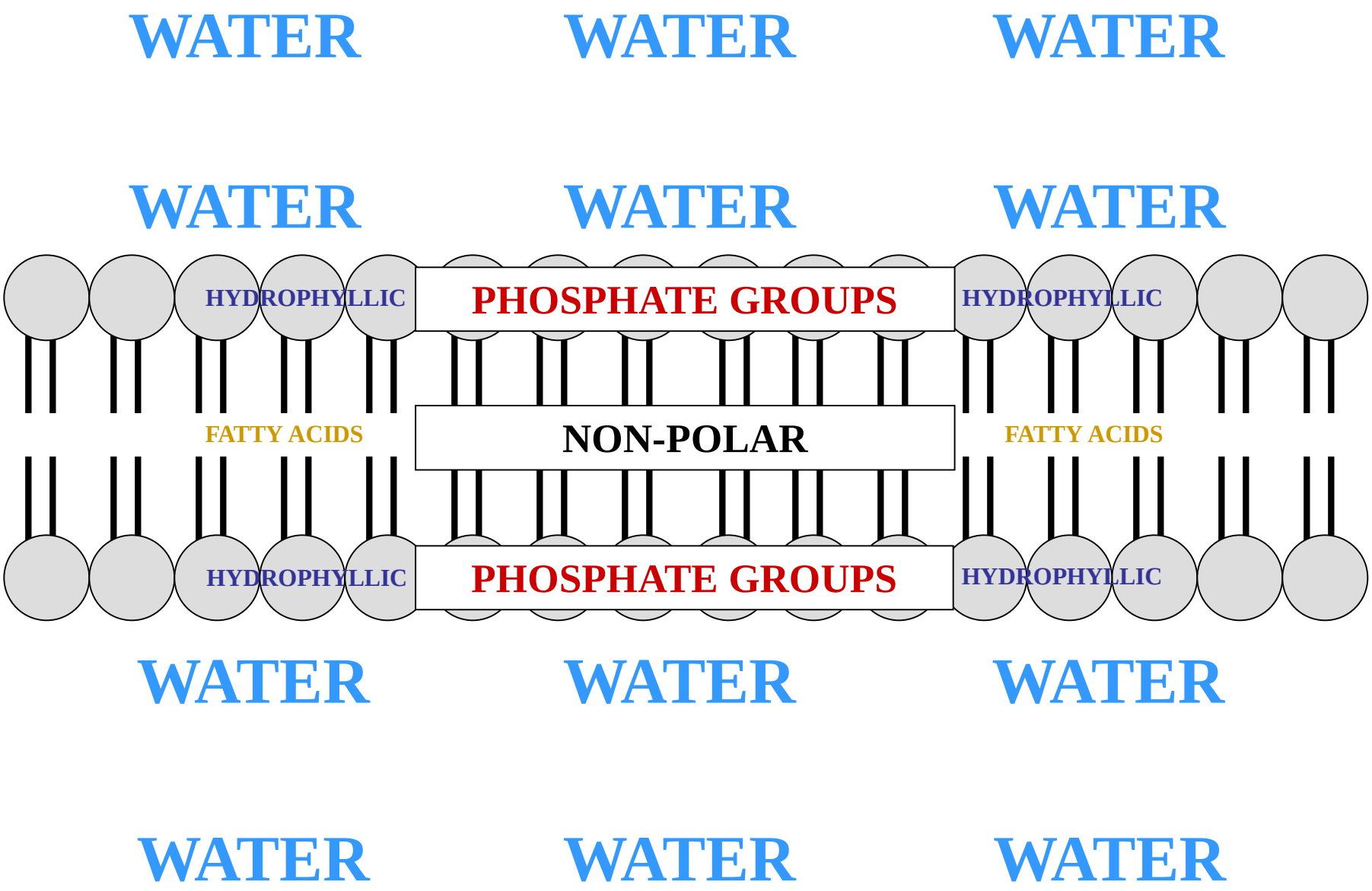
HB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WATER
HYDROPHYLLIC
PHOSPHATE GROUPS
HYDROPHYLLIC
FATTY ACIDS
NON-POLAR
FATTY ACIDS
HYDROPHYLLIC
PHOSPHATE GROUPS
HYDROPHYLLIC
WATER
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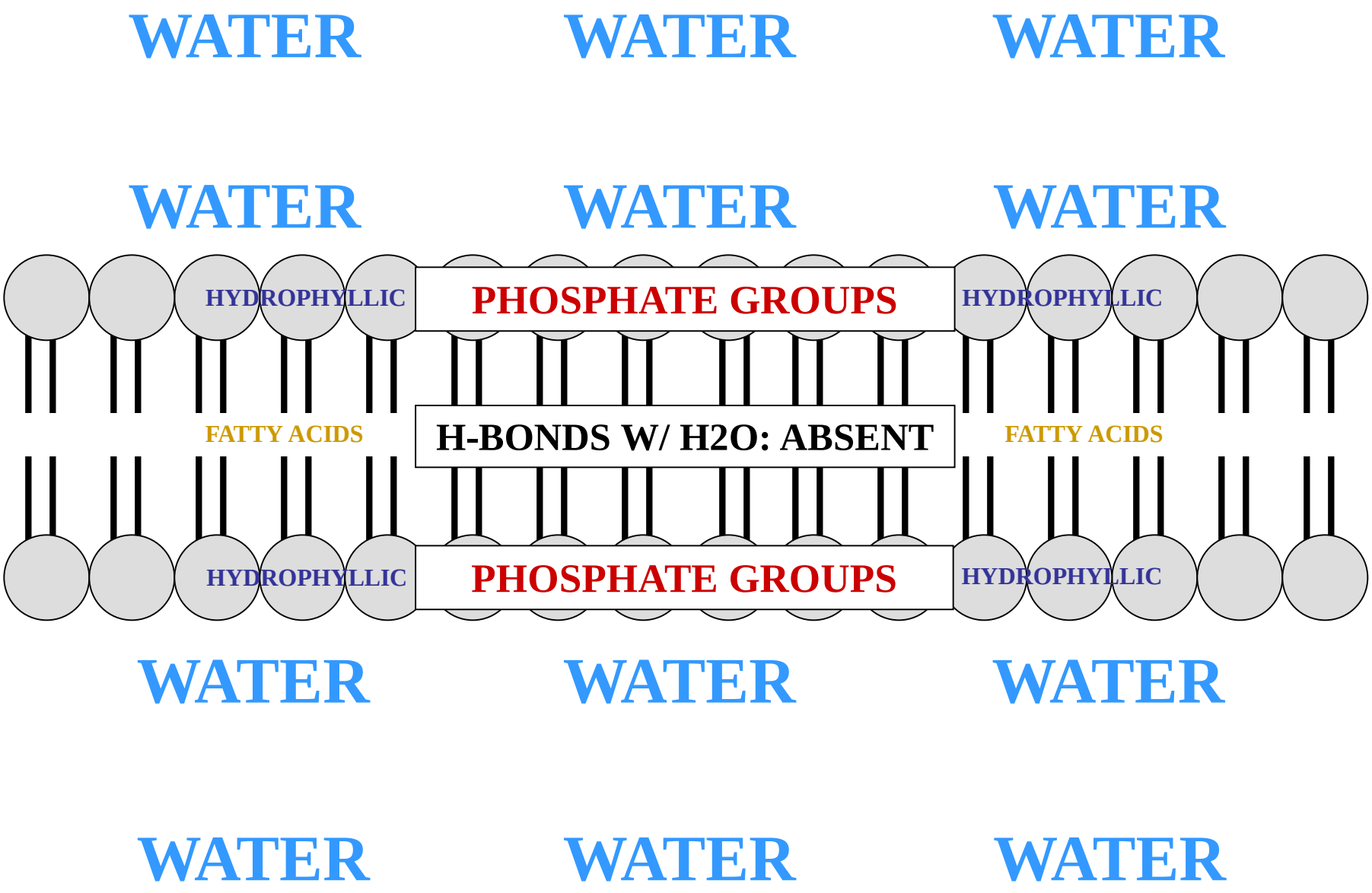
WATER

