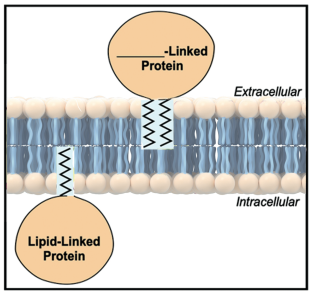
CONCEPT: LIPID-LINKED MEMBRANE PROTEINS

●Recall: *Lipid-Linked-Membrane-Proteins*: _____*-proteins covalently* anchored to ≥ 1 lipid groups within the bilayer.

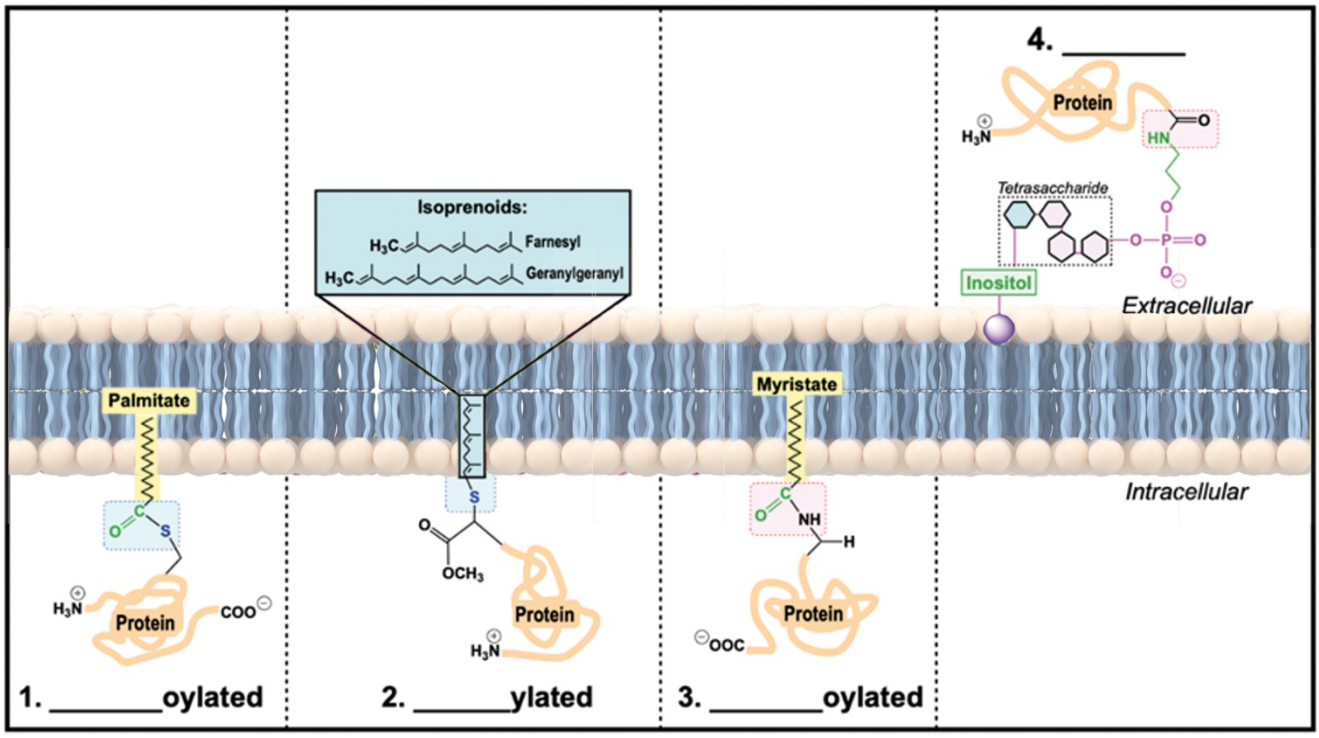
□ *Reversible* & relatively _____ association with membrane (in comparison to integral proteins).

□ Some types are exclusively linked to _____ *side of the membrane*.



Four Types of Lipid-Linked-Membrane-Proteins

Lipid-Linked **Membrane-Proteins**	**Lipid Group**	**Linkage to Protein & Modifications**	**Side of Membrane**
1) *Palmit*oylated Proteins	Fatty Acid: *Palmit*ate	_____-_____ link with any _____ residue.	_____cellular
2) *Pren*ylated Proteins	Iso*pren*oids: Farnesyl **or** Geranylgeranyl	-_____-_____ link with ____*-terminal* _____ residue. -_____ (-CH_3) Carboxyl.	Intracellular
3) *Myrist*oylated Proteins	Fatty Acid: *Myrist*ate	_____ link with ____*-terminal* _____ residue.	Intracellular
4) ***G***lycosyl-***P***hosphatidyl***i***nositol *(GPI)*	Fatty Acid: ***P***hosphatidyl***i***nositol	____*-terminal* _____ link to *complex lipid anchor*.	_____cellular



PRACTICE: Prenylated proteins:

a) Are integral membrane proteins.
b) Contain amide linkages to straight-chain fatty acids.
c) Contain ester linkages to straight-chain fatty acids.
d) Are post-translationally modified proteins.
e) None of the above.

PRACTICE: Which of the following lipid-linked proteins are located primarily on the exterior surface of the membrane?

a) Prenylated proteins.
b) Myristoylated proteins.
c) Plamitoylated proteins.
d) GPI-linked proteins.
e) Farnesyl-linked proteins.

PRACTICE: Which of the lipid anchor modification(s) is (are) readily reversible with the help of thioesterases?

a) Myristoylation.
b) Palmitoylation.
c) Glycosyl-phosphatidylinositolation (GPI).
d) All of the above.
e) None of the above.