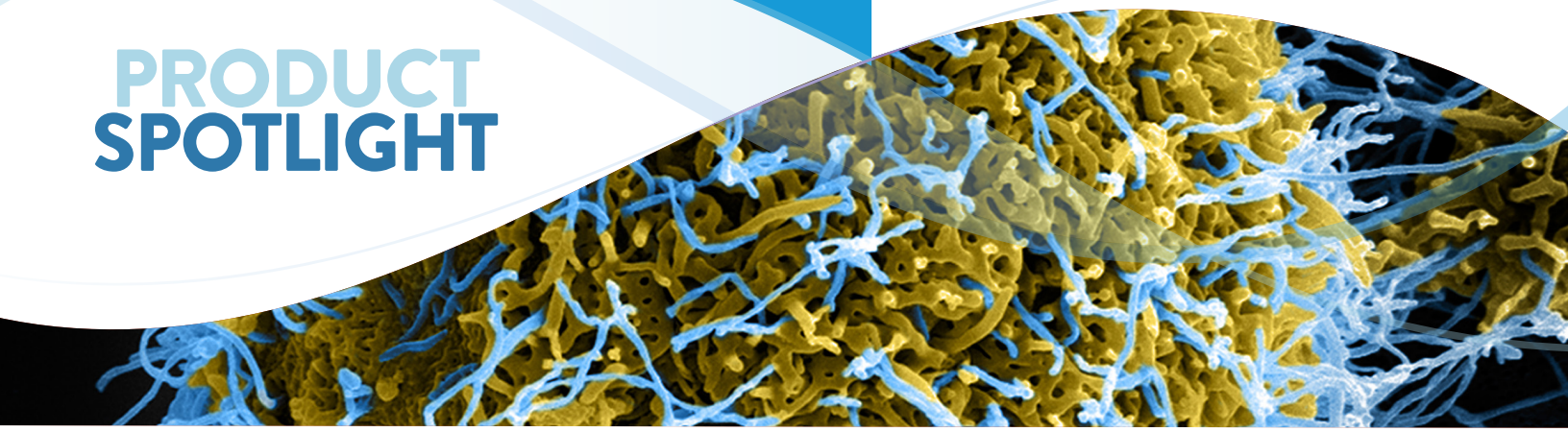
PRODUCT
SPOTLIGHT



CELL LINES FOR ENHANCED VIRUS PRODUCTION

3 OPTIONS FOR ENHANCED VIRUS PRODUCTION – SAVE TIME AND MONEY!

- 2 cell lines optimized for vaccine manufacturing
- 1 cell line optimized for gene therapy delivery
- Superior clinical virus or AAV yields compared to parental lines
- 10 to 30-fold higher virus yields possible
- Broad applicability for basic research or industrial scale manufacturing
- Gene-edited for precise and stable STAT1 and STAT1/BAX knockouts
- Similar growth profiles to the parental cell lines
- Scalable for large to small scale production
- cGMP compliant custom services available
- ATCC quality and performance

Table 1: **Available Cell Lines for Enhanced Virus Production**

Gene knockout	ATCC® No.	Designation	Function
STAT1	CCL-34-VHG™	MDCK.STAT1 KO	Viral vaccine production Virus propagation; production of high-titer viral stocks Viral vector transfection and viral particle production
STAT1	CCL-81-VHG™	Vero.STAT1 KO	Viral vaccine production Virus propagation; production of high-titer viral stocks Viral vector transfection and viral particle production
STAT1, BAX	CRL-1573-VHG™	293.STAT1 BAX KO	Gene therapy Transfection host Virus propagation; production of high-titer viral stocks

