

Title (en)  
ACCUMULATION OF DRUGS INTO LIPOSOMES BY A PROTON GRADIENT

Publication  
**EP 0472639 A4 19920701 (EN)**

Application  
**EP 90908748 A 19900515**

Priority  
US 35249789 A 19890515

Abstract (en)  
[origin: WO9014105A1] The present invention relates to pharmaceutical compositions and methods of making liposome containing compositions exhibiting characteristics of great uptake. This uptake may be greater than what would be expected by the relationship defined by the Henderson-Hasselbach equation. The present invention also relates to liposomal compositions wherein the liposome comprises in part a membrane-stabilizing component, for example, cholesterol, which exhibits favorable characteristics in preventing rapid release of a pharmaceutical agent selected from the group consisting of quinine, quinidine and diphenhydramine after it has been formulated in liposomes. The present invention also relates to novel liposomal compositions comprising the bronchodilators metaproterenol, isoproterenol and terbutaline. The present invention also relates to minimum buffering capacity required to achieve liposomal encapsulation of pharmaceutical agents with maintenance of a major portion of the initial pH gradient.

IPC 1-7  
**A61K 43/00**; **A61K 37/22**

IPC 8 full level  
**A61K 9/127** (2006.01); **A61K 31/135** (2006.01); **A61K 31/165** (2006.01); **A61K 31/415** (2006.01); **A61K 31/435** (2006.01); **A61K 31/47** (2006.01); **A61K 31/49** (2006.01); **A61K 31/54** (2006.01); **A61K 31/55** (2006.01); **A61K 45/00** (2006.01); **A61K 47/24** (2006.01)

CPC (source: EP)  
**A61K 9/1278** (2013.01)

Citation (search report)  
• [YD] WO 8806442 A1 19880907 - LIPOSOME CO INC [US]  
• [Y] WO 8705803 A1 19871008 - DRACO AB [SE]  
• [Y] EP 0152379 A2 19850821 - CIBA GEIGY AG [CH]  
• [XD] BIOCHEMISTRY vol. 27, no. 6, 22 March 1988, EASTON, PA pages 2053 - 2060; L.D.MAYER ET AL.: 'influence of ion gradients on the transbilayer distribution of dibucaine in large unilamellar vesicles'  
• See references of WO 9014105A1

Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB IT LI LU NL SE

DOCDB simple family (publication)  
**WO 9014105 A1 19901129**; CA 2056435 A1 19901116; EP 0472639 A1 19920304; EP 0472639 A4 19920701; JP H04505616 A 19921001; MX 9203793 A 19920901

DOCDB simple family (application)  
**US 9002736 W 19900515**; CA 2056435 A 19900515; EP 90908748 A 19900515; JP 50824190 A 19900515; MX 9203793 A 19920629