Hydrolyzed Proteins

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There is a lot of misinformation on the Internet and in many natural health/medicine publications concerning hydrolyzed vegetable protein. These experts would have you believe that hydrolyzed vegetable protein is just a code word for monosodium glutamate (MSG) and that any product containing this ingredient is secretly dosing you with MSG in order for their product to taste good. While it is true that the commercial production of MSG does involve vegetable protein hydrolysis, the above notion is the equivalent of saying: Wine is made from grapes, therefore anything made from grapes is really just wine, whether they say it on the label or not. It is that absurd! Anyone touting such nonsense is either ignorant of basic food processing techniques, elementary biochemistry, or is being intentionally deceitful in order to sell you a specific product of theirs (or all of the preceding).

What is Hydrolysis?

Chemically speaking, hydrolysis means the splitting of a compound by the addition of a molecule of water, usually in the presence of a strong acid or base and high temperatures. This is the first step in the commercial production of MSG. However, hydrolysis can also be accomplished enzymatically. This is how it is done in the body (in vivo). In the stomach, hydrochloric acid and the enzyme pepsin split large protein molecules into smaller fragments (peptides) but the process does not require the very high temperatures necessary to effect this reaction in a test tube (in vitro). In the small intestine these peptides are further hydrolyzed to the smallest fragments: tripeptides, dipeptides and the smallest, free amino acids. The body accomplishes this under slightly alkaline conditions using a variety of enzymes (proteases) such as trypsin and chymotrypsin, and again, because of the enzymes, high temperatures are not required.

The Commercial Production of MSG

Shortly before World War II, Japanese scientists discovered that by subjecting certain seaweeds to a specific series of chemical reactions a unique powder could be obtained. When this powder was sprinkled on food, a remarkable enhancement in the flavor of that food occurred.

So profound was this change in flavor, they actually said they discovered a fifth taste in addition to bitter, salty, sweet and sour. They named this new taste Umami, literally delicious flavor or savory. Their process involved boiling seaweed in sulfuric acid then reacting the resultant 'soup' with sodium hydroxide (caustic lye). Some of what precipitated was purified, washed and dried, resulting in a fine, crystalline powder. The chemical name for this substance was monosodium glutamate or MSG. The first step took awhile and the seaweed was cooked in acid long enough for individual amino acids to be released from the parent proteins.

When they added the sodium hydroxide the amino acid glutamic acid (or glutamate) represented here by: **R---COOH** reacts as follows: **R--COOH + NaOH -------> R--COONa + H_2O**
In English, the glutamate residues (produced by acid hydrolysis) react with sodium hydroxzide yielding free monosodium glutamate and water.

Today most MSG is not produced from seaweeds but from scrap vegetable protein. A lot of soy is used because there are a lot of leftovers after producing such products as soy isolates, soymilk, soy nuts, etc. However, remember, to get MSG you have to add the sodium hydroxide! If you do not, you would only

have hydrolyzed soy protein or hydrolyzed vegetable protein if other vegetable sources were used, and **this is not MSG!**

True, there may be some trace amounts of MSG produced but this would also be the case in vivo, by the normal digestive processes of the body when you eat vegetables. Our hydrolyzed vegetable proteins do not undergo this process and therefore no MSG is produced.

If you crush grapes and get grape juice, then bottle it and pasteurize it, you do not have wine, although there may be some trace amounts of alcohol in there. To make wine, you have to follow a specific process! Same with MSG. We do not do this and our hydrolyzed vegetable protein is not MSG. To believe otherwise is total nonsense and it is blatantly not true.

If you never made it past 6th grade and all you ever read were fairy tales and children's stories, you might believe in unicorns. I could show you zoological texts, archeological texts, etc. but you would still believe in unicorns and you would believe that I am wrong when I say they do not exist. If clients do not want to listen to the real facts and continue read and believe these "scientific fairy tales", I just say: "Next"!

Our Hydrolyzed Collagen

Collagen is name given to a very important class of proteins in the body. This family is composed of over 17 different types of similar proteins, including the "elastins' (proteins capable of stretching and thus giving suppleness to the skin) and are the most abundant proteins in the body. They are also the primary constituent of connective tissue. Collagen is a very strong protein whose basic structure is a 3-stranded helix composed of alternating sequences of the amino acids: Lysine, Glycine, Proline and Hydroxyproline (think of a 3-stranded piece of rope and you'll get the idea).

NOTE: there is no glutamic acid here, so there cannot be any MSG. Our hydrolyzed collagen is prepared via the more expensive enzymatic process as opposed to acid or alkali hydrolysis. The benefit of this is that we are able to produce high levels of small peptides and free amino acids, resulting in rapid and more complete absorption by the body (i.e. a very high level of bioavailability).

The Benefits of Collagen Supplementation

Many athletes and body builders take protein supplements in addition to a diet containing whole proteins. These supplemental proteins are made largely from egg, milk (including whey), and soy proteins. While these proteins are fine they may not contain enough of the raw materials to effectively repair connective tissues - the amino acid ratios are not adequate. To keep collagen in good repair we need high levels of glycine, lysine, and proline. Our hydrolyzed collagen also contains significant amounts of naturally occurring hyaluronic acid and glucosamine, substances which help maintain proteoglycan structures which are closely associated with collagen in many tissues. Collagen and these so-called glycoaminoglycans are, among of things, specilaized to hold water, which is necessary for long-lived, supple and functional connective tissue (i.e. these help to keep you young!). However remember, collagen is NOT a complete protein and you cannot build a dietary protocol around this alone. In our program our collagen products are used to supplement our diet which is based around COMPLETE protein foods as well as whole foods and vegetables. Hydrolyzed collagen is best taken on an empty stomach and therefore our Blueberry, Cranberry and Pomegranate Drink and Raspberry Gelatin Mix make the perfect bedtime or evening snack.