RE


WATER
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WATER
HYDROPHYLLIC
PHOSPHATE GROUPS
HYDROPHYLLIC
FATTY ACIDS
H-BONDS W/ H2O: ABSENT
FATTY ACIDS
HYDROPHYLLIC
PHOSPHATE GROUPS
HYDROPHYLLIC
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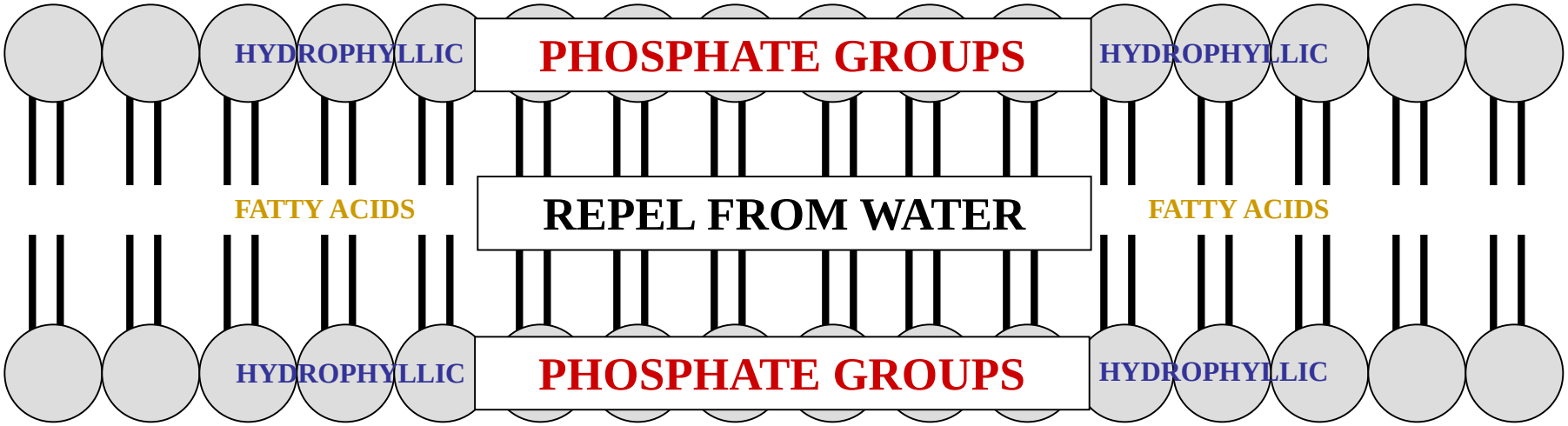

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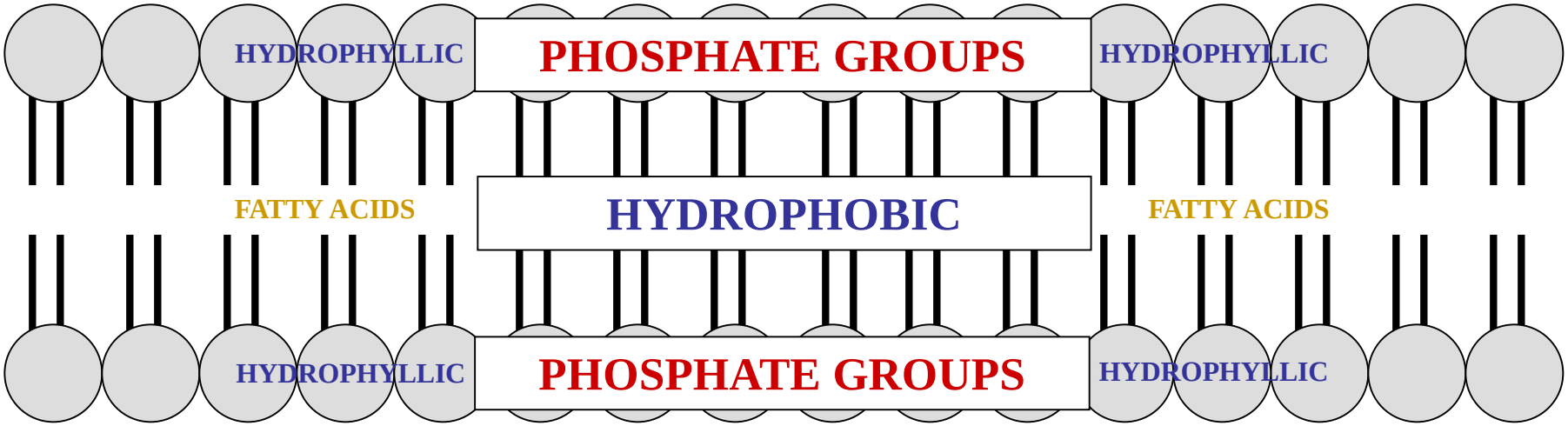

