

A nano Carrier Extracted from Archaea Called Archaeosome Examination of Cisplatin Loading

Bozorgnejad A*¹, Baghi F², Akbarzadeh A³, Arjmand M⁴

^{1,2}Department of chemical engineering, science and research branch, Islamic Azad University, Tehran, Iran

³Department of pilot biotechnology, Pasteur Institute of Iran, Tehran, Iran

⁴Department of chemical engineering, Islamic Azad University, South Tehran branch, Tehran, Iran

Abstract

Aim and Background .Archaeosome is known as a new lipid carrier for targeted drug delivery in cancer therapy .The anti cancer drug , Cisplatin , is encapsulated in archaeosome to reduce the side effects of drug on other cells and offer more dosage of drug on target cell.

Material and Method .Archaeosome was extracted from methanogens and after being dissolved in phosphate buffer ,the solution was sonicated in bath sonicator for loading the cisplatin on extracted archaeosome and resize to nano scale.

Results .Mass balance was obtained using density and molecular weight of sonicated solution elements , and therefore ,the loading percentage of drug on nano archaeosome was obtained .The particles size in nano scale was confirmed with zeta sizer .

Conclusion .The main purpose of this research was to load cisplatin on archaeosome for targeted drug delivery against cancer .We obtained very suitable loading percentage that allowed us to succeed in our aim.

Keywords .archaeosome ,cisplatin , targeted drug delivery , loading

* Corresponding Author:

Address:Department of chemical engineering, science and research branch, Islamic Azad University, Tehran

E-mail: abnejad62@gmail.com