

4th Annual Congress on

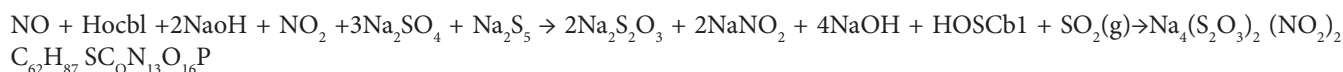
DRUG DISCOVERY & DESIGNING

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Research on synthesis and production of antidote of cyanide poison (sodium and hydrogen cyanide) known as sodasulphanecobalamin**Salako Olatunji**

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Sodasulphanecobalamin ($\text{Na}_4\text{S}_5\text{CoC}_{69}\text{N}_{15}\text{H}_{89}\text{O}_{26}$) is an antidote for cyanide poison; mainly high concentration of cyanides (sodium and hydrogen cyanide) which displaces the cyanides to a free toxic compound, thiocyanocobalamin. It also adds the amide group of protein when used. However, recent studies shows that this antidote can serve as a replacement for the antidote of orange agent (2,3,4,7-tetra chlorobenzodioxin) which displaced millions of Vietnam citizens during the world war-II. Though mercury (I) oxalate is been used for this antidote for the orange agent, we all know that mercury is highly toxic and poisonous to human. Antidote is produced by using 100 g of sodium nitrite (NaNO_2) heated with a burner in its combustion furnace at a temperature of 340 °C it produces 44.93 g of sodium oxide (Na_2O) in a crystalline form, while 21.74 g and 33.33 g of nitric oxide (NO) and nitrogen (IV) oxide will be liberated as gas respectively, thereafter the 4130 g of sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) decomposes on heating at 330 oC to give 2783.83 g of sodium sulfate (Na_2SO_4) and 1346.17 g of Na_2S_5 . Sodium polysulfide (Na_2S_5) which is a dark-red liquid gets separated by itself due to its separating agent characteristics, dissolved in the distilled water to give a solution of these component, furthermore 1,500 g of hydroxocobalamin red solid is dissolved by distilled water (H_2O) of volume of 1.115 dm³ (1liter and 115 ml) to give a red solution of hydroxocobalamin [$\text{C}_{62}\text{H}_{87}\text{C}_\text{O}\text{N}_{13}\text{O}_{15}\text{P}$] of 1 molar concentration. The resulting components were now mixed together in a reaction to produce TERTSodium1,2-diithiosulphite-3,4diintrosoCo- α (α -5,6diimethybenzylmizazonly)co- β -hydroxocobalamin($\text{Na}_4\text{S}_5\text{CoC}_{69}\text{N}_{15}\text{H}_{89}\text{O}_{26}$)



Hydroxocobalamin with the decomposition of sodium nitrite and sodium thiosulfate will led to a faster return to baseline mean arterial pressure compared with sodium nitrite with sodium thiosulfate; however, there was no difference between the antidote combinations in mortality, serum acidosis or serum lactate. The most efficient and reliable way to treat cyanide poison is by using sodasulphanecobalamin. It is non-carcinogenic, non-mutagenic and non teratogenic compound and its composition doesn't have any toxicity and health effect when administered.

Biography

Salako Olatunji is currently a PhD student at Federal Institute of Industrial Research Oshodi and worked as an ACS Chemistry Ambassador, Nigeria.

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