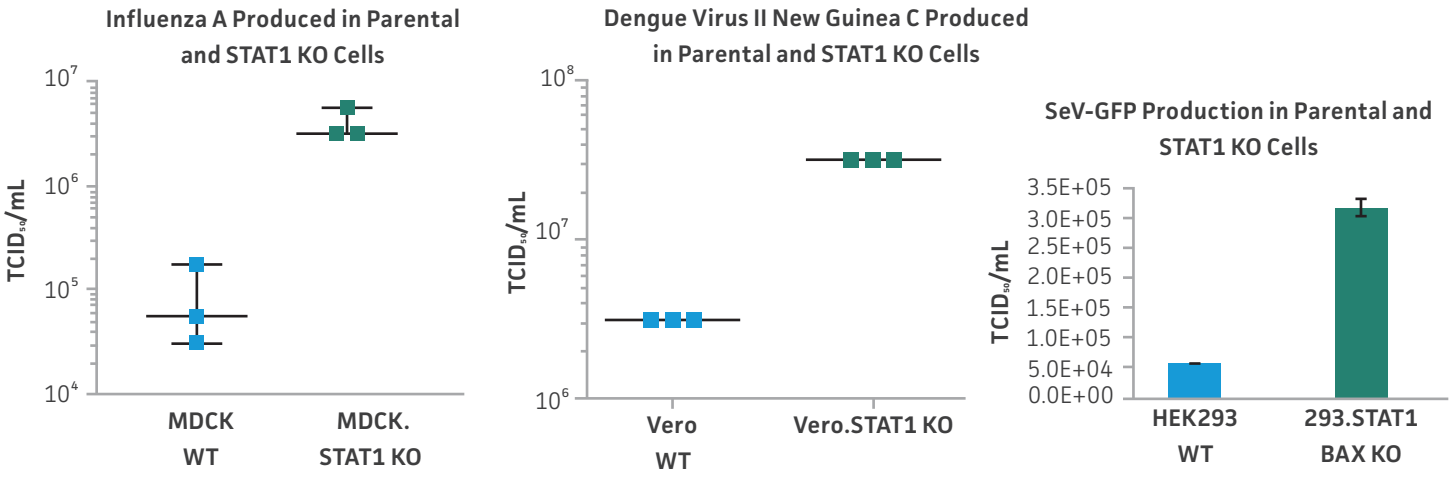


Figure 1: ATCC CRISPR-edited virus-producing cell lines show superior virus yields compared to parental cell lines. Staining of $TCID_{50}$ of viral supernatants from MDCK.STAT1 KO, Vero.STAT1 KO, and 293.STAT1 BAX KO show a 10-fold increase in Influenza A virus production, Dengue II virus production, and Sendai virus production over their respective parental cell lines.

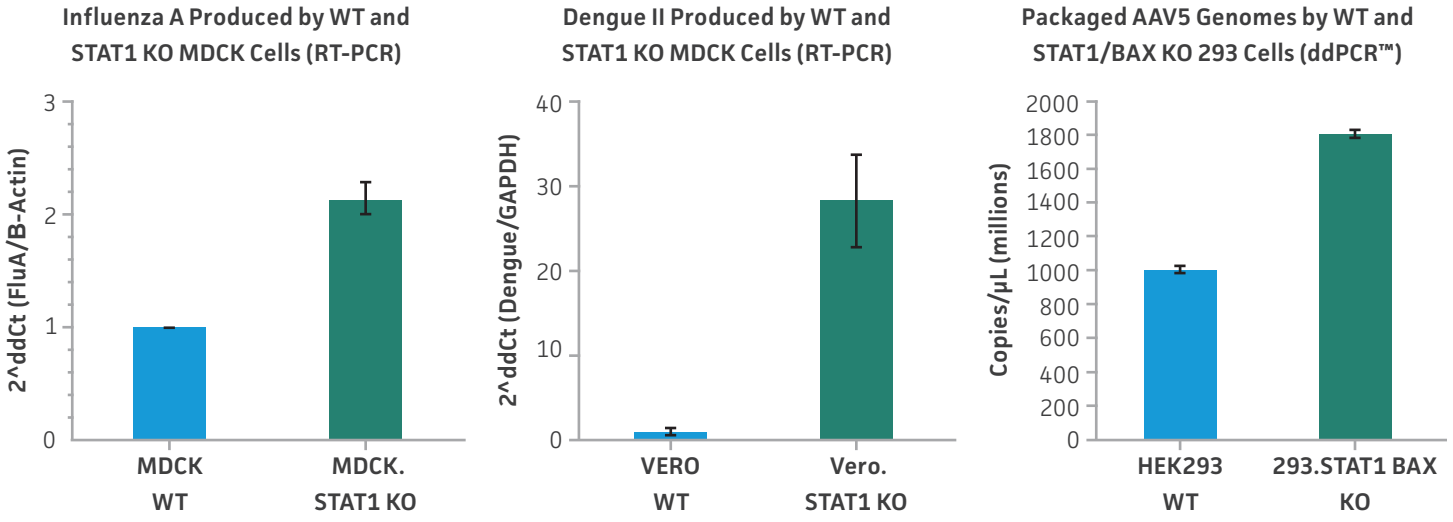


Figure 2: ATCC CRISPR-edited virus-producing cell lines show increase virus genome copy number compared to parental cell lines. Staining of $TCID_{50}$ of viral supernatants from MDCK.STAT1KO, Vero.STAT1KO, and 293.STAT1 BAX KO show a 2-fold increase in Influenza A virus production, a 30-fold increase in Dengue II virus production, and a 1.8-fold increase Sendai virus production over their respective parental cell lines.

The continual spread of deadly viruses necessitates the development of novel prevention and treatment options. However, the development of a new antiviral vaccine can be challenged by low-yielding manufacturing processes.

Additionally, while adeno-associated virus (AAV) vectors are a commonly used platform for the delivery of gene therapies, a bottleneck in the process is scaling viral production.

To address these issues, ATCC used cutting-edge CRISPR/Cas9 gene-editing technology to develop STAT1 knockout or STAT1/BAX double knockout cell lines capable of producing high-titer viral stocks. Discover how these advanced biological models can be used in your vaccine and gene therapeutic development projects.

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