



Review Article

**A REVIEW NANOERYTHROSOMES: MILESTONE IN NOVEL
DRUG DELIVERY SYSTEM**

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ABSTRACT

Drug delivery is now entering quite exciting and challenging era. The search for an innovative drug delivery system which is cost effective, biocompatible, targeted and pharmacologically effective resulted into usage of cellular carriers like leukocytes, fibroblasts, erythrocytes, etc. Among them erythrocytes are most abundant cells circulating throughout the body. These are biocompatible, biodegradable, having very long circulation half lives and can be loaded with a variety of chemically and biologically active compounds using various chemical and physical methods. Erythrocytes are specially engineered vesicular systems that are chemically cross-linked to human erythrocytes upon which a lipid bilayer is coated. These vesicles have been proposed as useful encapsulation systems for macromolecular drugs. Nanoerythrocytes are erythrocytes prepared by extrusion of erythrocyte ghost to produce small vesicles suspension using polycarbonate filter having a diameter 100 nm on which desired drug is incorporated using glycerol as cross linker. Nanoerythrocytes have added benefits like greater retention time, bypasses macrophage uptake and systemic clearance. The use of nanoerythrocytes looks promising for a safe and sure delivery of various drugs for treating diabetes mellitus, rheumatoid arthritis, HIV infection, drug addiction, cancer, etc. However the concept needs further optimization to become a routine drug delivery system.

KEY WORDS: Erythrocytes, Erythrocytes, Nanoerythrocytes, Extrusion, Erythrocyte ghost.