

## Effects of bioweapons and combating bioterrorism

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**B**ioterrorism refers to the intentional release of toxic biological agents to harm and terrorize civilians, in the name of a political or other cause. It was started in 14<sup>th</sup> century and still seen. Bioterrorism causing agents were classified into class-A, B, C. Class-A are the most dangerous of the 3 classes. Class-B is moderate and class-C was mostly seen. Few major diseases which are dangerous to human race were anthrax, small pox, CCHF, Swine flu etc. Anthrax was caused by Bacillus anthracis which were used as bio-weapon by USA. Small pox was caused by virus Variola and it is an airborne virus which made it facile to use as bio-weapon. CCHF was caused by Hayalloma tick. As it is an insect, cultivation of ticks was considered as a bio-weapon. Swine flu was caused by H1N1 virus. As it is highly contagious it is a major bio-weapon after anthrax and plague. Operation Bio-shield was started by the government of USA in 2004 to terminate bioterrorism. \$5.6 billion were granted upto 10 years for medical supply. EUA gave access to best medical treatment. Bio-surveillance is the best technology available till today to study and prevent attack of bioterrorism as early as possible.

### Biography

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## Preparation, optimization and characterization of multiple unit microspheres with kollidone SR containing hydrochlorothiazide

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**T**he floating microspheres can be retained in the stomach and assists in improving the oral sustained delivery of the drugs that have and absorption window in a particular region of the GI tract, these systems help in continuous releasing the drug before it reaches the absorption window, thus ensuring optimal bioavailability. Bioavailability of hydrochlorothiazide was enhanced when given with food through delaying of gastric emptying in both cases, which makes it a good candidate for intragastric floating drug delivery system. The present investigation described the influence of viscosity and drug: polymer ratio on Hydrochlorothiazide release. Floating microspheres loaded with hydrochlorothiazide were prepared by Emulsion solvent evaporation method. The prepared microspheres were evaluated by micromeritics properties, in vitro drug release, floating ability and drug entrapment efficiency. The *in vitro* release data of all formulations were also subjected to model fitting analysis to know the mechanism of drug release from the formulations by treating the data according to zero order, first order, Higuchi and Korsmeyer-Peppas equation. Out of 9 formulations tried, the formulation K1 was found to be satisfactory; since it showed prolonged and complete release with 94.75 % at end of 12 h. And it can be given in hard gelatin capsule form. Therefore, it may be concluded that drug loaded floating microspheres in combination with Kollidone SR are a suitable drug delivery system for Hydrochlorothiazide and may be used for effective treatment of hypertension, congestive heart failure and edema.

### Biography

Marvinkumar I. Patel is a student of last year B.pharm at Nootan Pharmacy College, Visnagar. He had published one Research Article in Journal and attend more than 15 national events successfully with top rank in university.

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