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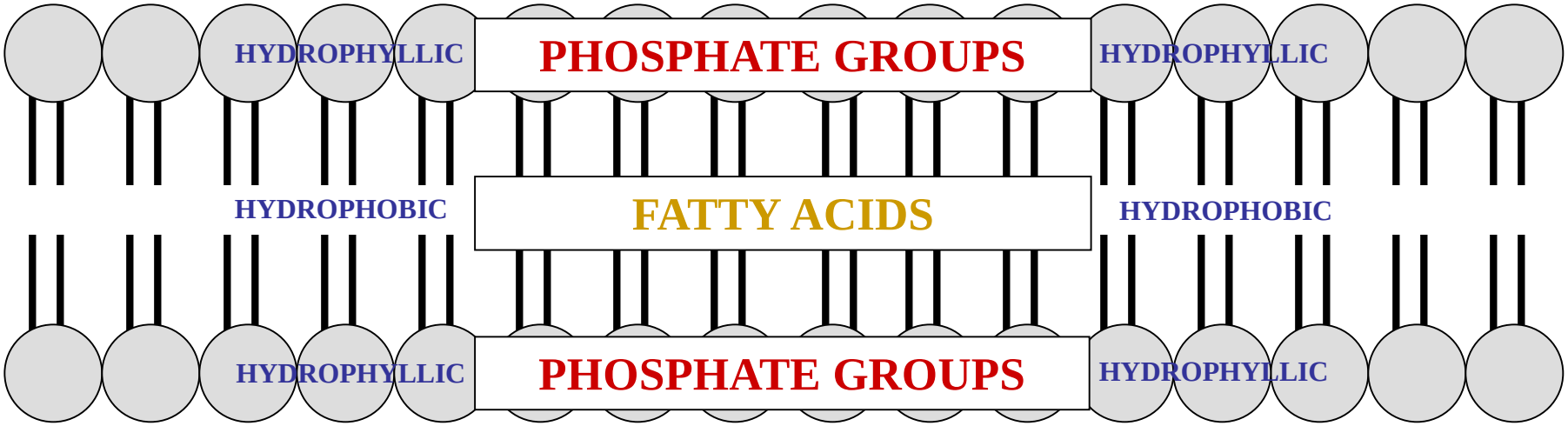

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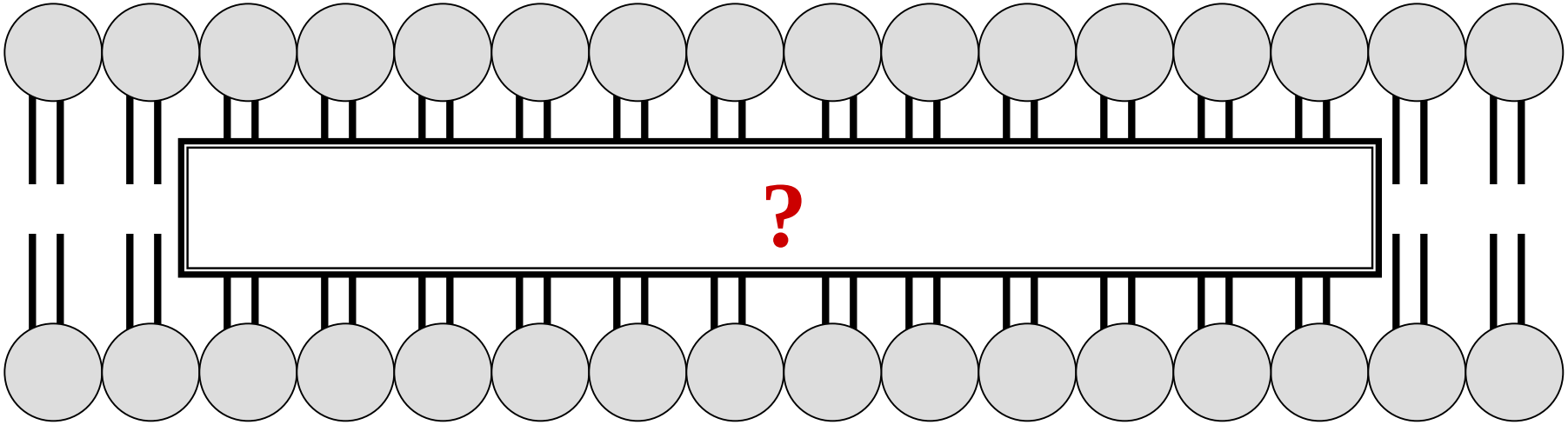

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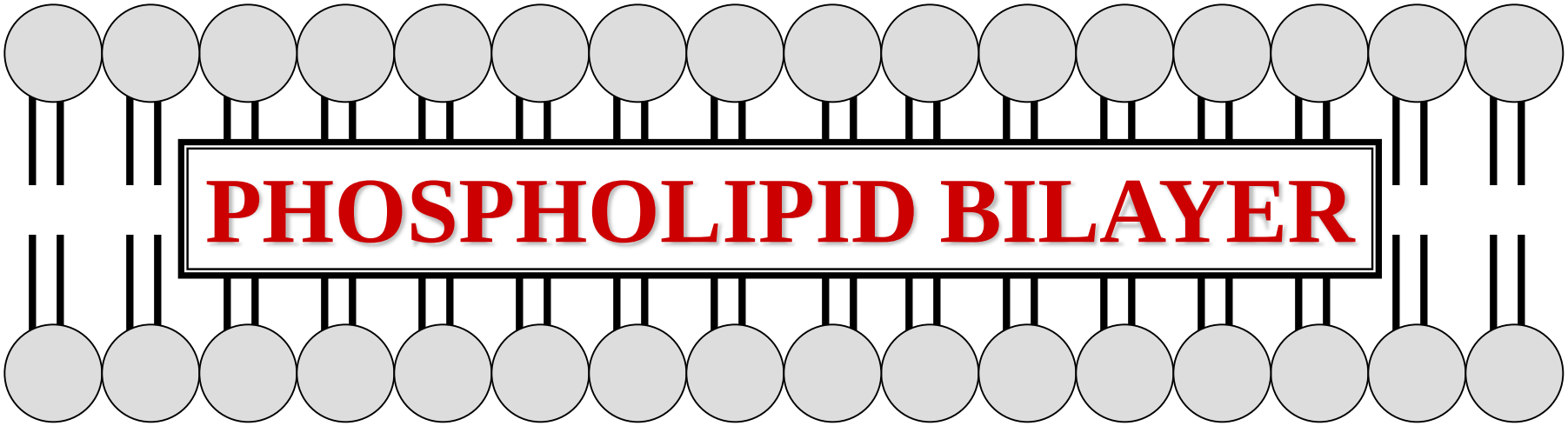


