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1: [Eur J Pharm Sci](#). 2007 Mar;30(3-4):295-302. Epub 2006 Dec 10.

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Distribution and clearance of bioadhesive formulations from the olfactory region in man: effect of polymer type and nasal delivery device.

[Charlton S](#), [Jones NS](#), [Davis SS](#), [Illum L](#).

School of Pharmacy, University of Nottingham, University Park, Nottingham NG7 2RD, UK.

There is an increasing need to identify novel approaches by which to improve the efficiency of drug transport from the nasal cavity (olfactory region) to the CNS, especially for treatment of central nervous system disorders. It is suggested, that one approach is the combination of active targeting of a bioadhesive formulation, that will retain the drug at the absorption site, potentially in combination with, an absorption enhancer. Two low methylated pectins, LM-5 and LM-12 were selected for evaluation as drug delivery systems, due to their ability to gel in the nasal cavity and their bioadhesive characteristics, together with chitosan G210, which acts both as a bioadhesive material and as an efficient absorption enhancer. It was found that all of the bioadhesive formulations were able to reach the olfactory region in the nasal cavity of human volunteers when delivered using a simple nasal drop device. Furthermore, the formulations displayed a significantly increased residence time on the epithelial surface. This was in contrast to a non-bioadhesive control delivered with the same device. In contrast, a pectin formulation administered with a nasal spray system did not show an increase in residence time in the olfactory region. It was further shown that the reproducibility of olfactory delivery of a polymer formulation was significantly better intra-subject than inter-subject.

PMID: 17223022 [PubMed - indexed for MEDLINE]

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