

H2S Burlington

H2S Burlington - Small amounts of H2S or Hydrogen Sulfide are produced by some of the mammalian body cells. This specific substance has numerous biological signaling functions. There are just 2 other such gases which are presently known, nitric oxide or NO and carbon monoxide or CO.

The enzymes cystathionine gamma-lyase and cystathionine beta-synthase make gas from cysteine. This specific kind of gas acts as a vasodilator and also as a relaxant of smooth muscle. It is active in the brain, and facilitates long term potentiation and increases the response of NMDA receptor. This involves memory formation.

After some time, the gas turns into sulfite in the mitochondria. The thiosulfate reductase is responsible for this conversion and the sulfite is oxidized more to sulfate and thiosulfate by sulfite oxidase. The sulfates are excreted by the body in the urine.

The Effects of Hydrogen Sulfide

H2S has effects that are like NO or nitric oxide. The main difference is that it does not interact with superoxide and thus, does not have its potential to make peroxides. Now, hydrogen sulfide is being recognized as potentially protecting against cardiovascular sickness. For instance, the cardio-protective role effect of garlic is due to the catabolism of the polysulfide group in allicin to hydrogen sulfide. This reaction could depend on glutathione to reduce mediation.

Although their action mechanisms are different, both nitric oxide or NO and hydrogen sulfide have been proven to relax blood vessels. For instance, H2S activates ATP-sensitive potassium channels found in smooth muscle cells and nitric oxide activates the enzyme guanylyl cylase. Researchers remain unclear how the vessel-relaxing responsibilities are shared between Hydrogen Sulfide and nitric oxide. Some evidence exists to suggest that H2S or hydrogen sulfide contributes to the majority of the vessel-relaxing work in smaller blood vessels and NO or nitric oxide does the majority of the vessel-relaxing work in large blood vessels.

Some recent findings suggest significant cellular crosstalk of hydrogen sulfide and nitric oxide. The vasodilatory effects of these 2 gases have been proven to be equally dependent. Also, H2S or hydrogen sulfide reacts with intracellular S-nitrosothiols to form HSNO or the smallest S-nitrosothiol. Additionally, it has been suggested that a role of H2S or hydrogen sulfide in controlling the intracellular S-nitrosothiol pool.

Like nitric oxide, hydrogen sulfide is involved in smooth muscle relaxation which is involved in the erection of the penis. This particular piece of information has presented numerous new treatment opportunities for individuals who suffer from erectile dysfunction.

It has been discovered that in trisomy 21 or Down syndrome, the body makes more hydrogen sulfide, and conversely, in Alzheimer's disease, the brain's H2S concentration is actually severely decreased. H2S is also involved in the disease process of Type 1 Diabetes. It has been discovered that in Type 1 Diabetes, the beta cells in the pancreas generate more gas. This contributes to the beta cells death and to a decreased insulin production by those which remain.