MOLECULAR SIEVE ENCLOSED PARAMAGNETIC ION FOR DIAGNOSIS

ABSTRACT

The invention relates to a method of using molecular sieve-enclosed paramagnetic ions as image brightening or image contrast agents. In particular, zeolite enclosed trivalent gadolinium is useful in MRI studies of the entire gastrointestinal tract, providing excellent images. Zeolite-enclosed gadolinium complexes may be conveniently administered in oral preparations without side effects of diarrhea. Other transition metal ions, including divalent manganese may be enclosed in any suitable molecular sieve which has ion exchange properties sufficient to exchange the selected metal. The exchanged paramagnetic metal ion may be a free ion within the zeolite framework or ligated with a chelator. Alternatively, a paramagnetic metal ion may be included as part of the molecular sieve framework.