structure and in this case it is a lipposome. So you will form a lipid bilayer that will form with the protein. And using this sphere you can do your test.

Also this kind of liposome technique is used to encapsulate drugs. When you deliver drugs just like that some of the chemicals can get broken down by enzymes and acidic and alkaline condition of your GI tract. When you encapsulate them, these drugs are protected until they get passed into the GI tract and then it is released and you will stand a better chance of the drug getting absorbed.

There is another way is that you can create a single lipid membrane, for example if you have two chambers. If you add a phospholipid from here to here you will form a lipid bilayer. It is just phospholipid you can study its function, but if you have protein molecules also within this artificial membrane then you have a way of studying how the protein affects the transport of molecules between these two chambers. Very useful. So these are the methods of isolating important membrane proteins for study.

But the question is how fluid are these membrane protein in the membrane. I mentioned that if you have an integral membrane protein it does not flip because it is covalently anchored to the two polar sides of the lipid bilayer. But it doesn't mean the protein cannot move. The next topic will be about the movement of the membrane protein in the membrane. This is a rather ingenious experiment. It demonstrates that membrane protein can move freely in the membrane it is not restricted in any particular area of the cell. So here you have two cells a mouse cell and a human cell. In mouse cell you have peculiar membrane protein and in humans you have membrane proteins that can only be found in human. What will happen if you fuse these two cells? This can be done. There are two methods of creating this hybrid cell. 1.) Polyethylene glycol- this is a polymer. If two cell are pressed against each other in the presence of this small molecule they will fuse. 2.) The second method is to use a Sendhi virus—they found out in the early 60's that the viral coat proteins of these viruses can promote the fusion of cells.

So the idea is that you create a hybrid cell and the membrane contains both the mouse membrane and the human cell membrane. if the membrane proteins are restricted to certain regions of the cell you will only have the mouse protein aggregation to the mouse membrane and the human proteins aggregating to the human membrane. And a method is developed by using flourscent antibodies that only recognize the mouse proteins another type of antibody that recognize the human protein and if the membrane proteins are localized then you will see patches of red flourscence. But this is not true, after the fusion you find that the mouse protein and the human proteins are mixed. This means that the mouse proteins can travel from its original membrane to the human membrane and vice versa. What you see as a result is a cell with green and red flourscence mixed up together. This tells us that the membrane is fluid and that the proteins can freely move from one area of the cell to another.

Now how fast does it move? The movement of the protein is also important in the function of the cell because some of the proteins are important like the receptor proteins.. If this receptor protein does not move very quickly then it reduces its chance to bind to the ligand. For example hormone receptor will have less of a chance to meet up with the ligand molecule in this case the hormone.