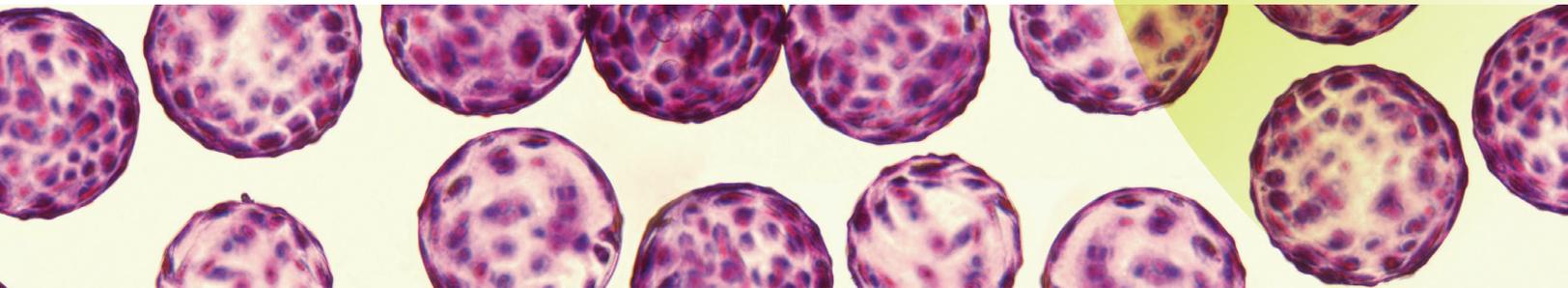




Vaccsheet

# Vero Cell platform technology



## Introduction

In the early sixties Vero cells were isolated and immortalized from the kidney of an African Green Monkey. Currently, the Vero cell line is the most widely used and most reliable cell line in viral vaccine production in terms of quality, yield and safety. At Intravacc, we have been developing viral vaccines using the Vero cell line since 1987.

## Vero cells technology

Intravacc's cGMP-grade, regulatory approved Vero cell line is currently being used for routine large-scale commercial vaccine manufacturing by clients all over the world. Regardless which virus you want to propagate, you will need a cell line that can produce this virus at high yields and excellent quality and is safe and robust. You will not only be looking for a cell line, but also for a proven platform to grow the cells in a scalable production system and technologies to purify and characterize your product of interest. Our Vero cell line and its viral vaccine platform process can be what you are looking for.

## Benefits

- cGMP-qualified cell line
- Directly available Master and Working cell banks
- Extensive clinical use and regulatory history
- Scalable to large volumes at industrial scale
- > 10 scientific publications

## Improvement of the Vero cell line production process.

Thanks to our extensive expertise in up and downstream process development we know the platform thoroughly and can quickly design a production process based on our proven and sophisticated Vero based vaccine production platform. Obviously we can provide you with an animal compound-free production process. Our capabilities go from small-scale process development in scale-down systems up to cGMP production in 50-200L single-use bioreactors.

We can out-license the Vero cells but also offer our research capabilities. In addition, we can produce cGMP virus seed lots and even vaccines, ready to be tested in phase I/II clinical trials.

Intravacc has been developing viral vaccines using the Vero cell line since 1987. Initially for the Dutch government but the last decade mainly for clients in biotech, big pharma and NGO's. Both attenuated as inactivated vaccines produced on our Vero cells have been successfully tested in clinical trials and our Vero cell line is currently used by manufacturers around the globe in industrial vaccine production processes. Our Vero cell line meets regulatory requirements and Master and Working Cell banks with an extensive regulatory dossier are readily available.

## Selected publications

- Y.E. Thomassen, A.G. van 't Oever, M.G.C.T. Van Oijen, R.H. Wijffels, L.A. Van der Pol, W.A.M. Bakker, Next generation inactivated polio vaccine manufacturing to support post polio-eradication biosafety goals, PLoS One 8(12) (2013) e83374.
- Y.E. Thomassen, A.G. van 't Oever, M. Vinke, A. Spiekstra, R.H. Wijffels, L.A. van der Pol, W.A.M. Bakker, Scale-down of the inactivated polio vaccine production process, Biotechnol Bioeng 110(5) (2013) 1354-1365.
- H. Kraan, P. van Herpen, G. Kersten, J.P. Amorij, Development of thermostable lyophilized inactivated polio vaccine, Pharm Res 31(10) (2014) 2618-29.
- P. Verdijk, N.Y. Rots, M.G. van Oijen, W.C. Weldon, M.S. Oberste, H. Okayasu, R.W. Sutter, W.A. Bakker, Safety and immunogenicity of a primary series of Sabin-IPV with and without aluminum hydroxide in infants, Vaccine 32(39) (2014) 4938-44.



The Netherlands-based Intravacc is one of the world's leading organizations with many years of experience in translational vaccinology. As an established independent clinical development and manufacturing organization (CDMO) in the vaccine industry, Intravacc has transferred its technology and know-how world-wide, including oral polio vaccines, measles vaccines, and DPT, Hib and influenza vaccines. Intravacc offers a wide range of expertise and is the bridge between discovery and pilot scale GMP biomanufacturing up to phase I/II clinical trials for partners such as academia, public health organizations (WHO, BMGF), and biotech and pharmaceutical companies.