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De Luca et al.

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[54] **PREPARATION OF BIODEGRADABLE MICROSPHERES USEFUL AS CARRIERS FOR MACROMOLECULES**

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[52] **U.S. Cl.** **264/4.7**; 264/4.3; 424/79; 424/85; 424/88; 424/94.3; 424/94.64; 424/486; 424/487; 424/501; 428/402.22; 514/963

[58] **Field of Search** 264/4.7; 428/402.22; 424/486, 487, 501; 514/963

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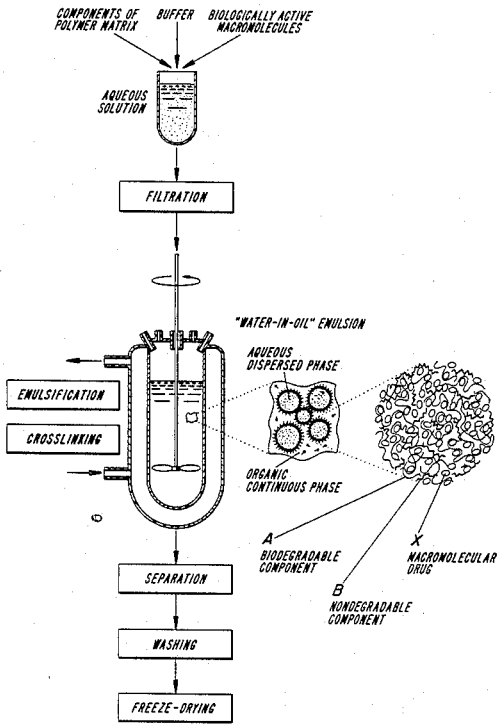
[57] **ABSTRACT**

A method for preparing biodegradable microspheres having a three-dimensional network in which biologically active macromolecular agents are physically entrapped therein. The microsphere is able to degrade and release the macromolecular agent at a controlled rate. The method involves emulsifying a vinyl derivative of a biodegradable hydrophilic polymer, a water-soluble monovinyl monomer and a biologically active macromolecule in water, and copolymerizing the biodegradable hydrophilic polymer and the water-soluble monovinyl monomer such that the biologically active macromolecule is entrapped therein.

13 Claims, 2 Drawing Sheets