

# Accelerating Drug Discovery with Abcam's Premium Bioactive Proteins

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## Introduction

Over 70% of researchers cannot reproduce another scientist's experiments, revealed a survey by Nature. Additionally, Bradbury et al. (Nature, 517: 27-29; 2015) estimated that \$1.6 billion was lost on poorly characterized reagents worldwide. To help improve the quality of science and data reproducibility globally, Abcam recently introduced its Premium Bioactive Proteins, a new high-quality, off-the-shelf product line.

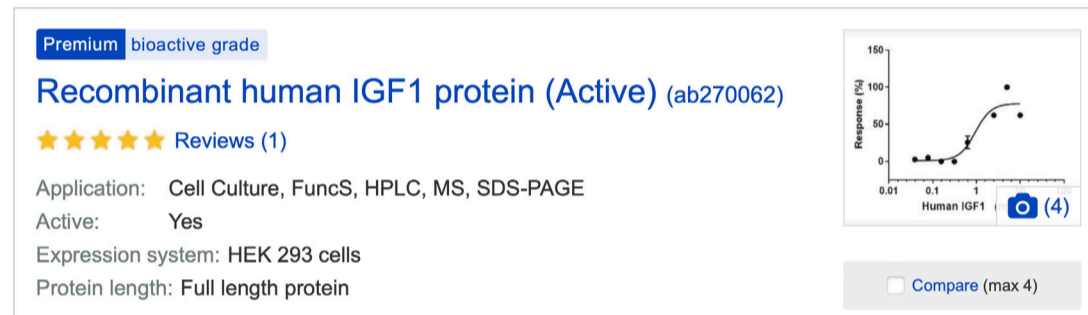
The Premium Bioactive Protein portfolio consists of intra- and extracellular proteins expressed in mammalian cells, produced under ISO 9001:2015 standards. The proteins are all tag-free, which eliminates the possibility of interference from tags in sensitive assays. Following production and purification, each protein undergoes extensive analytical characterization to assess its purity, using intact mass LCMS, Reverse Phase HPLC, SDS-PAGE and endotoxin testing methodologies. Finally, the potency of each protein is determined using a relevant functional assay.

The poster will provide an overview of the protein production process and include detailed analytical and functional characterization data provided for all proteins at the time of release. The communication will also describe analytical criteria established to ensure batch-to-batch consistency.

The launch of the Premium Protein commercial range is one of the latest initiatives undertaken by Abcam to improve reagent reproducibility across the drug discovery and development sector.

## Premium Bioactive Protein Overview

- Abcam identified a gap in the off the shelf reagent space for high-quality mammalian proteins with biophysical characterization, including analytical data and cell-based assays.
- Commercial reagent landscape consists mainly of E. coli proteins with limited biophysical data, mostly SDS-PAGE gels.
- At present, the Abcam Premium Protein commercial portfolio consists of growth factors and cytokines (human and mouse) and we add about 25 new products a month.
- These proteins are used for various in vitro use applications as well as in cell culture.

