

## (12) United States Patent Groman et al.

#### (54) POLYOL AND POLYETHER IRON OXIDE COMPLEXES AS PHARMACOLOGICAL AND/OR MRI CONTRAST AGENTS

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 933 days.

This patent is subject to a terminal disclaimer.

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- (51) Int. Cl.

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- (52) U.S. Cl. ..... 424/9.3; 424/9.351; 514/23;
  - 514/54; 514/59

(58) Field of Classification Search ...... 424/646, 424/9.3; 514/23, 54, 59

See application file for complete search history.

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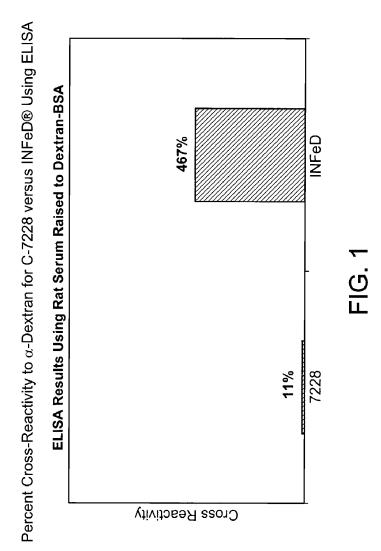
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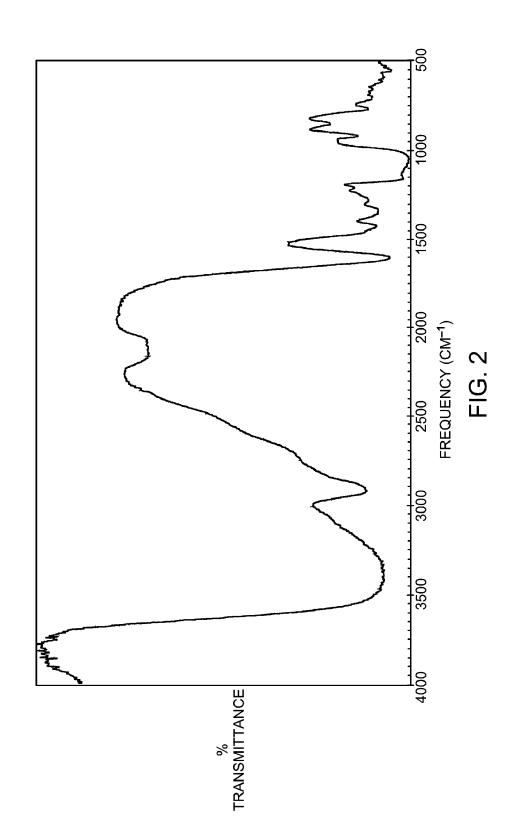
#### ABSTRACT (57)

Pharmacological compositions, and methods for administration, of the type employing an iron oxide complex with a polyol or polyether. The methods of administration may comprise parenteral administration of an effective dose of the complex formulated in a biocompatible liquid delivered at a rate of from about 1 mL/sec to less than 1 mL/min and wherein upon administration the complex provides minimal detectable free iron in a subject, and minimal incidence of anaphylaxis. The pharmacological compositions are of the type employing a polyol or polyether iron oxide complex, which, upon parenteral administration to a subject, are substantially immunosilent, provide minimal anaphylaxis and minimal free iron, and undergo minimal dissolution in vivo.

## 8 Claims, 13 Drawing Sheets

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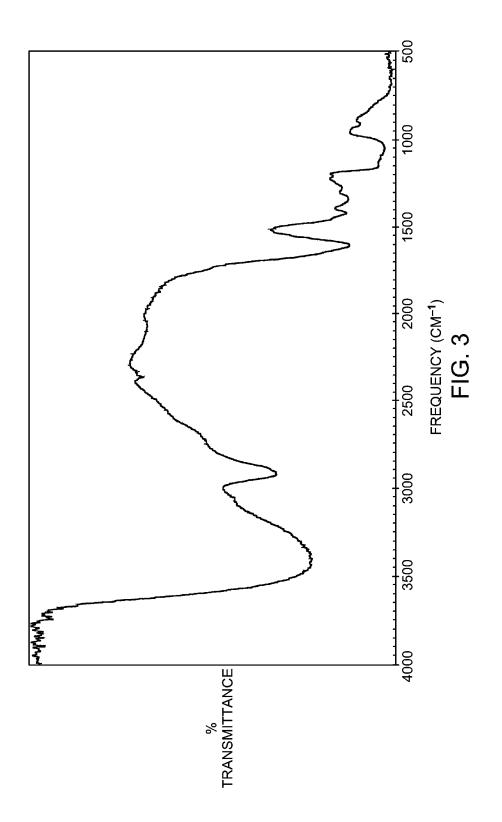
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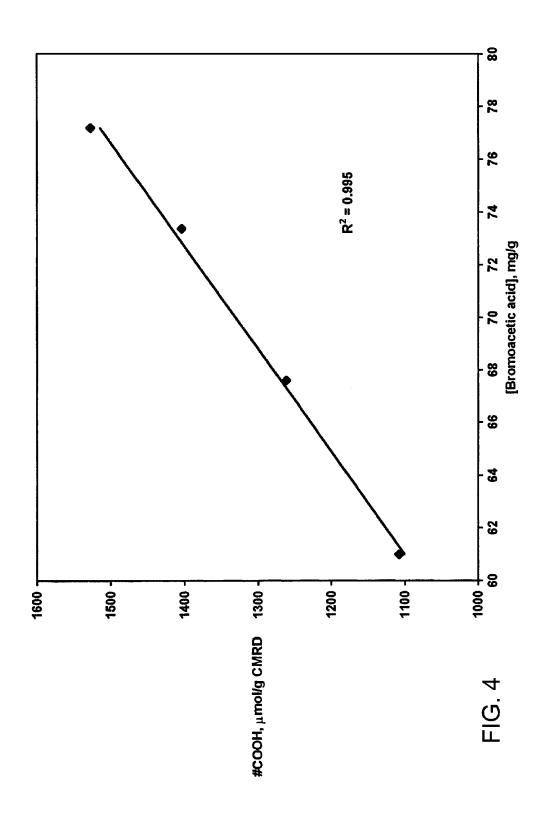
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