Use of Institutional Facilities to control hazard initiated from Silver Nanoparticles used to control Antibiotic Resistant Enterotoxigenic *E. coli*.

Dalia M. Mohsen[*], Zaki, E. Rizkallah *, Sherein Galal[*],

Amany N. Dapgh[* *], M. K. Hassan[*]

AHRI, Giza.* RLQP, AHRI, Giza. **

Objectives:-
Nanotechnology promises to improve the quality of human life, but it has also provoked concerns about potential adverse health effects on workers, environment and consumers. Effective risk assessment and risk management of nanoparticles requires knowing how can gain entry into the human body, routes of exposure, toxicity and health effects due to human exposure to incidental NPs. To implement the best available methods to control those risks in order to ensure their use in the laboratory, and the best principles of occupational health and biosafety and to devise ways to protect workers from any identified adverse health effects from working with Silver NPs.

Method:-
The participants use methods, data to perform research about route of infection of silver nanoparticles and the isolated enterotoxigenic E. coli. Incidental Ingestion of Silver Nanoparticles can enter the digestive tract through ingestion of contaminated food or water and by hand-to-mouth transfer from contaminated surfaces.biosafetyprinciples are based on assessing hazards of microorganisms according to their infectious capability, virulence and availability of effective treatments and preventive measures; and assigning microorganisms into one of four risk groups according to their hazards and routes of transmission.
In deed Risk assessment of nanotechnology is a fundamental component of biosafety.

Results:-
The present work will successfully fulfill the transfer of the silver nanoparticles across the intestinal wall cells. Evaluating the occupational health risks of nanomaterials and is the basis for effective risk management decisions, quantitative risk assessment allows for a comparison between actual workplace exposure and a health risk-based occupational exposure. There is also evidence that smaller particles can be transferred more readily than their larger ones .Due to their small size, NPs can cross cell membranes and penetrate blood vessel walls via passive and active diffusion and interfere. In addition, if the toxic properties of particles are determined by interactions occurring at the interface between particles and biological systems, then toxic response should increase as particle size decreases for the same mass dose.

Conclusion:-
Current approaches to risk management for Silver nanoparticles, such as engineering control, administrative control, PPE and health surveillance, Further research and investigation is needed to evaluate the effectiveness of these approaches across the spectrum of Silver nanomaterials being used and generated in laboratories. Laboratory operations will be documented to assure the close of the proper laboratory system and to control hazardous nanoparticlesarise during research period.

Outcome:-
Recommendations should regularly updated to reflect new knowledge obtained through research and surveillance; multiple projects to assess the effects of Silver NPs development of risk assessment models and exposure monitoring techniques. And should be established. Close collaboration should be established between all nanotechnology stakeholders. The potential of nanotechnology to improve level of life is realized at the same time that occupational health concernsare effectively addressed. With nanotechnology, we still have a chance to do it right consistently. Participants will gain knowledge and better understand about the effectiveness of different Biosafety measure to control hazards initiated from laboratory research.