



Synthesis and use of pHEMA microbeads with human EA.hy 926 endothelial cells

Submitted by Emmanuel Lemoine on Tue, 06/10/2014 - 11:22

Titre	Synthesis and use of pHEMA microbeads with human EA.hy 926 endothelial cells
Type de publication	Article de revue
Auteur	Nyangoga, Hervé [1], Zecheru, Teodora [2], Filmon, Robert [3], Baslé, Michel-Félix [4], Cincu, Corneliu [5], Chappard, Daniel [6]
Editeur	Wiley
Type	Article scientifique dans une revue à comité de lecture
Année	2009
Langue	Anglais
Date	2009/05/01
Numéro	2
Pagination	501 - 507
Volume	89B
Titre de la revue	Journal of Biomedical Materials Research Part B: Applied Biomaterials
ISSN	1552-4981
Mots-clés	biomaterial [7], drug delivery [8], Endothelial Cells [9], EPR effect [10], pHEMA [11]
Résumé en anglais	<p>Cancer has become a major problem in public health and the resulting bone metastases a worsening factor. Facing it, different strategies have been proposed and mechanisms involved in tumor angiogenesis are being studied. Enhanced permeability retention (EPR) effect is a key step in designing new anticancer drugs. We have prepared poly 2-hydroxyethyl methacrylate (pHEMA) microbeads to target human endothelial EA.hy 926 cells, a cell line derived from human umbilical vein endothelial cells. Microbeads were synthesized by emulsion precipitation method and carried positive or negative charges. EA.hy 926 cells were cultured in 24-well plates and microbeads were deposited on cells at various times. Scanning and transmission electron microscopy, flow cytometry, confocal microscopy, and three-dimensional (3D) reconstruction were used to characterize microbeads and their location outside and inside cells. Microbeads were uptaken by endothelial cells with a better internalization for negatively charged microbeads. 3D reconstruction of confocal optical sections clearly evidenced the uptake and internalization of microbeads by endothelial cells. pHEMA microbeads could represent potential drug carrier in tumor model of metastases.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua3303 [12]
DOI	10.1002/jbm.b.31240 [13]
Lien vers le document	http://dx.doi.org/10.1002/jbm.b.31240 [13]

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- [13] <http://dx.doi.org/10.1002/jbm.b.31240>

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