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## HIGH DENSITY HEK293T CULTURE FOR HIGH YIELD, HIGH QUALITY, STABLE ADENOVIRAL VECTOR PRODUCTION IN AMBR® 250 STIRRED TANK REACTORS

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Adenovirus vectors (AdV) present high safety and immunogenicity for drug development, allowing more and more vaccines to adopt this technology platform in recent years. Due to the current COVID-19 pandemic, the global demand for AdV has experienced significant growth. Therefore, to optimize the upstream process in order to obtain high yields, good quality and stable viral vectors, it becomes critical that processes are stable and easy to scale-up, which has become a key focus of pharmaceutical companies in the field.

In this study, the CDMO Fiveplus Gene Technology Co., Ltd. successfully transferred their high-density upstream process from shake flasks to Ambr®250 stirred-tank bioreactors, which are easily scalable to large-volume production.

Prior to the study, the HEK293T-R3 cells, developed in-house by Fiveplus, were suspended in serum-free cultures both in shaker flasks and rocking motion platforms, and were successfully used in adeno-associated virus (AAV), adenovirus (AdV), lentivirus (LV) production and large-scale preparation of herpes simplex virus (HSV) vectors.

The data showcased in the poster focuses on AdV production yields and investigates a wide range of conditions for large-scale process transfer enabled by the Ambr®250 technology and Design of Experiments (DoE).



*Figure 1 – Ambr® 250 Modular Bioreactor (left) and vessel (right)*