

# Development of an Antidote for Cyanide and Sulfide Poisoning

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## BACKGROUND

Cyanide is a rapidly acting poison, which, along with carbon monoxide, is the major cause of death from smoke inhalation. For treating a large number of casualties in the field, the best mode of treatment would be intramuscular injection of antidote, preferably by an autoinjector. The two treatments currently approved for cyanide poisoning—hydroxocobalamin (Cyanokit) and the combination of sodium nitrite and sodium thiosulfate (Nithiodote)—must be administered by intravenous injection. Thus, no agent currently exists for rapidly treating a large number of cyanide poisoned persons.

Another rapidly acting poison similar to cyanide, is hydrogen sulfide. People are exposed to hydrogen sulfide gas in a variety of occupations, most notably wastewater processing, and agriculture and petroleum industries. Up to 30% of oil workers have been exposed to sufficient amounts of hydrogen sulfide to have symptoms, and fatalities are not uncommon. No specific treatment currently exists for sulfide poisoning, and treatment consists of general supportive care.

## TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have developed an antidote that is effective against cyanide and sulfide poisoning.

## APPLICATIONS

The novel antidote has been shown previously to rescue animals from cyanide poisoning, but, in all these studies, it was administered by intravenous injection only. We have shown that it is effective when administered by intramuscular injection. Additional studies have shown that this antidote is also successful against hydrogen sulfide poisoning.

## ADVANTAGES

Antidote is effective against cyanide and sulfide poisoning

## STATE OF DEVELOPMENT

The current stage of development is in the experimental stage.

## INTELLECTUAL PROPERTY INFO

This technology is patent pending and available for licensing and/or research sponsorship

## PATENT STATUS

Patent Pending

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## OTHER INFORMATION

### KEYWORDS

Cyanide, carbon monoxide, hydrogen sulfide, antidote, poisoning

### CATEGORIZED AS

- ▶ **Materials & Chemicals**
  - ▶ Chemicals
- ▶ **Medical**
  - ▶ Other
- ▶ **Agriculture & Animal Science**
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