kbDNA

OPTIMIZE EXPERIMENTS WITH PRECISION BIOREAGENTS

DISCOVERY WORKFLOW CHALLENGES

- Managing a **wide range of materials** for multiple projects
- **Characterizing** research molecules through **in-vitro analysis**
- Optimizing protocols using **research-grade reagents (RUO)**
- Defining **analyte-specific standards** for downstream objectives

"R&D is overrun with the same outdated products."

We must move on from legacy manufacturing. By developing a solutions platform around R&D bioreagents, kbDNA delivers oligos, protein & antibodies optimized to support todays competitive research.

DNA/RNA OLIGOS

Phosphoamidites | Supports | Extensive Modifications

RECOMBINANT PROTEINS

Protiens | Enzymes | Antibodies

DATA STANDARDS

Material Sci dB | Merged Reagent+Sample Specs | Strict QC

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Below is a few cases sharing how our solutions have reinforced research laboratories in tackling their experimental challenges

kbDNA IN ACTION

COMPLEX NUCLEIC ACIDS

Client

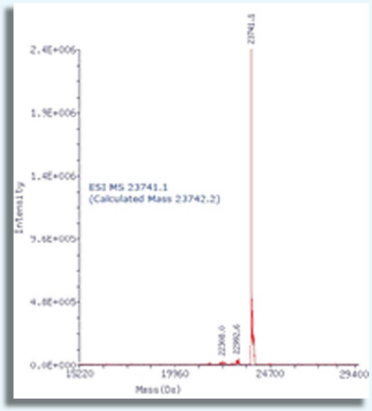
Established Therapeutics, mRNA Translation

Challenge

The RNA sequence of interest was synthesized in-house and encountering routine impurity errors.

Solution

By replacing the amidites with 2'-O-Trisopropylsilyl-oxy methyl amidite, coupling efficiency increased (~2-4 min) and purity consistently met standard after only a single Ion-Exchange purification (as demonstrated by ESI/MS and CE analysis).



ESI MS analysis of 74-mer RNA synthesized using reverse amidites (10.0 µm).

DIFFICULT PROTEINS

Client

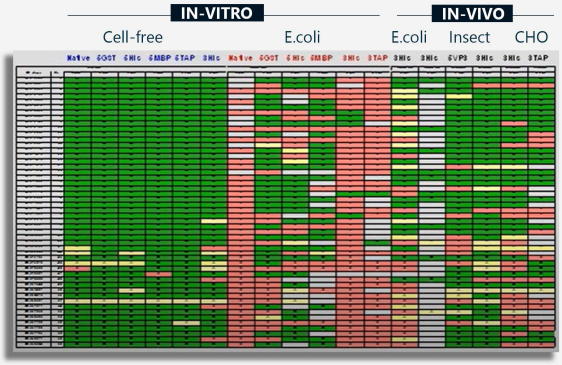
Early-stage Diagnostics, Neurodegenerative Disease

Challenge

Difficult-to-express protein of interest. The reagent had to match the molecular weight and structure of the native protein in order to be active. Conventional protein expression was unsuccessful.

Solution

The Target mRNA sequence was inserted into a versatile cell-free expression system for more optimized condition capabilities and to counter the hindering factors of conventional synthesis. The vector was designed to carry a cleavable tag to support expression and removal post-synthesis.



Proteins synthesized in 6 different forms (total 300) 50 human cDNA clones of 20 genes with membrane binding domains.
(Green=high, yellow=medium, pink=low)

DATA INTEGRITY

Client

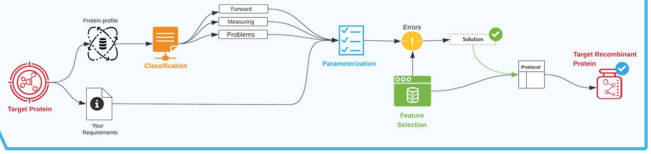
Non-profit Institute, Immuno-oncology

Challenge

Their recombinant proteins were inconsistent in QC properties from different commercial sources and new production batches. This hindered experimental procedures (Flow Cytometry & ELISA).

Solution

Utilized data model to identify optimization points in manufacturing for each protein of interest. Built personalized production protocols for each protein to meet end-user criteria and deliver lot-to-lot batch consistency



*Information regarding client identity & research molecules are omitted for their protection.
To inquire about our confidentiality policy, contact compliance@kbDNA.com

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DISCOVER **MORE**