WATER WATER WATER

WATER WATER WATER

PHOSPHOLIPID BILAYER

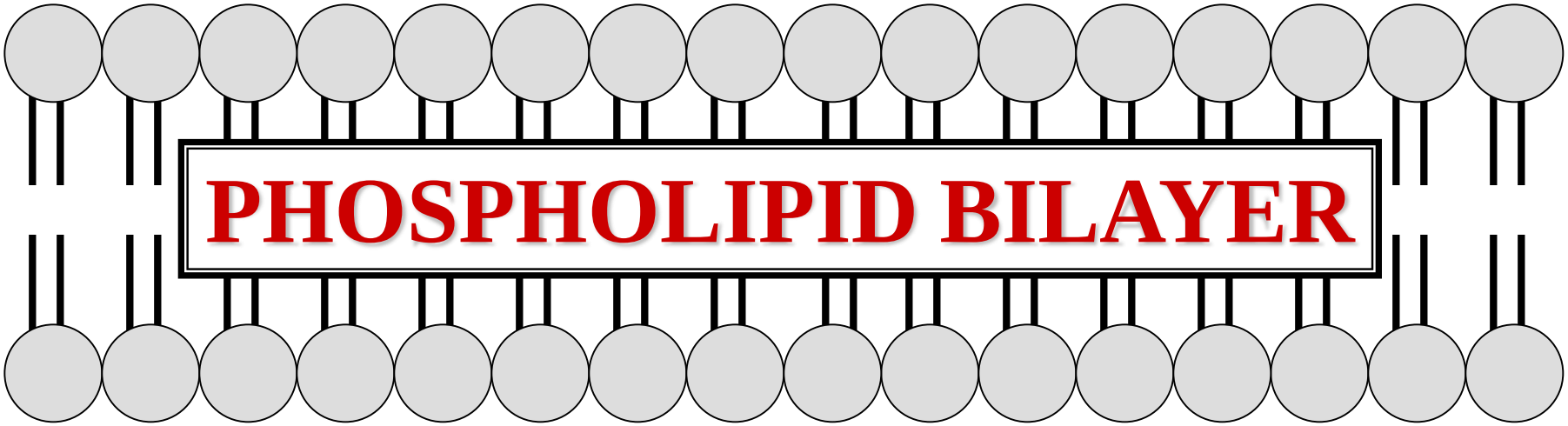
PHOSPHOLIPID BILAYER

CONSISTS PARALLEL PHOSPHOLIPID LAYERS

PHOSPHOLIPID BILAYER

WATER WATER WATER

WATER WATER WATER



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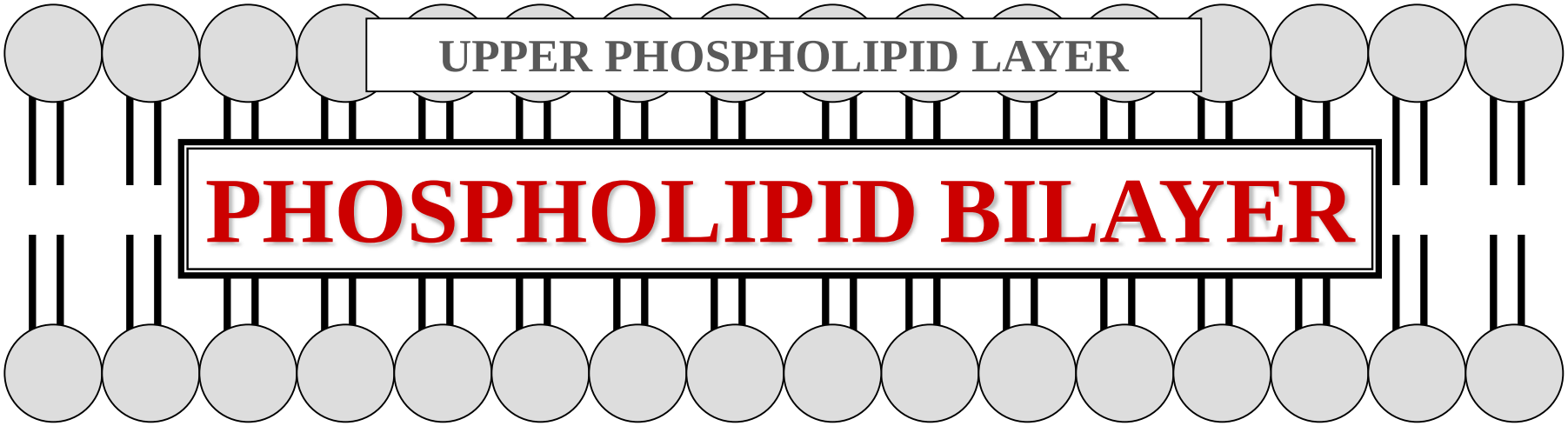

