

**Michael:**

Okay, next up we have peptidase. Again, my knowledge on peptidase is very lacking, so I have nothing clever to add at this point.

**Kiran:**

So peptidase is also a type of protease enzyme, which means that it breaks down proteins, but peptidase is responsible for taking the middle, mid-size chunks of proteins that have now been broken down by things like trypsin, and break it down into peptides. So peptides are much smaller chains of amino acids, usually around two to eight or nine amino acids together. Peptidase is responsible for cutting them down into those smaller peptides, which eventually will release the free amino acids so your body can actually utilize it.

Peptidase is also important in breaking down proteins that could cause allergenicity. So most people know proteins are the trigger for allergic reactions, and only proteins that are of certain size can be an allergen trigger. So, proteins that are 10-, 11-, 12-, 13-amino acids long are typically the ones that cause allergic reactions. So if a peptidase is there to break that 11-amino acid protein string down into a 6 and a 5, then it reduces the allergenicity of it.

So, I'll give you an example of where they use it in industry. A lot of people have latex allergies, right? And so a lot of people who work in the health care. You might know somebody that works in healthcare with blood and guts and wears latex all day long. Some people latex allergies will tend to have a reaction to the latex protein on their skin, so they get all these inflammation of the dermal layer. You, if you treat latex with a peptidase enzyme, you break down the latex protein enough so that it actually doesn't cause an allergic reaction. So, there are some peptidase-treated latex that doesn't cause an immune reaction. There are patents out there and all that on it. I actually worked with the professor out of University of Wisconsin, Madison, who was working on that patent. And that shows you what peptidase does in the body. But it's a very important to get to the free amino acids.

**Michael:**

That's interesting. I did know what it was, a little bit. I just didn't recognize because I've never read it before.

**Kiran:**

Yeah.

**Michael:**

Yeah, actual word. I'm reading the list of proteins, doing the list of enzymes off the screen, and I've never seen it spelled. And so, yeah, so is peptidase a general term like protease? Are there multiple peptidases?

## Enzyme Series 4: Peptidase Enzyme

**Kiran:**

Yeah.

**Michael:**

And so the proteases break down the big proteins into smaller, and then the peptidases break those down into even smaller. And with food sensitivities, especially, and reactions to, it's the protein in the food, so it's-

**Kiran:**

Yeah.

**Michael:**

... like gliadin, for example. A full gliadin molecule may trigger a reaction, whereas if it's broken down into four pieces, then it wouldn't.

**Kiran:**

Right. Exactly. Yup. And even among peptidases themselves they have different targets. So if you've got a peptidase that only breaks down at lysine and glycine or something like that, then you're only breaking down certain fragments. So you need a variety of peptidases that breaks down at different amino acid targets.

**Michael:**

Okay. That's interesting. It would make sense. So a peptidase would be found in digestive enzymes then, too.

**Kiran:**

Yeah. Important in digestive enzymes.

**Michael:**

Okay.