

Immunology and Vaccines Summit 2021

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Production of Viral Vaccines

Background: Viral vaccine contains inactivated viruses or live viruses. Inactivated or killed viral vaccines contain viruses, which do not have ability to replicate. Activated or live vaccines contain the live form of the virus. Viral diseases still cause human deaths in the endemic areas in Asia and Africa. A cheap vaccine for human that could be used in mass vaccination campaigns would be a valuable weapon against viral diseases. Serum institute of India Pvt Ltd has developed several vaccines such as Rabies, Corona (Covishield), Polio, Measles, Mumps, Rubella, Rota vaccines. Large scale production of Vero ATCC CCL81 cells were seeded in Cell cube system / bioreactor. Then cells are infected with Pitman Moore (PM 3218) strain of rabies virus. After 48-72 hrs infected cells are washed. The multiple harvests are collected from cell cube system / bioreactor, which is then clarified by filtration. Clarified harvest is concentrated using tangential flow filtration system. Inactivation of rabies virus is done using beta-propiolactone (BPL). Next step of purification is done by affinity column chromatography in order to remove BSA, DNA, host cell protein and diafiltration to remove high salt concentration. Purified rabies antigen is prepared by adding stabilizer to diafiltered antigen and finally filtered by 0.2-micron filtration then stored in ethyl vinyl acetate bags. The purified rabies antigen and blind vaccine if requires blend to achieve set antigen content in final bulk. The liquid vaccine is filled in 1 ml USP type 1 clear and tubular vial and lyophilized. With the lyophilized vial of rabies vaccine.



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Biography

Presently additional director, production (viral vaccines) at Serum Institute of India Pvt. Ltd., Pune, India. Trained in regulatory affairs at UMASS in Boston, USA and Chumakov Institute, Moscow, Russia. He is Ex.IITian and virologist with more than 30 years of rich experience in various departments such as production, quality assurance, quality control in the Biotechnological industry and Research Institute. He is specialized in purification of viral vaccines and has developed WHO approved Oral polio vaccine and Rabies vaccine at SIPL.

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