Theodor Bilharz Research Institute therapeutic products and health tools

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Therapeutic products
Research and development for production of high efficacy recombinant Human Growth Hormone (rHGH): It is approved for the treatment of multiple human diseases resulting from HGH deficiency. rHGH has been produced in a system for production of recombinant proteins using *E. coli* and pTXB1 expression system, a single band at 22 kDa. The purified protein identity was verified using mass spectrometry.

Construction of plasmid vector for protein expression in prokaryotic cells named pTBRI: Innovative plasmid allows the user to cloning and expression of genes to be the first step in the production of therapeutic proteins.

Research and development for production of high efficacy recombinant human IFN-α2b conjugated with multiply branched high molecular weight PEG polymer for treatment of HCV infected patients. The developed production process included feed batch fermentation, purification, solubilization and refolding of protein to its native 3ry structure and purification followed by Pegylation of the purified protein and purification of monopegylated IFN-α2b.

New formulation of praziquantel using nanotechnology to achieve greater availability and higher efficiency against schistosomiasis.

Health tools
A new design of intubating laryngeal mask airway (I-LMA) in cases of difficult intubation. It contains a bundle of tubes with multiple holes in their walls to permit gas flow freely.

A device for anesthesia using distilled-water injector to get rid of carbon dioxide, physically to be added as an alternative to the caustic soda lime used in regular anesthesia devices.

Manufacturing of vertical-flow strip nano-chip kit with graphene nanoparticles and evaluating its role as a simple, rapid, low-cost, sensitive, specific, and user-friendly diagnostic tool for diagnosis of multiple parasitic diseases (e.g. schistosomiasis, fascioliasis, filariasis and malaria) in one kit.

A program for the diagnosis of parasites through the Internet based definition and diagnosis of parasites using a different website supported all forms and types of parasites diagnosis. It assists all medical, scientific and educational frameworks in the diagnosis of parasites.

Biography
Samy Mohamed Nasr Salama is working in Theodor Bilharz Research Institute, Egypt.

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