

## VIDEO TRANSCRIPT

### A Look inside the Lab: ELISA Plate Reader – Video transcript

An ELISA plate reader is basically a general plate reader that has a light source that allows you to change the wavelength of light that's emitted and has a sensor to tell you how much of that wavelength of light was absorbed.

So, different colors emit different wavelengths of light. Consequently, different colors absorb different wavelengths of light, so it uses these chemical properties to enable us to determine the concentration of a solution based on how dark that color is.

So, that's basically what the ELISA plate reader does, it measures the amount of absorbance of light in a particular sample.

Crucially for an ELISA, seeing that you want to quantify, for an example, a protein of interest, you need to know what intensity of your color corresponds to a specific concentration of protein. And to do that, you generate something called a standard curve, where you take known concentrations of your protein of interest, and usually dilute it to form a gradual drop in the amount of known protein you have that will correspond to a color.

So, the ELISA plate reader will take that standard curve, analyze how much absorbance is equal to concentration of protein, and then it will tell you what concentration your unknowns have based on their color intensity.

Before ELISAs, they used to do something called a radioimmunoassay which involves radioactive material which isn't ideal for disposal and for the scientists in general, but developing this ELISA procedure that doesn't require radioactive materials definitely helps with the environmental contamination and potential risk to the scientists.