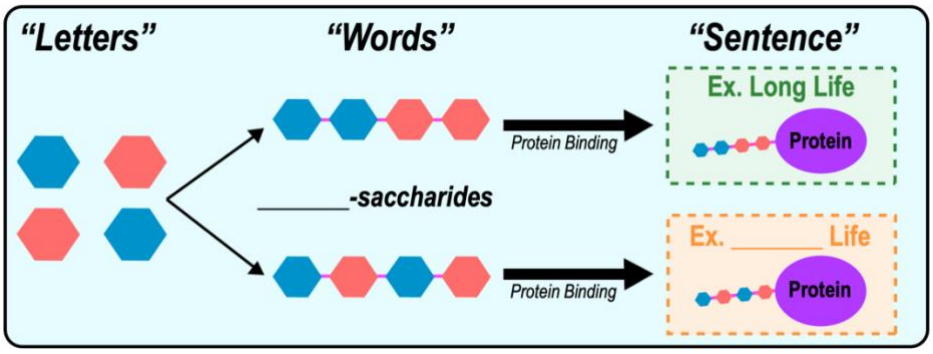
CONCEPT: LECTINS

Sugar Code

●*Sugar Code*: cells can use carbohydrates to _____ biological information leading to different *events*.

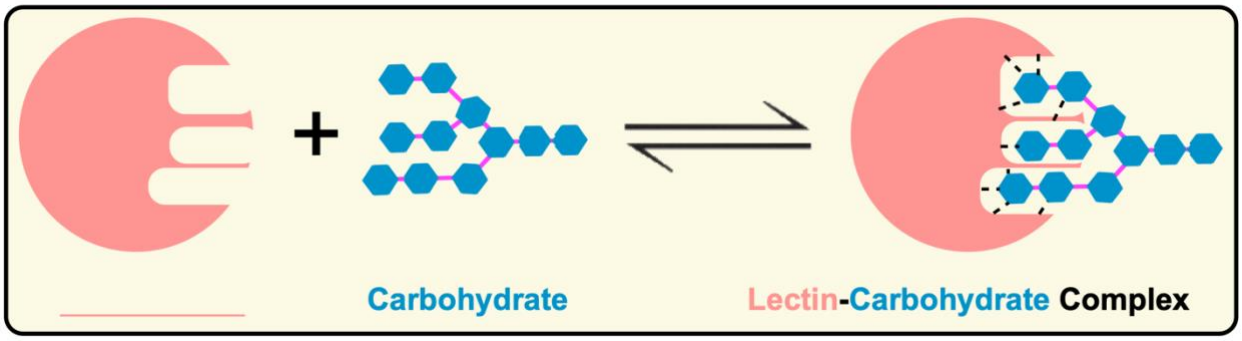
□ Sugar Code "*Letters*" = _____saccharides. □ Sugar Code "_____" = *Oligo*saccharides.



Lectins "Translate" the Sugar Code

●_____: *proteins* that _____ *carbohydrates* (in order to perform *many* biological functions).

□ Lectin-carbohydrate *interactions* are _____-*covalent* & *reversible* (just like *protein-ligand* interactions).



PRACTICE: The biochemical property of lectins that is the basis for most of their biological effects is their ability to bind to:

a) Amphipathic molecules.
b) Hydrophobic molecules.
d) Specific lipids.
e) Specific oligosaccharides.
e) Specific peptides.
f) Specific monosaccharides.

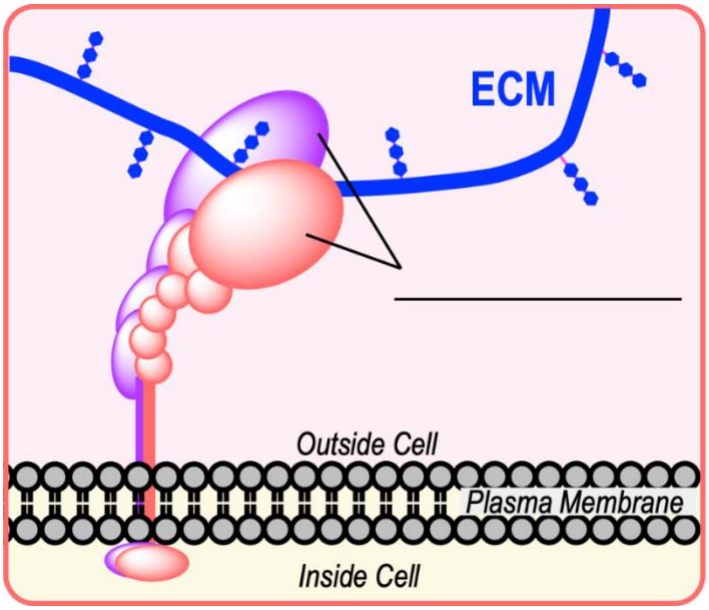
PRACTICE: Lectins are _____ while glycoproteins are _____.

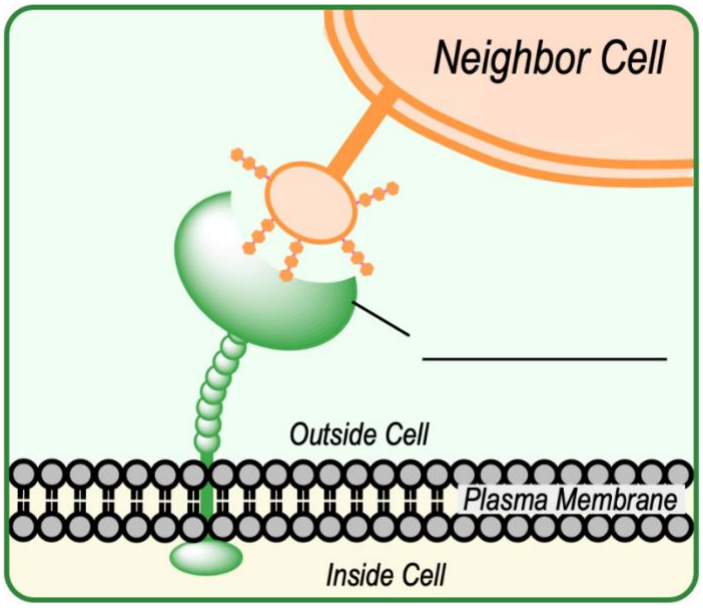
a) Lipids ; neurotransmitters.
b) Proteins that covalently bind to specific sugars ; proteins that are non-covalently bound to sugar residues.
c) Storage carbohydrates ; enzyme specific hydrolysis of storage carbohydrates.
d) Structural carbohydrates ; enzymes specific for hydrolysis of structural carbohydrates.
e) Proteins that noncovalently bind to specific sugars ; proteins that are covalently bound to sugar residues

CONCEPT: LECTINS

Integrins & Selectins

- _____: *plasma-membrane-lectins* mediating signals between a *cell* & the _____ *matrix*.
  - □ *Extracellular Matrix* (*ECM*): network of molecules _____ cells that provide s*tructural/biochemical* support.
- _____: *plasma-membrane-lectins* mediating *cell*-_____ recognition & adhesion.





PRACTICE: Which of the following statements regarding integrins is FALSE?

a) Integrins have quaternary protein structure.
b) Integrins are transmembrane protein but most of their functional parts are extracellular.
c) Integrins form tight junctions between cells.
d) The same integrins can have different affinities to ligands depending upon its conformation.

PRACTICE: Which of the following types of interactions is not used by lectins to recognize specific glycans?

a) Hydrogen bonds.
b) Salt bridges.
c) Van der Waals contacts.
d) Disulfide bonds.