IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, December 2023

A Review on Liposomes – A Novel Drug Delivery

System

Ashwini Ashtankar, M. Bilal Sufi, Rajlaxmi Deolekar, Dipali Katare

New Montfort Institute of Pharmacy, Ashti,Wardha, Maharashtra, India ashuashtankar@gmail.com

Abstract: The Greek word "liposome" means "fat" and "soma" means body. Liposomes are sphere- shaped vesicles made of cholesterol and phospholipids. Its hydrophobic and lipophilic nature makes it a very promising mechanism for the delivery of medications. The goal of the new method of drug delivery is to target the drug directly at the active site. However, the application and development of these products remain challenging because of the costly and time-consuming processes involved in their creation and production. Therefore, in order to overcome these obstacles, further research and development are needed.

Keywords: Phospholipids, Control release, Liposome and Characteristics

REFERENCES

- [1]. Joshi A J, R P Patel Liposomes: Emerging Trends in Novel Drug Delivery with Present and Future Challenges International Journal of Pharmaceutical and Biological Archives 2015; 6(2):3 – 8
- [2]. Maurya SD, Prajapati S, Gupta A, Saxena G, Dhakar RC, Formulation development and evaluation of ethosome of stavudine, Int J Pharm Edu Res. 2010; 13(16).
- [3]. Mishra H, Chauhan V, Kumar K, Teotia D. A comprehensive review on Liposomes: a novel drug delivery system. Journal of Drug Delivery and Therapeutics. 2018; 8(6):400-404. https://doi.org/10.22270/jddt.v8i6.2071
- [4]. Emanuel N, Kedar E, Bolotin EM, Smorodinsky NI,Barenholz Y. Preparation and characterization ofdoxorubicinloaded sterically stabilized immunoliposomes.Pharm. Res. 1996; 13: 352-35
- [5]. Sipai AM, Vandana Y, Mamatha Y, Prasanth VV. Liposome: An overview. J Pharm Sci Innovation, 2012; 1: 13-21.
- [6]. Giuseppina B, Agnese M. Liposomes as nanomedical devices, Int J Nanomed, 2015; 10: 975-999.
- [7]. Iqbal, M.A.; Md, S.; Sahni, J.K.; Baboota, S.; Dang, S.; Ali, J. Nanostructured lipid carriers system: Recent advances in drug delivery. J. Drug Target, 2012, 20(10), 813-830.
- [8]. Manzoor, A.A.; Lindner, L.H.; Landon, C.D.; Park, J.Y.; Simnick, A.J.; Dreher, M.R.; Das, S.; Hanna, G.; Park, W.; Chilkoti, A.; Koning, G.A.; ten Hagen, T.L.; Needham, D.; Dewhirst, M.W. Overcoming limitations in nanoparticle drug delivery: triggered, intravascular release to improve drug penetration into tumors. Cancer Res., 2012, 72(21), 5566-5575.
- [9]. Kaur D., Kumar S., Niosomes: present scenario and future aspects. Journal of Drug Delivery and Therapeutics, 2018; 8(5):35-43. https://doi.org/10.22270/jddt.v8i5.1886.
- [10]. Hong MS et al., Prolonged blood circulation of methotrexate by modulation of liposomal composition, Drug Delivery 2001; 8:231–237.
- [11]. Jesorka A, al., Liposomes: technologies and analytical applications, Annu. Rev. Anal. Chem. 1 (2008) 801– 832
- [12]. Vemuri S, et al., Preparation and characterization of liposomes as therapeutic delivery systems: a review, Pharm. Acta Helv. 1995; 70:95–111.
- [13]. Elsaied Hamada Elsaied, Hamdy Mohamed Dawaba, Elsherbini Ahmed Ibrahim, Mohsen Ibrahim Afouna. Investigation of proniosomes gel as a promising carrier for transdermal delivery of Glimepiride. Universal Journal of Pharmaceutical Research. 2016; 1(2): 1-18.

