SELEXIS®

Driven by Excellence.
Guided by Science.

Rescue Promising Programs

Applying Selexis Technologies to Difficult-to-Express Proteins

INTRODUCTION

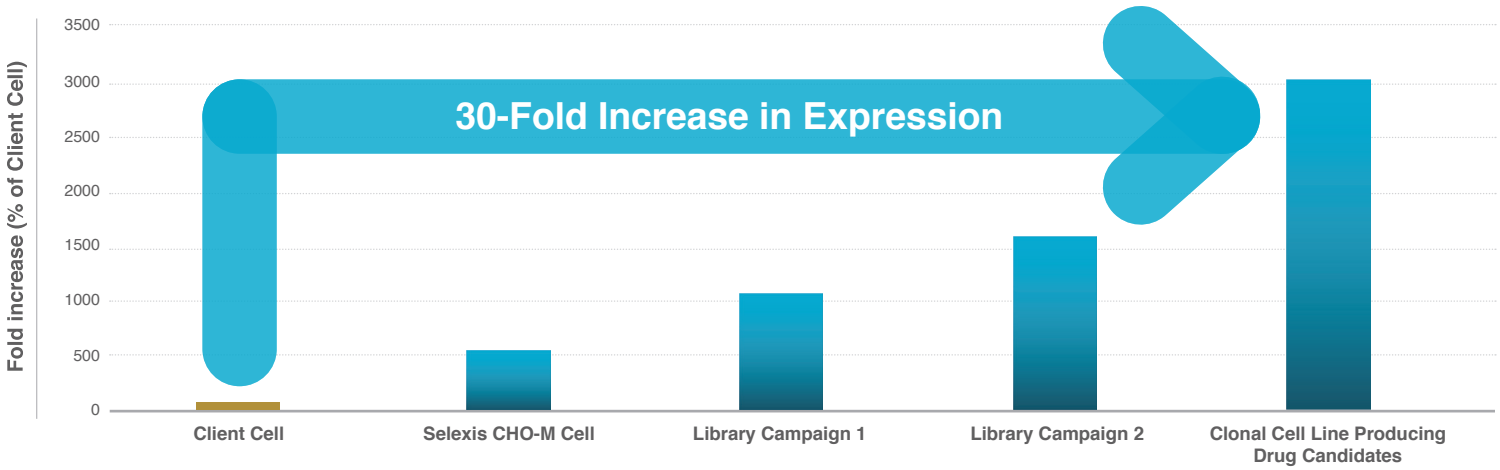
Solutions for complex human diseases are being addressed with increasingly complex protein therapeutic modalities. These include molecules such as bispecific proteins, DARPins, triabodies and novel scaffolds decorated with peptides, enzymes or growth factors, to name a few. Many, if not most, of these proteins do not exist in nature and producing them presents a range of production and secretion challenges such as ensuring appropriate folding and subunit pairing.

At Selexis, we have spent a lot of time interrogating and characterizing our propriety CHO-K1 cell line (SURE CHO-M Cell Line™); we were one of the first companies to fully sequence the CHO-M's genome and transcriptome. From these data, we have built a comprehensive understanding of the transcriptional and genomic landscape of our cells and where there are mutations or unexpected increases or decreases in host gene transcription levels. This has provided us with detailed insight into potential secretion bottlenecks within our CHO-M cell line, particularly as it applies to difficult-to-express proteins. We have developed technologies to address these bottlenecks.

As we stress the secretory machinery of our CHO-M cells with these non-natural proteins, we have the data and the tools to address a myriad of issues including: improper folding or pairing, metabolic overload or backlog in protein translocation or vesicle trafficking.

