VIDEO TRANSCRIPT

A Look inside the Lab: Gel Electrophoresis – Video transcript

In the lab, we utilize gel electrophoresis a lot to identify different proteins of interest and diagnose what's wrong and what's going on with a patient. When we're looking at protein, that is referred to as a Western blot. And when you are looking at DNA, that is used with a different type of gel it's, um, agarose gels.

Westerns are a very useful tool to be able to understand what's missing, like you can see if a patient is missing a protein and how that may affect them. DNA, you can see that they're missing the gene, but sometimes we can't tell the effect that that has, we just know that it's missing. So, together, both of them are able to give you a more clear answer of what the problem may be.

For the Western, the gel is stood up and you take your pipette and you're loading over top. For an agarose DNA gel, it's laying down, but it's a very similar process of just letting it release slowly into the well, and then as soon as you apply the voltage, everything will start running down. We call it, run to red. So, they have black electrode and a red electrode, and it goes from positive to negative.

When you are running down the gel, the smaller your sizes, you're going to go further down. So, the higher your weight is you're going to be at the top, and then the smaller stuff will migrate down the gel.

The results of both a Western and a DNA agarose gel, they look similar, like you get black bands on a white background, but they're telling you very different things. One's telling you about a gene and the other about the protein. You kind of need both because you need to know about the gene as well as the protein. Um, they're very much related. So, both can help you get a good answer when you're trying to figure out what's going on. We do a lot of mystery diagnosis of what's going on with a patient, how to help them, so a lot of times we'll utilize both.