

How Peptides are Manufactured (Part 4)

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Financial Cost

Consider a situation where you are studying lab rats and hypothesize that Peptide A causes a particular rodent to get sick when eating a specific kind of cheese. Once you isolate this particular peptide from the rodent, you will need to be able to follow the scientific method in order to prove your hypothesis.

This will include running a number of tests to prove that Peptide A is the cause of the rodent's problem instead of some other factor. If you have to purchase and care for other rodents, plus keep trying to isolate Peptide A from all of them, it will cost a fortune. At the very least, if you create a synthetic version of Peptide A, you can study it in less expensive settings during the earlier stages.

Sample Purity and Research Development

Within the cellular environment, a single molecule can create an endless number of changes. Therefore, when it comes to trying to study peptides, you may have a difficult time isolating them from cells in sufficient quantity.

In addition, no matter how careful you are during the isolation process, you may wind up making mistakes that cause impurities in the peptide stock solution. Needless to say, this can easily cause you to get all the wrong results later on in your research efforts.

By contrast, when you create synthetic peptides, the process involved will yield only that particular peptide. As an added bonus, if you want to try changing a few amino acids, or even their position within the peptide, you can do so with ease. You may even find that using variations will help you predict what would happen in a natural cell, or in a complex organism at a later time.

Ethical Issues

Have you ever been mildly offended to hear a doctor say that animal studies imply nothing about what will happen to a human being taking any given medication? Did you feel even more upset when news was released indicating that your concerns were valid? While modern science has come a long way, it is sad to say that animal studies are performed over and over again, only to have the information ignored.

Even though you may not realize it, the vast majority of lab animals are killed at the end of any given experiment. In many cases, these animals suffer in excruciating pain, are denied proper food and hydration, or are forced to remain tied up so that various processes can be "studied". To add insult to injury, many lab animals are killed in inhumane ways in order to prevent other chemicals from interfering with the gathering of tissue samples. Regardless of whether a frog or fish is pithed or a dog heart stuck, the vast majority of people would choose some other way to gather information, or simply not have it at all.

When it comes to studying peptides, synthetic ones can easily be studied in cellular environments or even in lab grown tissue samples. As computer models and other simulated models become more accurate, it becomes easier to end reliance on lab animals. Using synthetic peptides can speed up this process as well as reduce the number of animals that suffer because of research methods based largely upon human ignorance.

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