Magnetic Hydrogel Particles And Methods Of Use

Tech ID: 34193 / UC Case 2023-759-0

BRIEF DESCRIPTION

A novel composition of particles with a magnetic core encapsulated in a polymeric gel, offering versatile applications in biotech and research.

FULL DESCRIPTION

This technology encompasses the development of unique particles that consist of a magnetic core coated in a polymeric gel, specifically polyacrylamide, with variations in the gel composition to include additives like albumin. These particles are designed to be functionalized and labeled for various applications, including but not limited to, fluorescence labeling and specific molecule capture. The production method involves emulsifying magnetic beads with monomers and a polymerization initiator to encapsulate the beads in the polymer gel.

SUGGESTED USES

- Targeted drug delivery and controlled release systems.
- Biomolecule separation and purification.
- Diagnostic assays and molecular imaging.
- High-throughput screening and sorting in research and clinical laboratories.
- Support structures for enzyme immobilization and biocatalysis

ADVANTAGES

- High versatility in functionalization and labeling.
- Uniform distribution and size control of particles.
- Capability to inhibit phase separation and condensate formation.
- Enhanced stability and specificity in target molecule capture.
- Efficient separation and purification facilitated by magnetic core.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

in vitro compartmentalization, directed evolution, aptamers, SELEX, hydrogel, microbead, fluorescence in situ hybridization, activity-based probes

CATEGORIZED AS

- **Imaging**
  - Molecular
- **Medical**
  - Diagnostics
- **Research Tools**
  - Screening Assays

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