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Groman et al.

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(54) **HEAT STABLE COLLOIDAL IRON OXIDES
COATED WITH REDUCED
CARBOHYDRATES AND CARBOHYDRATE
DERIVATIVES**

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Related U.S. Application Data

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1999.

(51) **Int. Cl.**⁷ **A61B 5/055**; A61K 9/16;
A61K 9/50; A61K 31/70; A61K 31/715;
A01N 43/04

(52) **U.S. Cl.** **424/9.34**; 424/9.35; 424/493;
514/54; 514/59

(58) **Field of Search** 424/9.3, 9.32,
424/9.35, 493; 514/54, 59

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(57) **ABSTRACT**

Compositions, methods of making the compositions, and methods of using the compositions are provided for an enhanced magnetic resonance imaging agent and a hematitic agent, the agents comprising carboxyalkylated reduced polysaccharides coated ultrasmall superparamagnetic iron oxides. Methods of use of the carboxymethyl reduced dextran as a plasma extender are provided.

26 Claims, 12 Drawing Sheets

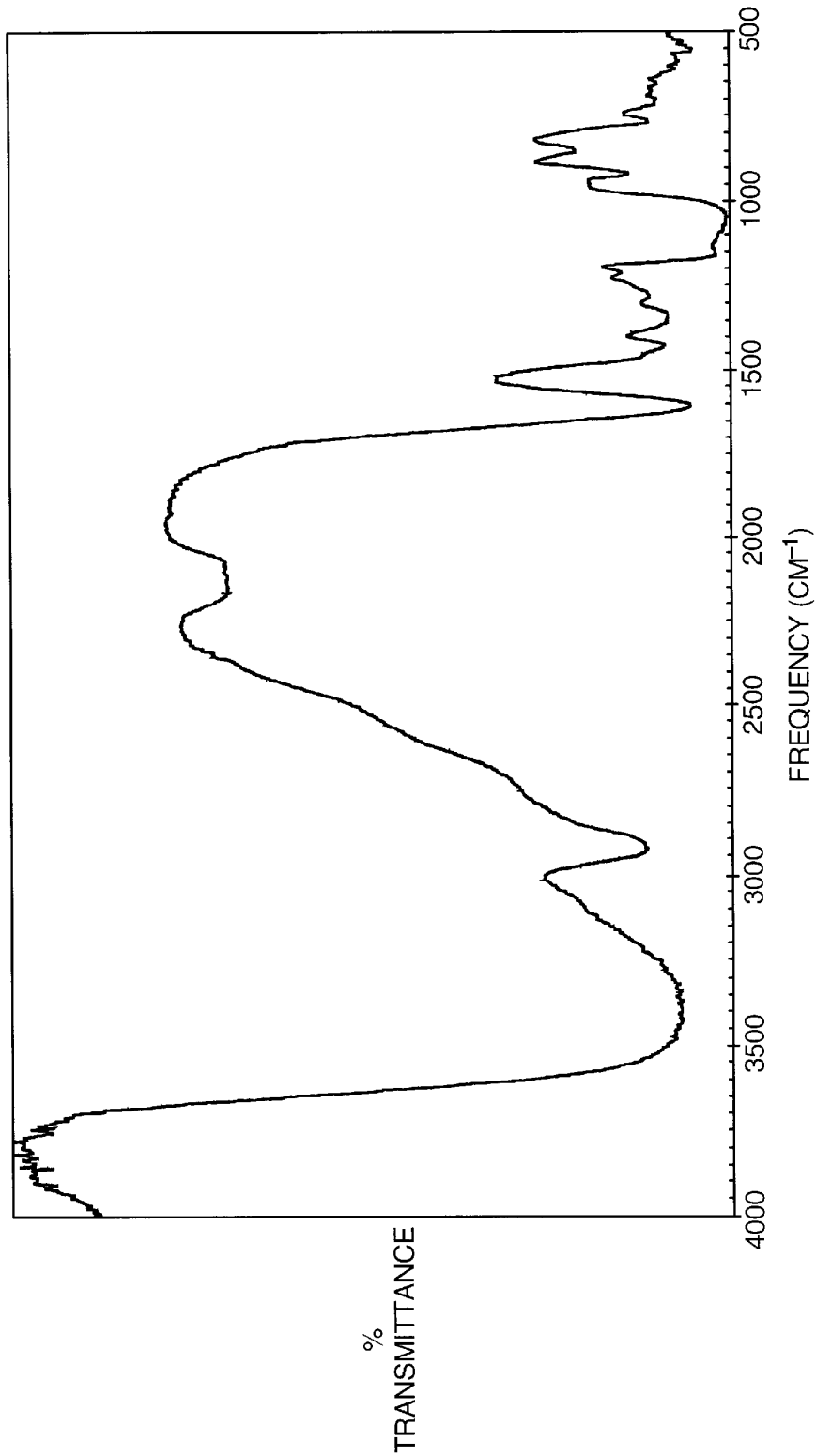


FIG. 1

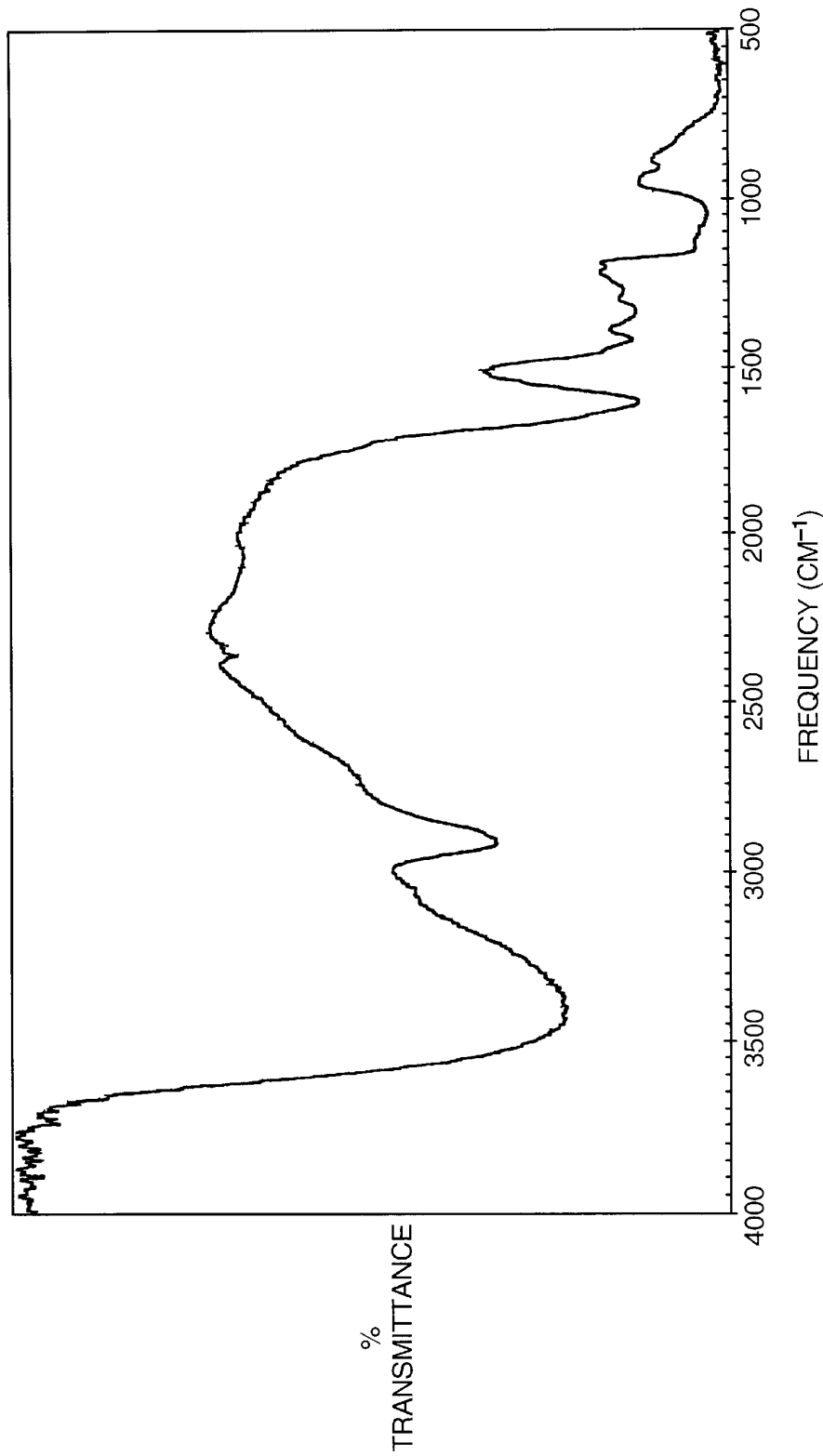


FIG. 2

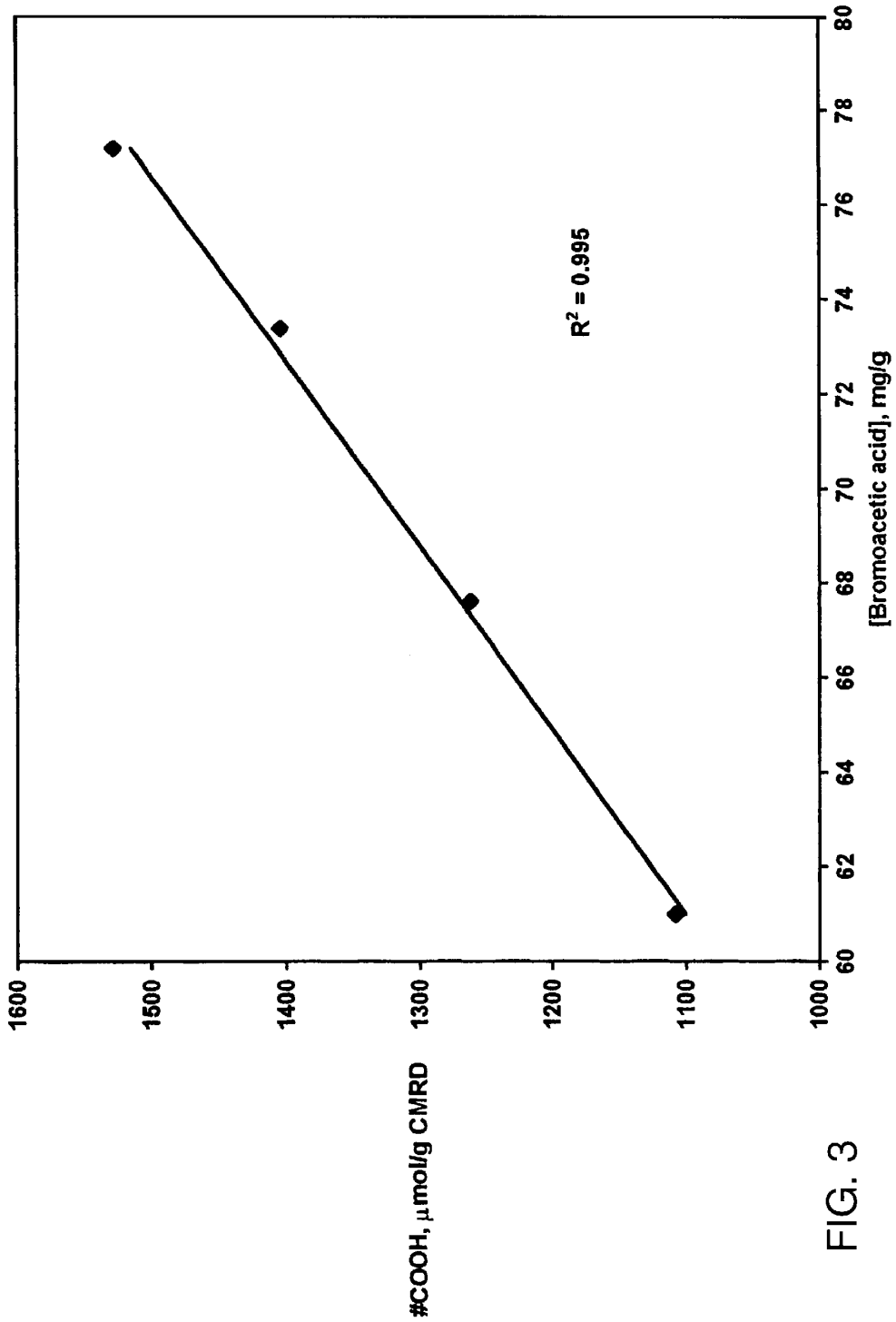


FIG. 3

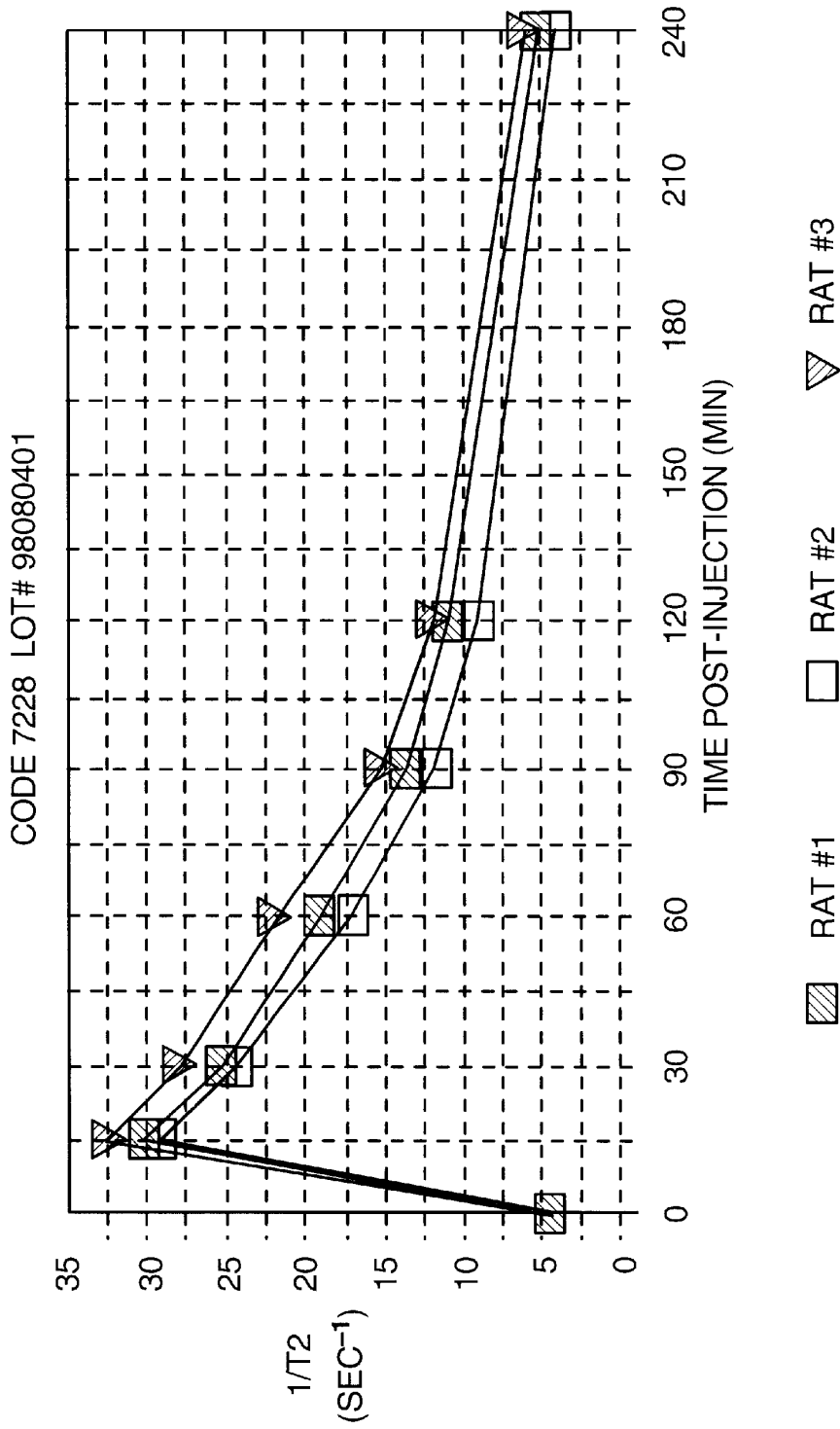


FIG. 4

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