Simplifying Progress

Polyplus-Sartorius: A Synergistic Portfolio to be Part of the Antibody Solution.

Recently acquired by Sartorius, Polyplus is now part of the solution in the recombinant antibody production field. From transfection reagents to plasmid design and antibody fragments production, we support customers in improving yield for protein production. In addition, Sartorius has a valuable expertise in cell line development for antibody production, antibody screening and functional characterization.

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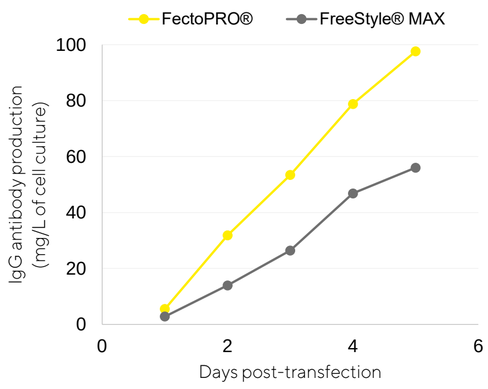
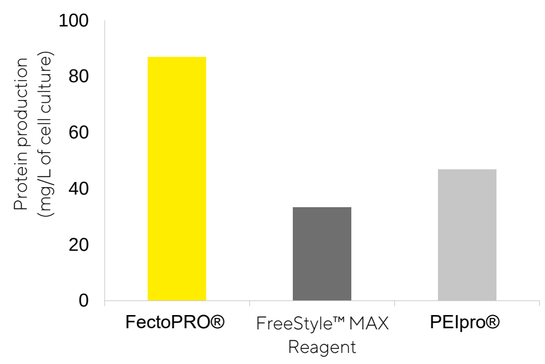
FectoPRO

- **Cost-effective** transient gene expression with **lower** plasmid DNA amount.
- Compatible with various mammalian expression media and high cell density systems.
- Chemically defined and **animal** derived component **free**.

FectoPRO® - Amazingly high protein and antibody yields in CHO and HEK 293 cells



FectoPRO® gives amazing antibody production yields in suspension CHO cells. Cells were seeded at 1 x 10^6 cells/ml in 30 ml of FreeStyle™ CHO Expression Medium and transfected with FectoPRO® (0.8 µg DNA/ml) or FreeStyle™ MAX Reagent (1.25 µg DNA/ml) following recommended protocols for the respective reagents. Recombinant mouse IgG production yield was assayed 1 to 6 days after transfection using protein G biosensor (fortéBIO® octet RED96 system). FreeStyle™ is a trademark of Life Technologies™ Corporation. Data kindly provided by ProteoGenix SAS (France).



FectoPRO® gives superior protein production yields in suspension HEK-293 cells. Cells were seeded at 1 x 10^6 cells/ml in 30 ml of FreeStyle™ 293 Expression Medium and transfected with FectoPRO® + FectoPRO® Booster (0.4 µg DNA/ml), FreeStyle™ MAX Reagent (1.25 µg DNA/ml) or PEIpro® (1 µg DNA/ml) following recommended protocols for the respective reagents. IgG3-Fc (34 kDa) production was assayed 120 h (HEK-293 cells) after transfection by protein G affinity quantification (HPLC).

FectoCHO Expression System

- **Synergistic** association of FectoCHO® CD **Expression medium** and **FectoPRO®**, the transfection reagent.
- Outstanding protein production yields in several CHO cells.
- Chemically defined.

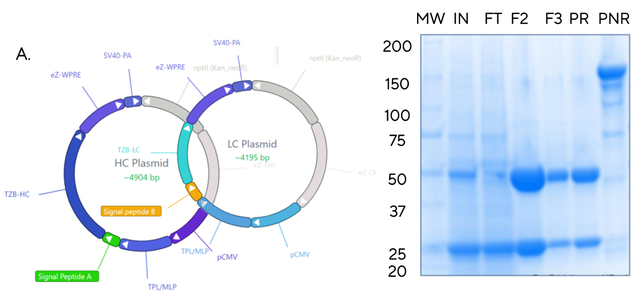
FectCHO Expression System to boost antibody yields