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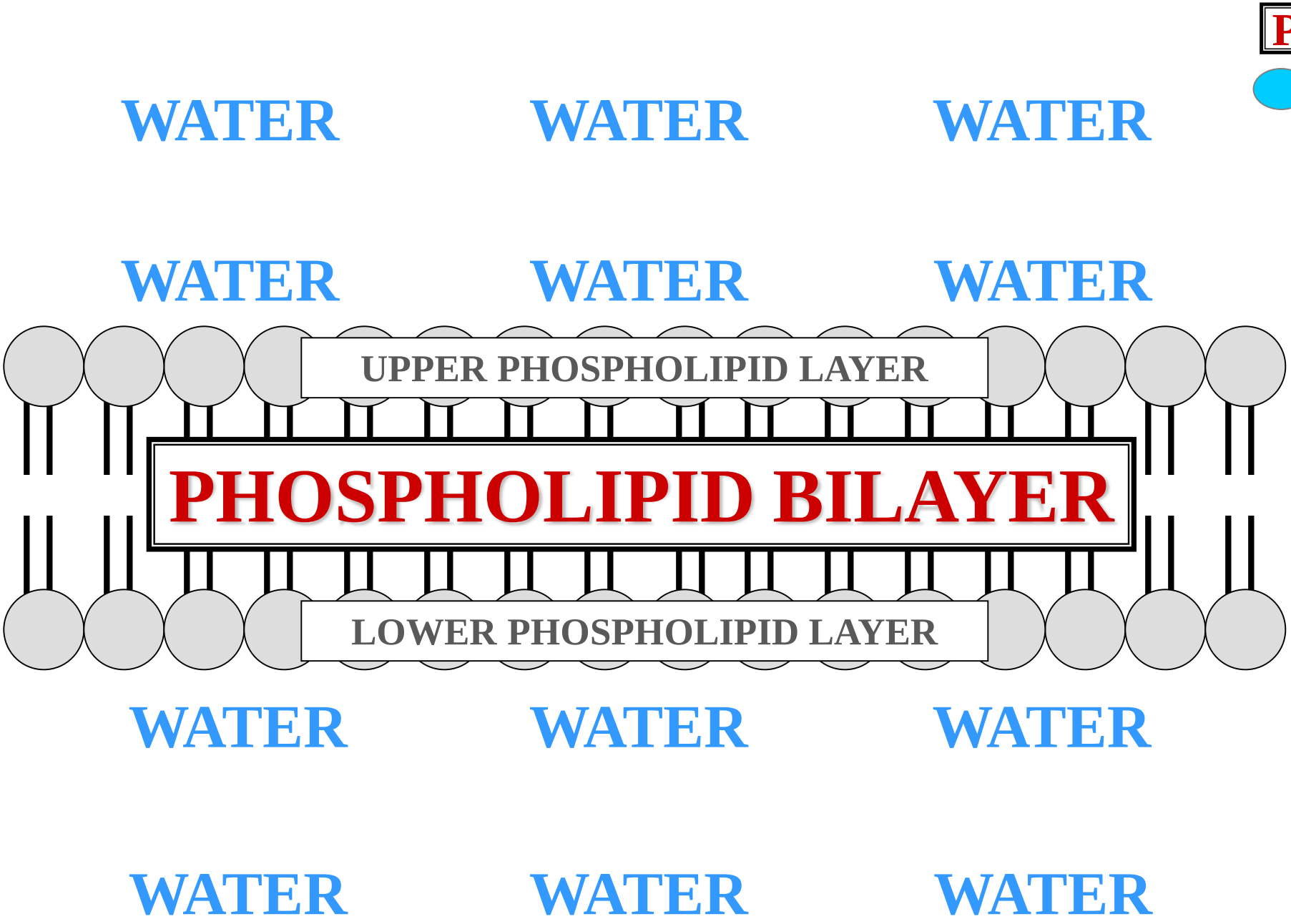
P
WATER
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WATER
UPPER PHOSPHOLIPID LAYER