Copyright to IJARSCT www.ijarsct.co.in DOI: 10.48175/IJARSCT-14045



333

IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, December 2023

- [14]. Sipai Altaf Bhai. M*, Vandana Yadav, Mamatha. Y, Prasanth V.V Department of pharmaceutics Gautam college of Pharmacy,Lipoosmes an Overview,Journal of pharmaceutical and Scientific innovation,accepted on 24/01/12.
- [15]. Kant Shashi*, Kumar Satinder, Prashar Bharat ,A complete review on liposomes International Research Journal Of Pharmacy ISSN 2230-8407
- [16]. Sharma Vijay K ,Liposomes present prospective and future challenges ,International journal of current pharmaceutical review and Research Vol 1,Issue 2 , Aug-Oct-2010 ISSN :0976 822X
- [17]. Formulation and evaluation of liposomal drug delivery system of decitabine T. Veena* Dr. Manichandrik, Madav, Madhuri, Mounika, Bindu Rani, Ashwini Formulation and evaluation of liposomal drug delivery system of decitabine, Vol 6,Issue 3, July -Sep 2017.
- [18]. Nasim Karami1, Eskandar Moghimipour2,3, Anayatollah Salimi2,3 Liposomes as a Novel Drug Delivery System: Fundamental and Pharmaceutical Application.
- [19]. Yadav Y, Kumar S , Pandey D, Dutta RK, Liposomes for drug delivery ,Journal of Biotechnology and Biomaterials , 2017.
- [20]. Ugochukwu AE, Nnedimkpa OJ, Rita NO. Preparation and characterization of Tolterodine tartrate proniosomes, Universal Journal of Pharmaceutical Research. 2017; 2(2):22-25.
- [21]. Bangham AD, Horne RW: Negative Staining of Phospholipids and Their Structural Modification by Surface-Active Agents As Observed in the Electron Microscope. Journal of molecular biology 1964: 660–668.
- [22]. Horne RW, Bangham AD, Whittaker VP: Negatively Stained Lipoprotein Membranes. Nature 1963: 1340.
- [23]. Bangham AD, Horne RW, Glauert AM, Dingle JT, Lucy JA: Action of saponin on biological cell membranes. Nature 1962: 952–955.
- [24]. Diakowski, W.; Ozimek, L.; Bielska, E.; Bem, S.; Langner, M.; Sikorski, A.F. Cholesterol affects spectrinphospholipid interactions in a manner different from changes resulting from alterations in membrane fluidity due to fatty acyl chain composition. Biochim. Biophys. Acta, 2006, 1758(1), 4-12.
- [25]. Anwekar H, Patel S, Singhai AK, Liposomes as drug carriers, International journal of Pharmacy and life sciences, July 2011.
- [26]. Ejiogu Deborah Chioma. Formulation and evaluation of etodolacniosomes by modified ether injection technique. Universal Journal of Pharmaceutical Research. 2016; 1(1): 1-6.
- [27]. John DF, Yunus AA, Chigbo UJ, Paul US, Ikenna E. Tolnaftate loaded liposomes-design, and in-vitro evaluation. Universal Journal of Pharmaceutical Research. 2016; 1(2): 29-31.
- [28]. HAH Rongen, ABult, WP van, Bennekom J Immuno. Methods. 1997; 204:105-133.
- [29]. Kaur G, Paliwal S. Formulation and evaluation of etoricoxib microbeads for sustained drug delivery. Universal Journal of Pharmaceutical Research. 2019; 4(1): 35-39.
- [30]. New RRC. Preparation of liposomes. In: New RRC.(Ed.), Lipsomes: a practical approach, IRL Press, Oxford. 1990; 33: 104.
- [31]. Sunday OS. Colon-targeted drug delivery systems: design, trends and approaches. Universal Journal of Pharmaceutical Research. 2017; 2(4): 46-50.
- [32]. Jr F Szoka, DPapahadjopoulos. Proc. Natl. Acad. Sci. USA. 1978; 60:4194-4198
- [33]. Chen X, Huang W, Wong BC, Yin L, Wong YF, Xu M, ET al. Liposomes prolong the therapeutic effect of anti-asthmatic medication via pulmonary delivery. Int J Nanomed, 2012; 7:1139-1148.
- [34]. Fujisawa T, Miyai H, Hironaka K, Tsukamoto T, Tahara K, Tozuka Y, et al. Liposomal diclofenac eye drop formulations targeting the retina: formulation stability improvement using surface modification of liposomes. Int J Pharm, 2012; 436: 564-567.

DOI: 10.48175/IJARSCT-14045

