

عنوان مقاله:

Combined effects of PEGylation and particle size on uptake of PLGA particles by macrophage cells

محل انتشار:

مجله علوم نانو، دوره 2، شماره 4 (سال: 1394)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Tina Moayedian - School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran

Fatemeh Mosaffa - School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran|Biotechnology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

Bahman Khameneh - Biotechnology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran|Student Research Committee, Mashhad University of Medical Sciences, Mashhad, Iran

Mohsen Tafaghodi - School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran|Nanotechnology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

خلاصه مقاله:

Objective:At the present study, relationship between phagocytosis of PLGA particles and combined effects of particle size and surface PEGylation was investigated. **Materials and Methods:**Microspheres and nanospheres (3500 nm and 700 nm) were prepared from three types of PLGA polymers (non-PEGylated and PEGylation percents of 9% and 15%). These particles were prepared by solvent evaporation method. All particles were labeled with FITC-Albumin. Interaction of particles with J744.A.1 mouse macrophage cells, was evaluated in the absence or presence of 7% of the serum by flowcytometry method. **Results:** The study revealed more phagocytosis of nanospheres. In the presence of the serum, PEGylated particles were phagocytosed less than non-PEGylated particles. For nanospheres, this difference was significant ($P<0/05$) and their uptake was affected by PEGylation degree. In the case of microsphere formulation, PEGylation did not affect the cell uptake. In the serum-free medium, the bigger particles had more cell uptake rate than smaller ones but the cell uptake rate was not influenced by PEGylation. **Conclusion:**The results indicated that in nanosized particles both size and PEGylation degree could affect the phagocytosis, but in .micron sized particles just size, and not the PEGylation degree, could affect this

کلمات کلیدی:

PLGA particles, PEGylation, Phagocytosis, Size

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/893493>