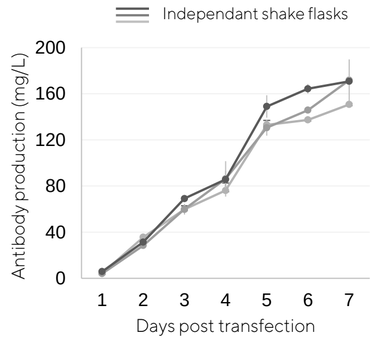
FectoCHO® Expression system outperforms ExpiCHO™ Expression System in terms of protein production kinetics in ExpiCHO-S cells. ExpiCHO-S™ cells were either cultivated in FectoCHO® CD Expression Medium and transfected with FectoPRO® reagent following the recommended protocol, or in ExpiCHO™ Expression Medium and transfected following the recommended protocol with ExpiFectamine™ CHO transfection reagent. IgG3-Fc production was assayed over 10 days post-transfection using protein G Biosensors (fortéBIO® BLItz).

Plasmid Engineering Services

- **Interactive** plasmid design platform.
- **Tailor-made** plasmids, to the nucleotide!
- Strong **expertise** coming from our Plasmid Engineering Specialists.

Plasmid Design and Optimization to enhance mAbs yields.





Plasmid design to express the therapeutic Trastuzumab monoclonal antibody built with the e-Zyvec ® technology. A. Two monocistronic plasmids containing each one chain of the antibody (heavy chain (HC) or light chain (LC)). **B.** Single bicistronic plasmid containing the two chains of the antibody (HC and LC), each expression being driven by a CMV promoter resulting in a dual promotor architecture.

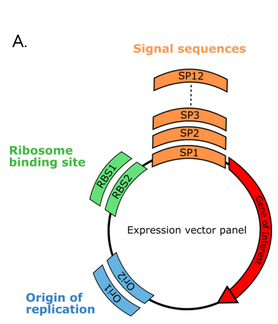
Quality and yield of production of Trastuzumab monoclonal antibody using the two strategies (A and B), in ExpiCHO cells. Left. Electrophoretic gels stained with Coomassie Blue. MW: Molecular Weight; IN: Input, harvest from 7 days of culture prior to Protein A purification; FT: Flow Through; F2 & F3: elution fraction 2 and 3 as collected with Akta FPLC; PR: pooled positive elution fractions migrated on gel in reducing conditions; PNR: pooled positive elution fractions migrated on gel in non reducing condition. **Right**. ExpiCHO cells were transfected with each plasmid architecture (A and B), following the routine protocol of an experienced production platform (CERGroup, Liège, Belgium). Trastuzumab production was measured over 7 days post-transfection using ELISA.

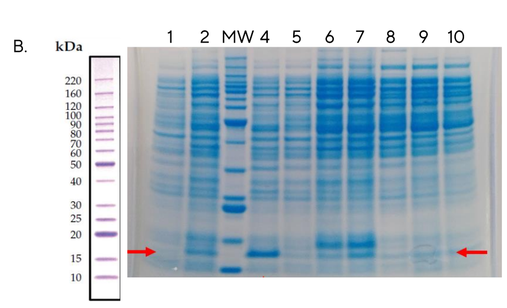
Plasmid Manufacturing Services

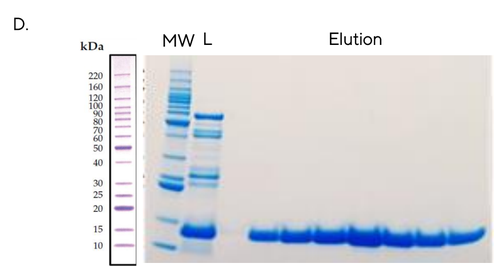
- **Feasability** study to select the best expression system.
- **Scalable** processes from **Research** to GMP grade.
- Strong **expertise** in recombinant protein production.

VHH
sdAB

From plasmid design to sdAb production.







Stepwise approach to produce single domain antibody (sdAb): optimized processes from plasmid design to sdAb production. A. Scheme representing the different expression vectors tested showing sequence optimization for ribosome binding sites (RBS), bacterial origin of replication and signal peptide sequences (SP). **B.** Electrophoretic gel stained with Coomassie Blue to select the best expression system (*E. coli*) for sdAb production amongst nine tested. **C.** Picture of the 5L fermenter used to test the best candidates. The upstream process conditions were selected by testing the effet of the feeding medium (C/N ratio), the temperature and the pH during IPTG induction on the production yield and protein integrity. **D.** Electrophoretic gel stained with Coomassie Blue to hightlight the purity of the sdAb produced, deriving from the optimized process. MW: molecular weight; L: load.

And more...

Polyplus®

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xell

Xell is now part of Sartorius

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