PHOSPHOLIPID BILAYER
LOWER PHOSPHOLIPID LAYER
WATER
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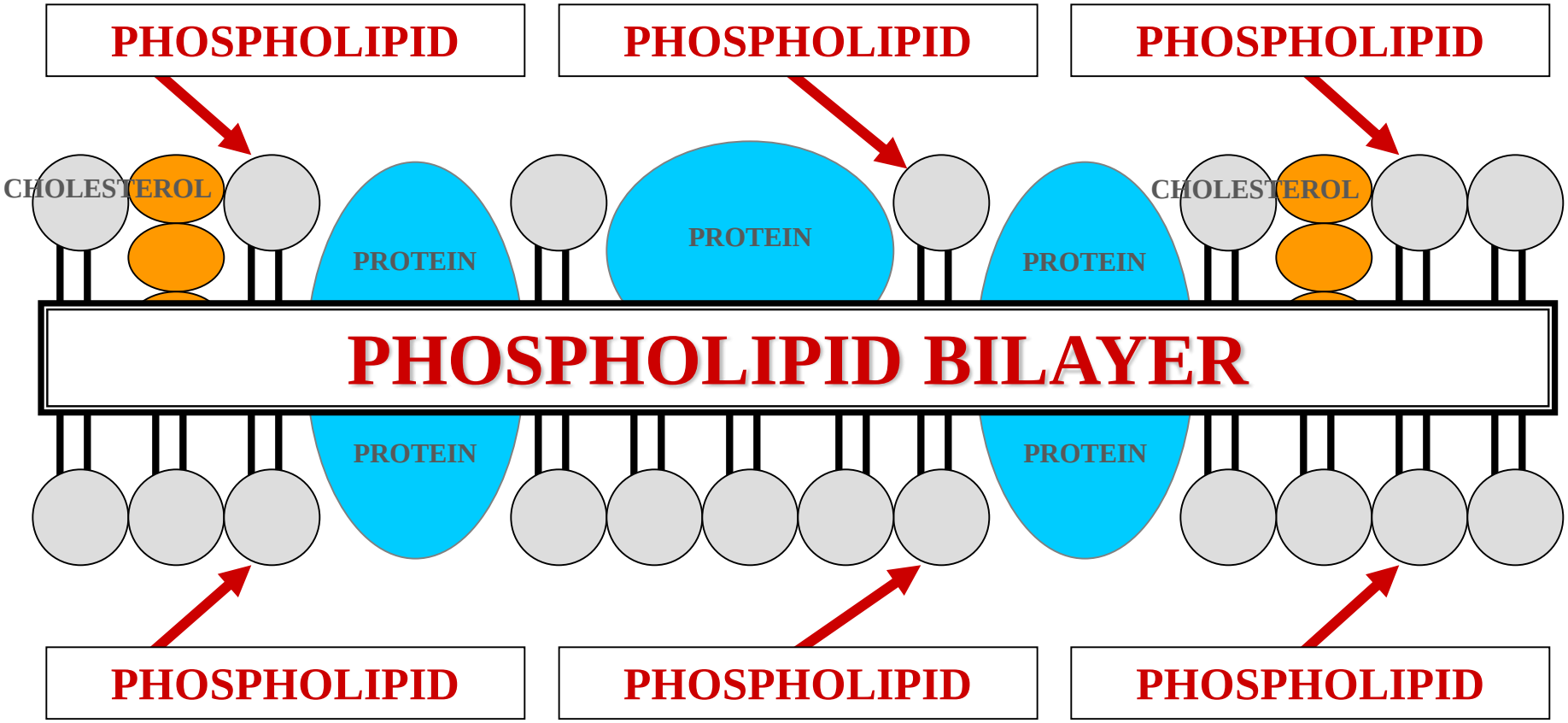
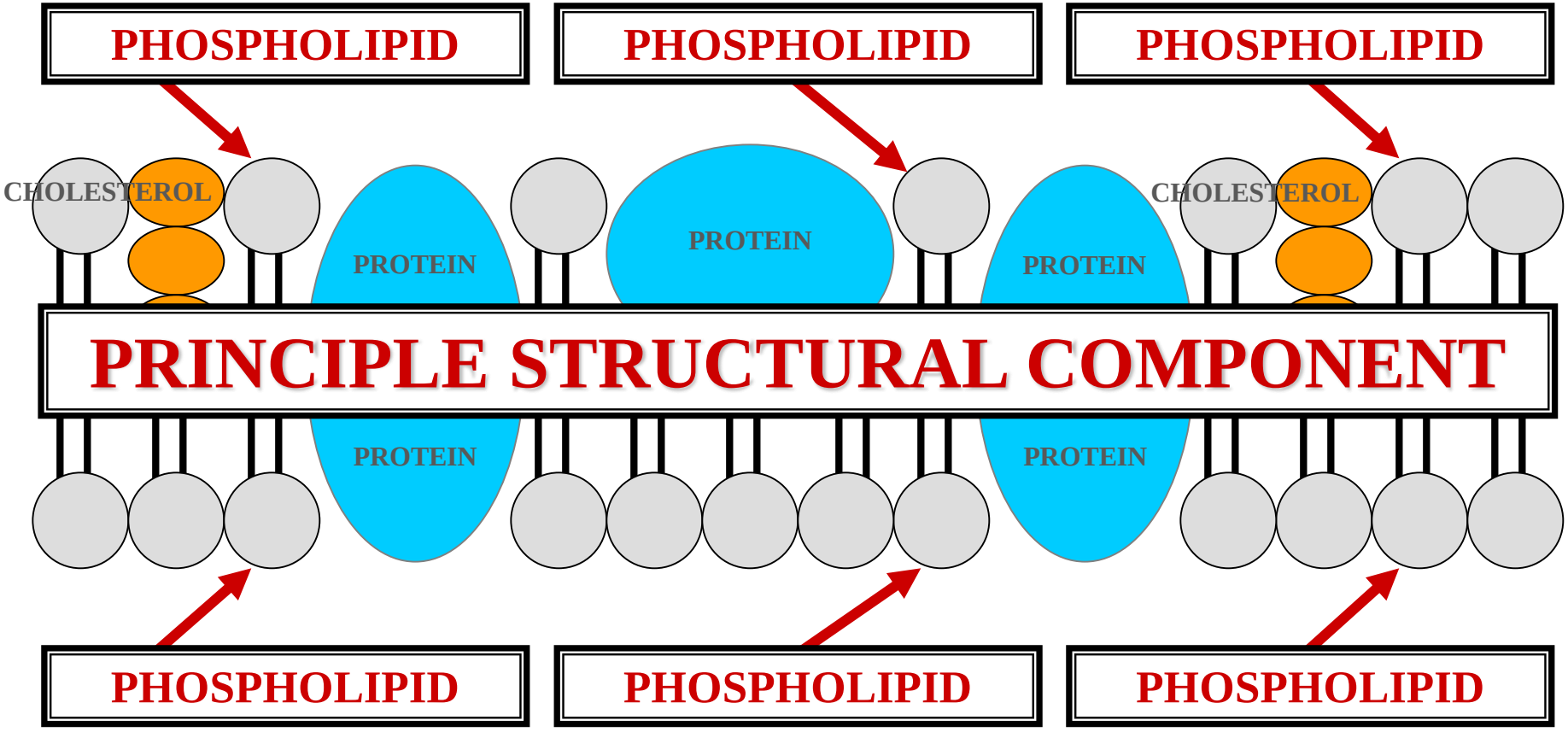
WATER

