

Title:**Elemental sulfur as an oral or parenteral medical product****The prior art:**

Environmental pollutants as Epoxides, arene oxide, nitro groups, hydroxylamines and aflatoxins need Glutathione conjugation where the endogenous reactant is Glutathione in the presence of Glutathione S Transferase (cytosol microsomes). Since Glutathione is the major intracellular soluble sulfhydryl - containing compound, factors that regulate the biosynthesis and the composition have important consequences. The Glutathione conjugation and epoxide hydrolase are a common pathway for detoxification of primary metabolites to reduced Glutathione. These water soluble secondary metabolites are readily excreted in the bile and urine. Glutathione conjugation defects leads to accumulation of environmental pollutants. Treatment of the resultant diseases and syndromes were targeted at supplying sulfur as sulfates of different organic and inorganic substances with formation of stable toxin-medicine or toxin-sulfhydryl complexes by various medicines, with side effects related to these medicines.

The Problem:

All the earlier experiences addressed the symptomatology of the disease and none addressed the aetiology which was obscure. None provided the sulfur to bypass the deficiency and disorders of the glutathione S transferase to detoxify all the ingested or inhaled toxins.

The new in the invention:

Elemental Sulfur and its acid addition salts and derivatives for Glutathione S Transferase heterozygous and homozygous disorders and Epoxide Hydrolase heterozygous and homozygous disorders.

Title element and its acid addition salts and derivatives are physiologically acceptable, essential and are readily converted to acceptable counter parts by established procedures, they are pharmacologically active on the liver, lungs, hematopoietic system and all body systems and all malignancies and the autoimmune and immune mediate disorders and are thus useful when administered to warm blooded animals to induce detoxification of many

endogenous and exogenous metabolites. They are useful in terminating diseases associated with Glutathione S Transferase and Epoxide Hydrolase disorders whether acquired or congenital.

Sulfur as the element and its acid salts are prepared as elemental or as salts or as acid addition salts and derivatives compounds. They are simply elemental or compounded into different dosage - multi form medicament compositions.

The Detailed description:

Pure sulfur element and/or its acid addition salts and derivatives are prepared by all industrial techniques and processes, and bound by any binder.

Using plastic of sulfur to form medical interventional material and products, where medical interventional material includes (vascular, cardiologic, endovascular, urologic, hepatic, neurologic, gastrointestinal, cardiothoracic, orthopedic):

Where the acid salts refer to **salt** by definition which is any ionic compound not containing oxide ion or hydroxide ion **and acid salts** are compounds derived from an acid and base in which only a part of the acidic hydrogen is replaced by a basic radical, for example, the acid sulfate HSO_4 . Inorganic salt structures of Sulfur include salt structures having the formulae of R- sulfide (R-S), of R -hydrogen sulfide(R-SH) in inorganic compounds, of Sulfur-R (S-R), formula of sulfur nitrogen cations and anions (R-SN), of disulfide (RSSR), of R-dithiocarbamate, R-dithiocaboxylate, R-dithiophosphinate, R- thioxanthate, R- trithiocarbonate, formula of R-tetrathiometallate and of R- dithiolenes. Where R-would be an element of the periodic table. Where **examples include:** all phosphorus sulphides, all potassium sulfides, sulfur halides including, sulfur chlorides, sulfur fluorides (eg.; SF_4 , FSSF , SSF_2 , SF_6 , S_2F_{10}), sulfur amide (S_4N^-) tetrasulfur tetranitride, S_xN_y compounds etc., iron sulfides (eg. Fe_6S_7) carbon sulfur complexes, Se_2S_6 , ferredoxins, NSCl , $\text{S}_4\text{N}_3\text{Cl}^-$, $\text{S}_2\text{N}_2\text{H}_2$, $\text{NS}^+\text{AlCl}_4^-$, $\text{SNBr}_{0.4}$, $\text{SF}_3^+\text{BF}_4^-$, NbSBr_3 , ammonium sulfide). Where according to definition, sulfur salts include organic salts or esters having the formula of R-thiol (R-SH). This excludes by definition all organic compounds of sulfur containing COOH or OH . Organic esters containing N, NH_2 are also excluded.

Industrial applicability:

Inclusion of the element of Sulfur and/or its acid addition salts and derivatives in management protocols of Glutathione S Transferase heterozygous and homozygous disorders and Epoxide Hydrolase heterozygous and homozygous disorders, and glutathione depletion associated syndromes.

Claims

- 1- I claim the use of the element of sulphur in the production of medical products effective in management of glutathione S transferase and epoxide hydrolase enzymes associated disorders.
- 2- Whereupon the first claim the medical products are oral and parentral pharmaceutical products, medical foods, artificial milks and medicaments.
- 3- Whereupon the first claim the medical products contain the element of sulphur alone or element of sulphur added or formulated or combined with other substances that include acids or salts of acids or foods.
- 4- I claim the use of acid addition sulphur salts in the form of inorganic sulphur salts or organic sulphur salts not containing N, or NH_2 in the production of medical products effective in management of glutathione S transferase and epoxide hydrolase enzymes associated disorders.
- 5- Whereupon the fourth claim the medical products are oral and parentral pharmaceutical products, medical foods, artificial milks and medicaments.
- 6- Whereupon the fourth claim the medical products contain the inorganic sulfides added or formulated or combined with other substances that include acids or salts of acids or foods.