Letter to the Editor

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Cell Evacology: Could it be a New Science

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The sponge like protocol successfully introduced a fast, cheap and in house cell evacuation for nearly all the biological cells [1]. The original protocol describes bacterial cell evacuation from its cytoplasmic contents [1,2]. The protocol was optimized using Plackett-Burman design, which enables randomization for the variables included. Such randomization enables mapping the best cells' evacuation experimental conditions, which give the best un-deformed 3D structure and un-deteriorated surface antigens [1,3]. Its main concept is to determine the minimum inhibition concentration (MIC) and the minimum growth concentration (MGC) of chemical compounds able to induce pores in the cell walls [1,3]. Using of both MIC and MGC are critical step(s) to minimize any negative effect of the used chemical compounds and to guarantee cell killing but keep them un-deformed. It is able to introduce a single pore (in most cases), remove completely the cytoplasm and its contents, it turns normal cells to ghosts. The used chemical compounds until now are Sodium Dodecyl Sulphate (SDS), NaOH, NaH_2CO_3, H_2O_2, $CaCO_3$, NaCl and ethanol. Any chemical compound, physical or biological conditions able to produce pore in any cell, to degrade the genomic constituents, to remove the cytoplasmic content and to keep the cell 3D structure and the surface antigen in correct form is invited. Many controlling steps are involved in the original protocol such as investigating the existence of any still existed viable cells. Out of the twelve Plackett-Burman experiments, only single viable cell colony was obtained. The viable cells in this experiment were degraded by activating the lysozyme gene using chloramphenicol in the *E. coli* BL21 [4]. Controlling the cells 3D structure during their evacuation steps using the light microscope guarantee full evacuation with nearly no effect on the 3D or the surface antigens [2]. For each cell, the condition for the best evacuation with the best cell quality might need some adjustment, but after adjusting the evacuation conditions, the protocol is reliable and straightforward.

The idea of the protocol was used to evacuate the Newcastle virus [5], the eukaryotic *Saccharomyces cerevisiae* was further used additionally after the evacuation as a drug transport model) and more species are invited [6,7]. To prove that the protocol concept is universal and could exceed the chemical compounds to the biological ones, lysozyme and proteinase K were used with the spore former extremothermophilic *Bacillus stearothermophilius*. The enzymes when used in their minimum killing activity concentrations and their minimum living activity concentrations succeeded to turn the spore former bacteria to ghosts [8]. One could say that this protocol and its concept enable the evacuation of the biological cells without harming their cell wall or their outer membrane [9-11]. Such protocol will open many applications concerning the viable biological cells and the evacuated biological cells. In addition, its concept, which is based on using the critical concentration of both of the killing and the living concentrations of the used chemical compounds, enzymes, etc., might exceed the biological science to other fields and applications. Moreover, it might give idea about the need for determining the effect of the active compound(s) and enzyme(s), protein(s), etc., at the cell level (dosage/cell) rather than at the body level (dosage/kg). Cell evacology might be a term for a new science concerns with the cell evacuation.

References

1. Amara AA, Salem-Bekhit MM, Alanazi FK (2013) Sponge-like: A new protocol for preparing bacterial ghosts. Scientific World J.
2. Amara AA, Neama AJ, Hussein A, Hashish EA, Sheweita SA (2014) Evaluation the surface antigen of the Salmonella typhimurium ATCC 14028 ghosts prepared by "SLRP". Scientific World J.
3. Amara AA, Salem-Bekhit MM, Alanazi FK (2014) Plackett–Burman randomization method for bacterial ghosts preparation form *E. coli* JM109. Saudi Pharm J 22: 273-279.
4. Amara AA, Salem-Bekhit MM, Alanazi FK (2013) Preparation of bacterial ghosts for *E. coli* JM109 using sponge-like reduced protocol. Asian J Biol Sci 6: 363.
5. El-Baky NA, Amara AA (2014) Newcastle disease virus (LaSota strain) as a model for virus ghosts preparation using H2O2 bio-critical concentration. International Science and Investigation journal 3: 38.
6. Amara AA (2015) *Saccharomyces cerevisiae* ghosts using the sponge-like re-reduced protocol. SOJ Biochem.
7. Amara AA (2015) Bacterial and yeast ghosts: *E. coli* and *Saccharomyces cerevisiae* preparation as drug delivery model. ISIJ Biochemistry 4: 11.

8. Amara AA (2016) The critical activity for the cell all degrading enzymes: Could the use of the lysozyme for microbial ghosts preparation establish emergance oral vacccination protocol? ISIJ 5: 351.
9. Amara AA (2015) Kostenlos viral ghosts, bacterial ghosts microbial ghosts and more: Schuling Verlag–Germany.
10. Amara AA (2016) Lysozymes, proteinase k, bacteriophage lysis proteins and some chemical compounds for microbial ghosts preparation: A review and food for thought. SOJ Biochem 2: 1.
11. Amara AA (2016) Vaccine against pathogens: A review and food for thought. SOJ Biochemistry 2: 1.