BIO-MEMBRANE STRUCTURE



BIO-MEMBRANE STRUCTURE

BIO-MEMBRANE STRUCTURE



BIO-MEMBRANE STRUCTURE

MACROMOLECULE CLASSES

CARBOHYDRATES
LIPIDS
PROTEINS
NUCLEIC ACIDS

MACROMOLECULE CLASSES

PROTEINS

PROTEIN

A

PROTEIN

AMINO ACID POLYMER

PROTEIN

AMINO ACID

AMINO ACID

PROTEIN MONOMER

AMINO ACID

AP

AMINO ACID

PROTEIN MONOMER

PROTEIN BUILDING BLOCK

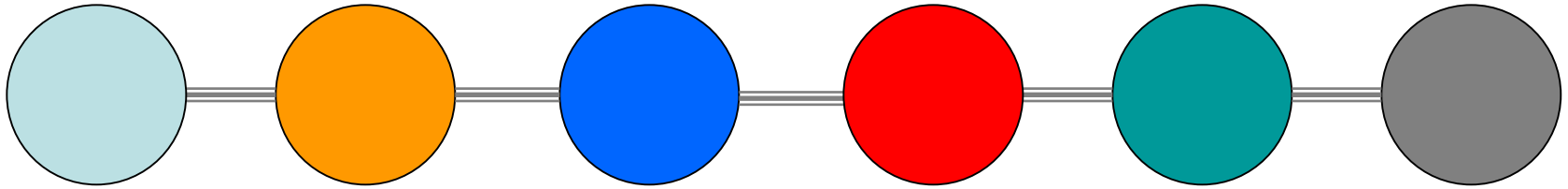
AMINO ACID

PROTEINS
AMINO ACIDS
APPLIED

¿

PO

PROTEIN STRUCTURE



PROTEIN

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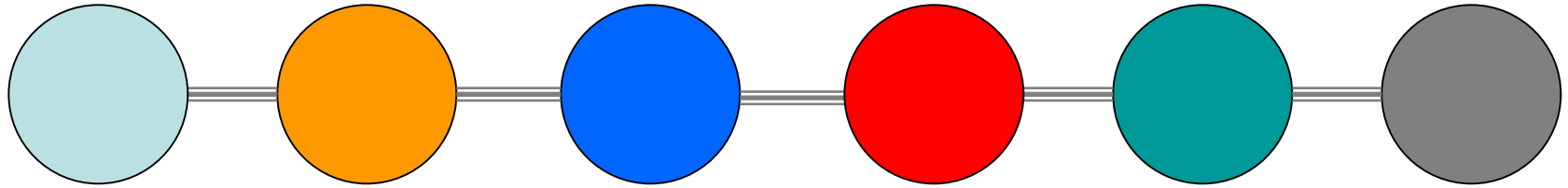
MO

PROTEIN STRUCTURE



BUILDING BLOCK

PROTEIN / POLYMER

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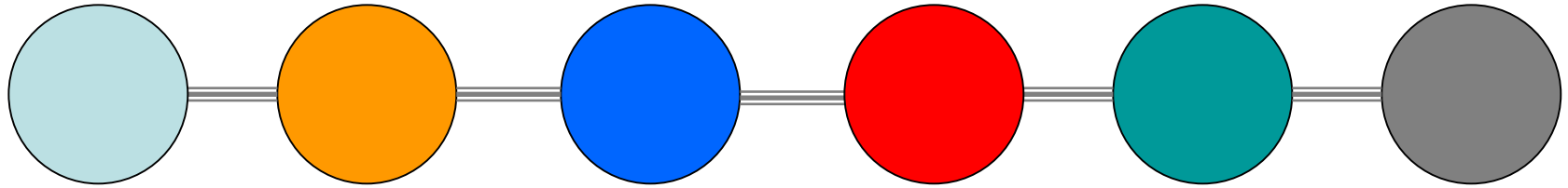
AA

