

Prussian Blue

In 2003, Prussian blue (ferric hexacyanoferrate) became the first FDA approved treatment for radioactive and non-radioactive cesium and thallium exposures. It is a synthetic pigment that has been used in art and printing since 1704 and is named Prussian blue because it was once used to dye Prussian military uniforms. It has a crystal lattice structure that attracts and traps monovalent alkali metals in the GI tract. Once bound, the elements cannot be reabsorbed into the bloodstream, so they are passed out of the body in the stool. Although Prussian blue prevents the absorption of cesium and thallium, it cannot treat the complications associated with these agents once they occur. If a patient develops complications of cesium or thallium toxicity, such as neuropathy, destruction of bone marrow, neutropenia and thrombocytopenia, supportive treatment should be given in addition to Prussian blue.

Radiogardase, the brand name of Prussian blue, is available as 0.5g capsules. The usual dose for cesium and thallium exposures is 3g orally three times a day for an adult and 1g orally three times a day for a child. Higher doses have been recommended by some for thallium poisoning. The duration of therapy for cesium toxicity is a minimum of 30 days; duration for thallium is unclear. The capsules can be swallowed whole, or the contents of the capsules can be dissolved in a liquid or sprinkled onto bland food. Because Prussian blue often causes constipation, the capsule contents may be dissolved in 50ml of 15% mannitol or taken with a high fiber diet.

Like thallium and cesium, potassium in the GI tract is also bound to Prussian blue. This can lead to hypokalemia, which is why caution should be taken when giving Prussian blue to patients with electrolyte imbalances or cardiac arrhythmias. Prussian blue is also known to cause blue stools, as well as blue mouth, tongue, and teeth if the powder is removed from the capsule prior to administration.

Prussian blue is included in the CDC Strategic National Stockpile due to the concern that cesium could be used as a component in an explosive device ("dirty bomb"). The only commercial distributor of Prussian blue in the US is Heyltex Corporation of Katy, Texas, 281-395-7040 or www.heyltex.com.

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DID YOU KNOW THAT... an FDA advisory panel recently recommended that propoxyphene be removed from the market?

Propoxyphene is available as Darvon and Darvocet (with acetaminophen) and is also available in generic form. The FDA advisory panel cited a lack of data supporting propoxyphene's efficacy as an analgesic as well as safety concerns. Propoxyphene has caused seizures, cardiotoxicity, respiratory depression and death in both intentional and unintentional overdoses. There is also concern about its safety when taken by the elderly. The panel's report will be taken into consideration when the FDA makes its final decision on whether propoxyphene should remain on the market.



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