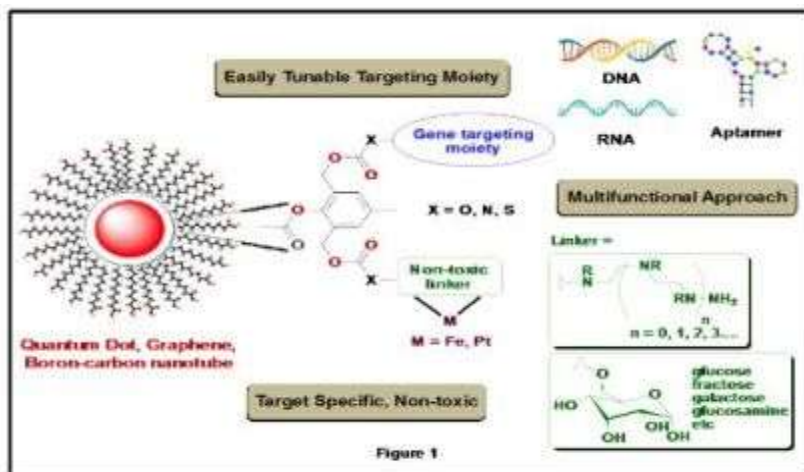


(54) Title of the invention : GENE TARGETED METAL DECORATED NANOMATERIALS AS NOVEL MRI AGENTS

(51) International classification	:A61K0049180000, A61K0049100000, C12N0015115000, A61K0049080000, C07H0017040000	(71)Name of Applicant : 1)Chitkara Innovation Incubator Foundation Address of Applicant :SCO: 160-161, Sector -9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
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(86) International Application No	:NA	3)KUMAR, Pankaj
Filing Date	:NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present invention relates to magnetic resonance imaging (MRI) contrast agents. Specifically, the present invention relates to smart nano-scaffolds as MRI contrast agents and method of preparation thereof. The present invention further relates to method of preparation of MRI contrast agents using nontoxic nanomaterials functionalized with non-toxic organic fragments via an aryl linker, optionally using gene targeting moiety. The present invention further relates to the use of nontoxic nanomaterials such as bio-friendly quantum dots of glucose, graphene or carbon and/or boron nanotube surface functionalized with non-toxic amine fragment and/or carbohydrate and gene targeting moiety such as nucleosides or nucleotides or DNA or RNA or aptamer or oligonucleotide via an aryl linker, wherein the non-toxic amine fragment and/or carbohydrate serve as chelating partner for metal (Fe or Pt). The present invention further relates to use of smart nano-scaffolds based MRI contrast agents in early detection of cancer or brain tumor.



No. of Pages : 20 No. of Claims : 12