CLIENT CASE STUDY **How We Rescued a Vaccine Project**

SURE CHO-M*plus* LIBRARIES™ APPLIED TO A DIFFICULT-TO-EXPRESS VACCINE CANDIDATE



RESULTS

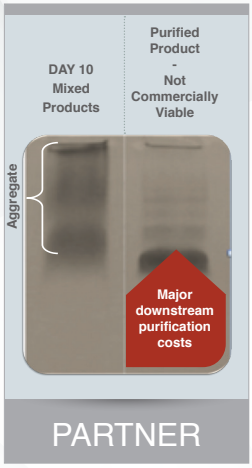
- **Project rescued**
- **Program has advanced to the clinic**
- **Major impact on COGS**

Rescue Promising Programs

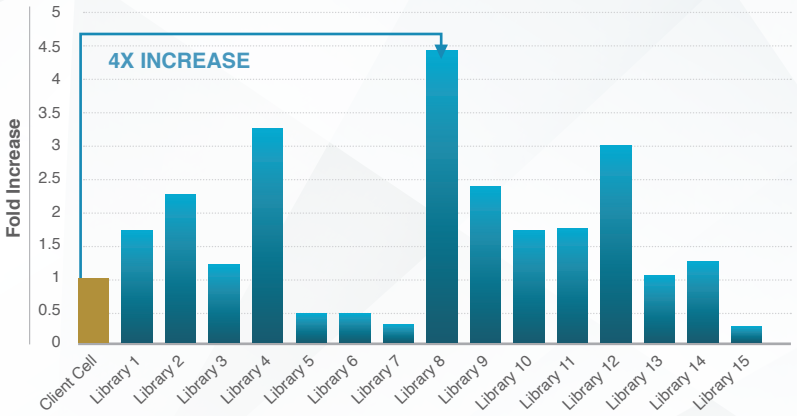
Applying Selexis Technologies to Difficult-to-Express Proteins

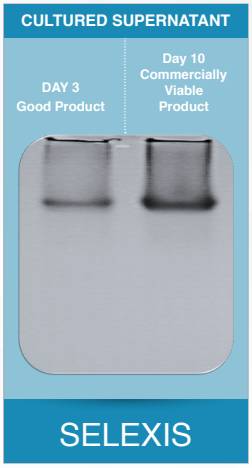
CLIENT CASE STUDY **How We Solved an Aggregation Problem**

SURE CHO-MPLUS LIBRARIES BOOSTED PRODUCTIVITY 4-FOLD FOR FC FUSION PROTEIN



Engineered Libraries Expressing ER and Golgi Auxiliary Proteins





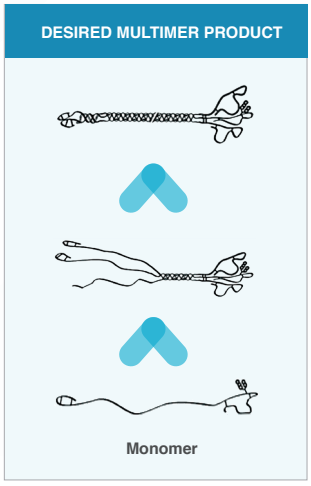
Project rescued
Program advanced to the clinic and is now in Phase 2
Major impact on COGS

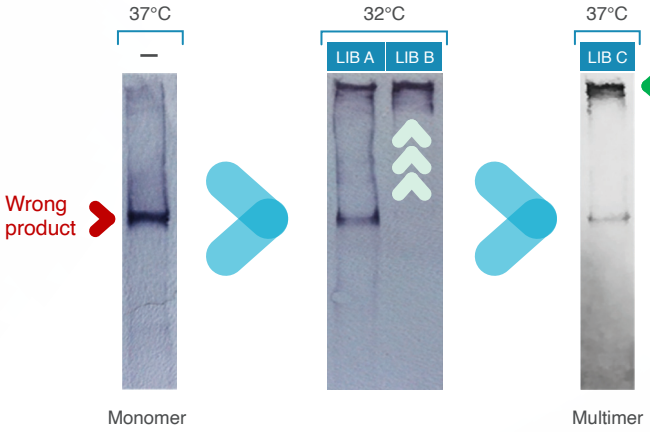
RESULTS

CLIENT CASE STUDY **How We Solved a Folding Problem**

SURE CHO-M*plus* LIBRARIES™ APPLIED TO A COMPLEX MULTIMERIC PROTEIN DRUG CANDIDATE

Engineered Libraries Expressing ER and Golgi Auxiliary Proteins





RESULTS

Project rescued
Program will advance to clinic
Major impact on COGS

A JSR Life Sciences Company