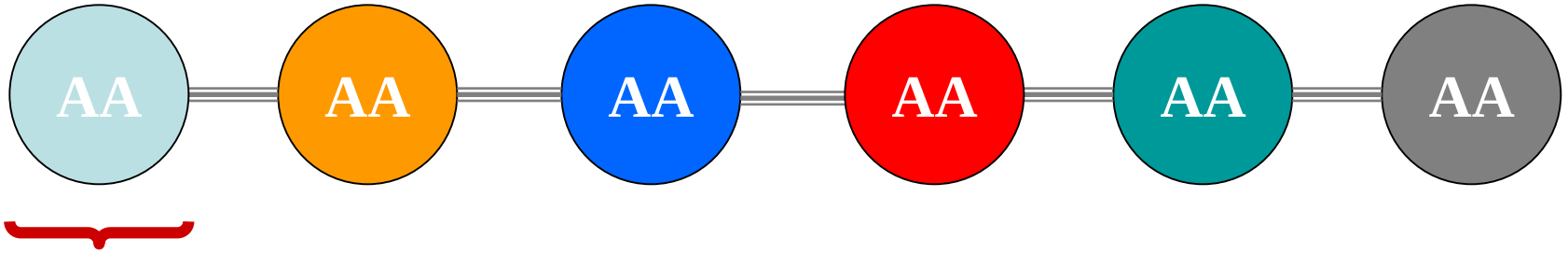
PROTEIN STRUCTURE



MONOMER

PROTEIN / POLYMER

PROTEIN STRUCTURE



AMINO ACID

PROTEIN

AMINO ACID STRUCTURE

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURAL COMPONENTS

C = ALPHA CARBON

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURAL COMPONENTS

C = ALPHA CARBON
H = HYDROGEN

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURAL COMPONENTS

C = ALPHA CARBON
H = HYDROGEN
NH2 = AMINO GROUP

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURAL COMPONENTS

C = ALPHA CARBON
H = HYDROGEN
NH2 = AMINO GROUP
COOH = CARBOXYL GROUP

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURAL COMPONENTS

C = ALPHA CARBON
H = HYDROGEN
NH2 = AMINO GROUP
COOH = CARBOXYL GROUP
R-GROUP = VARIES WITH AMINO ACID

AMINO ACID STRUCTURAL COMPONENTS

AMINO ACID STRUCTURE

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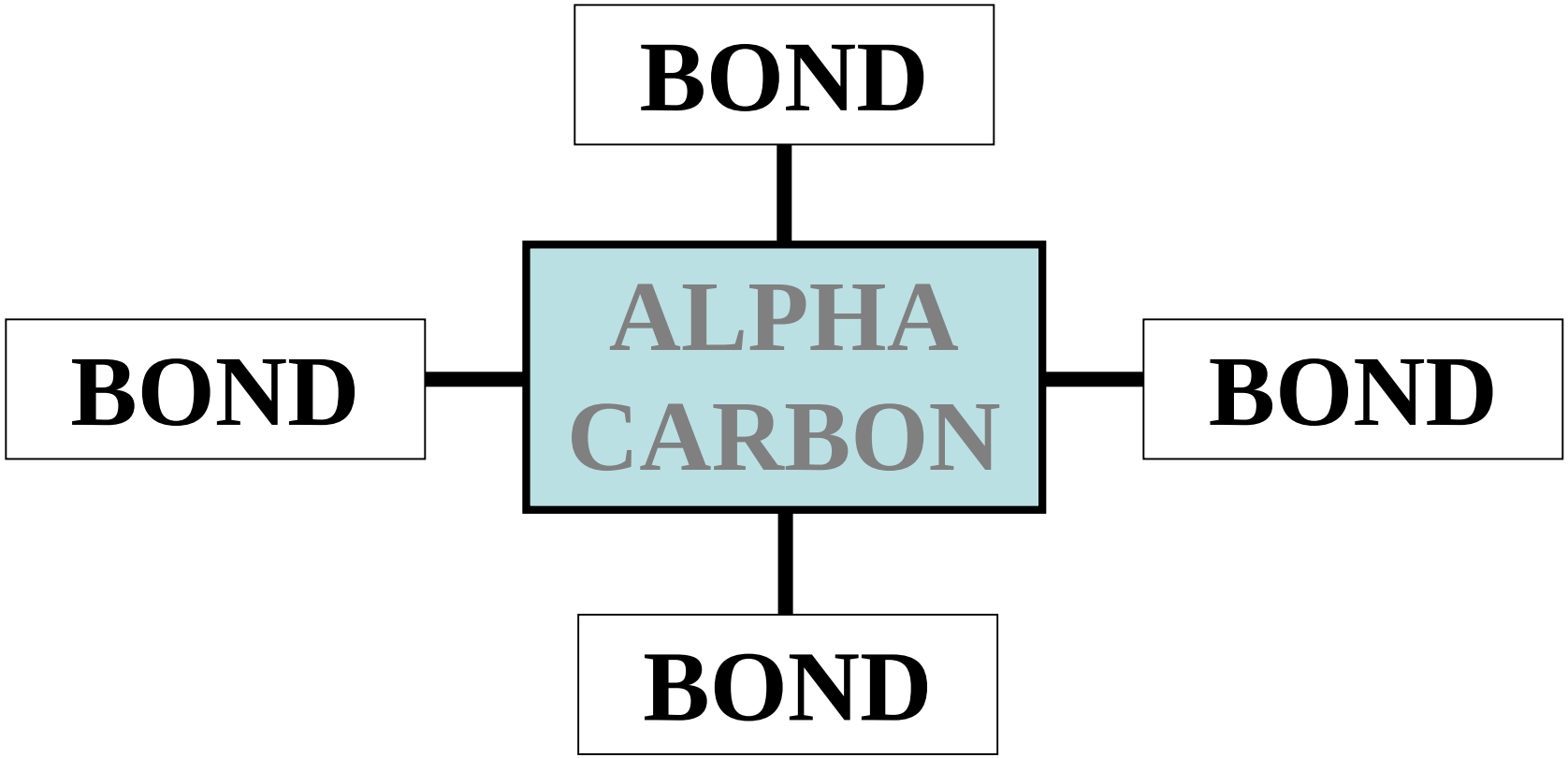
B
4

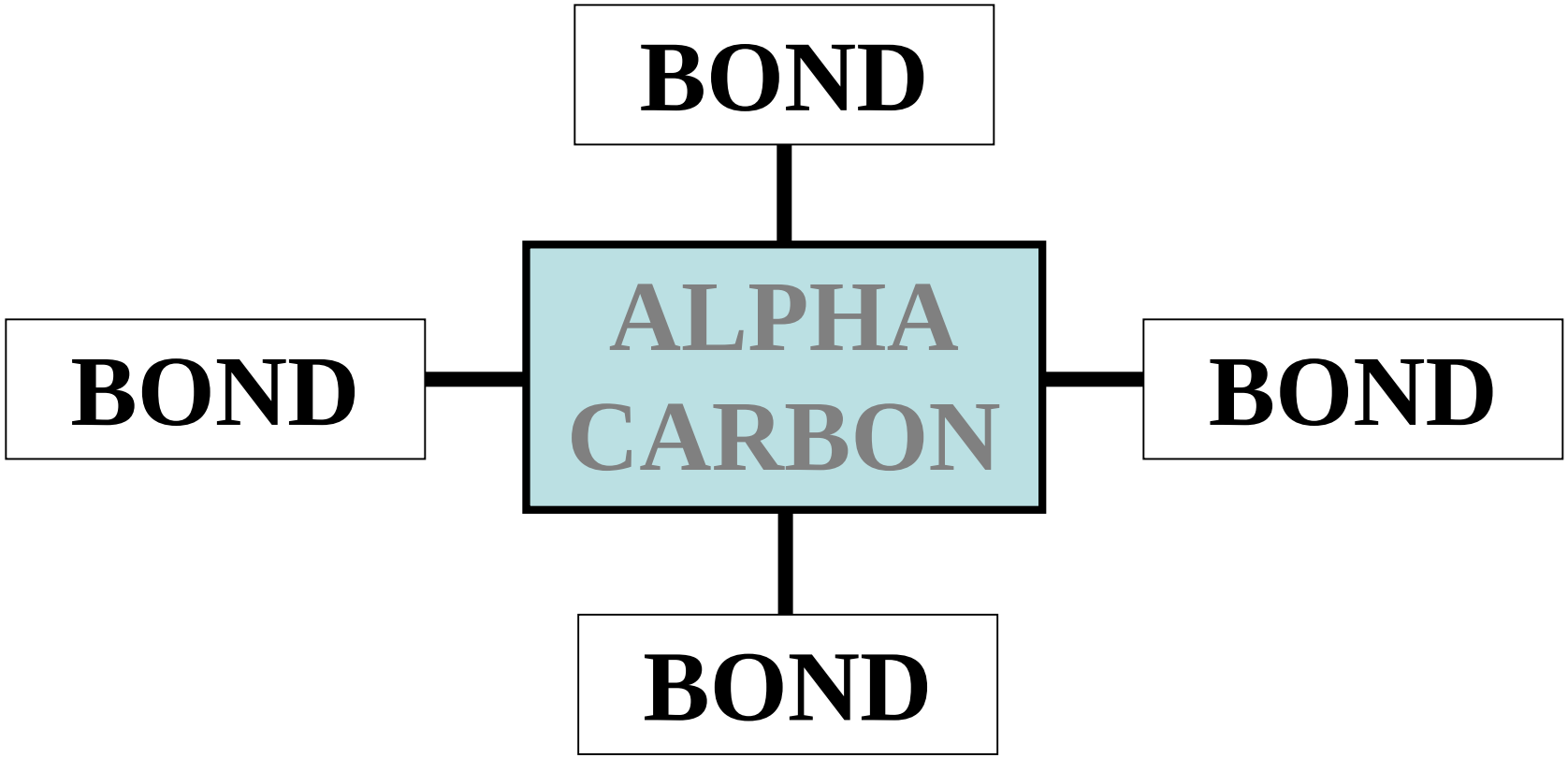
ALPHA CARBON

AMINO ACID STRUCTURE



4 CHEMICAL BONDS

AMINO ACID STRUCTURE



TETRAVALENT