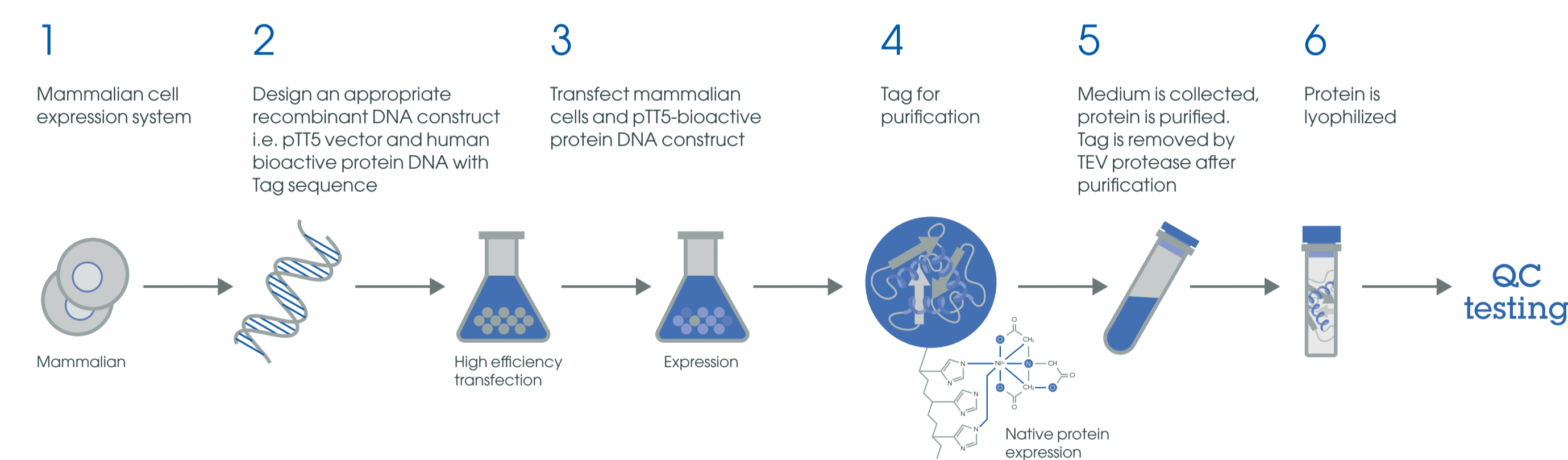


## Premium Bioactive Protein Analytical Specifications

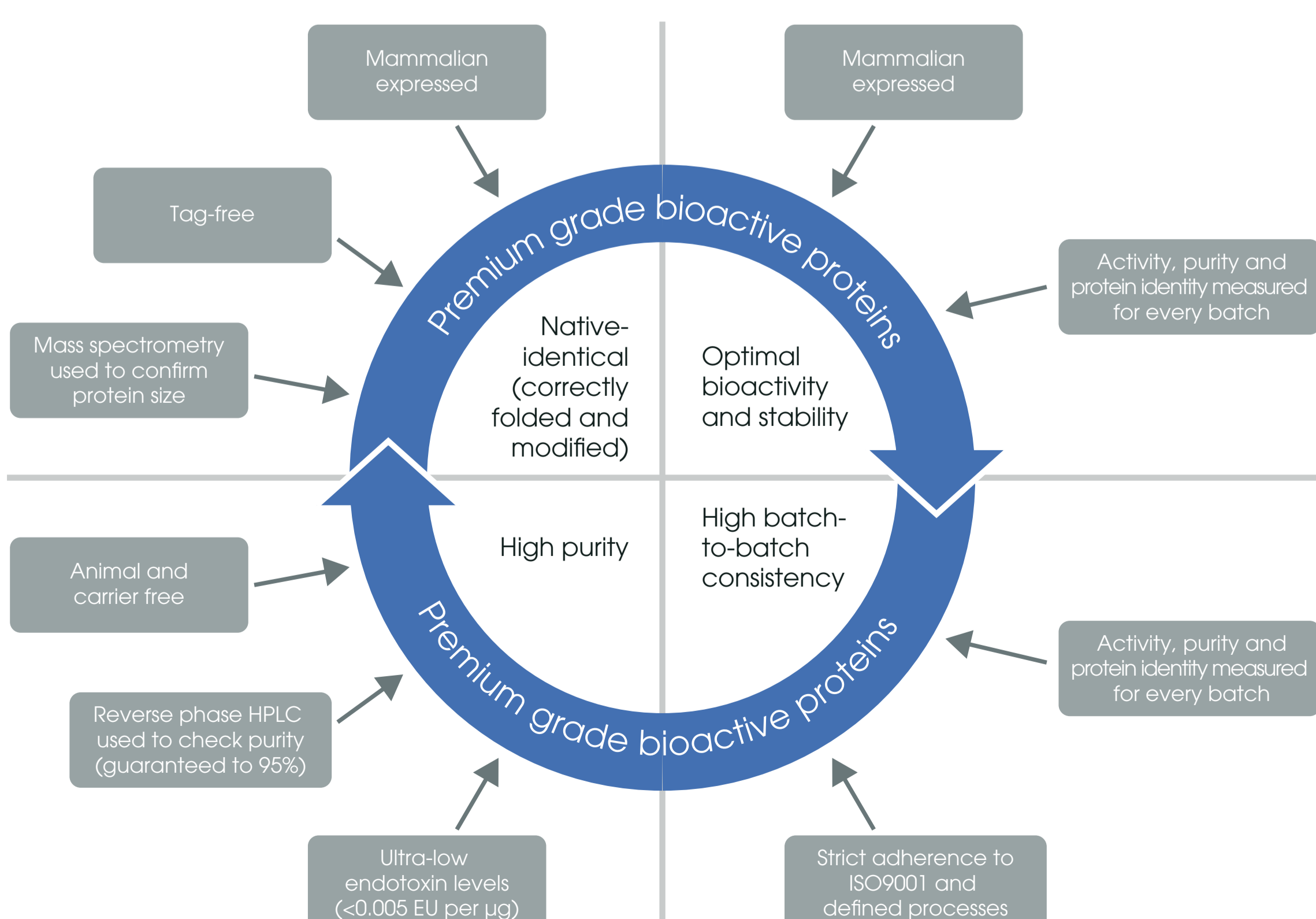
- Cytokines and growth factors
- Tag free
- Ultra low endotoxin (<5 EU/mg)
- Bioactivity validated in cell based functional assay
- Purity confirmed by HPLC (>95% purity)
- Calculated mass determined by LC-MS (<10 da)



## Premium Protein Development Process



## Mammalian Expression: The Key to Improved Research Outcomes



## Improving Experimental Reproducibility: Protein Analytics

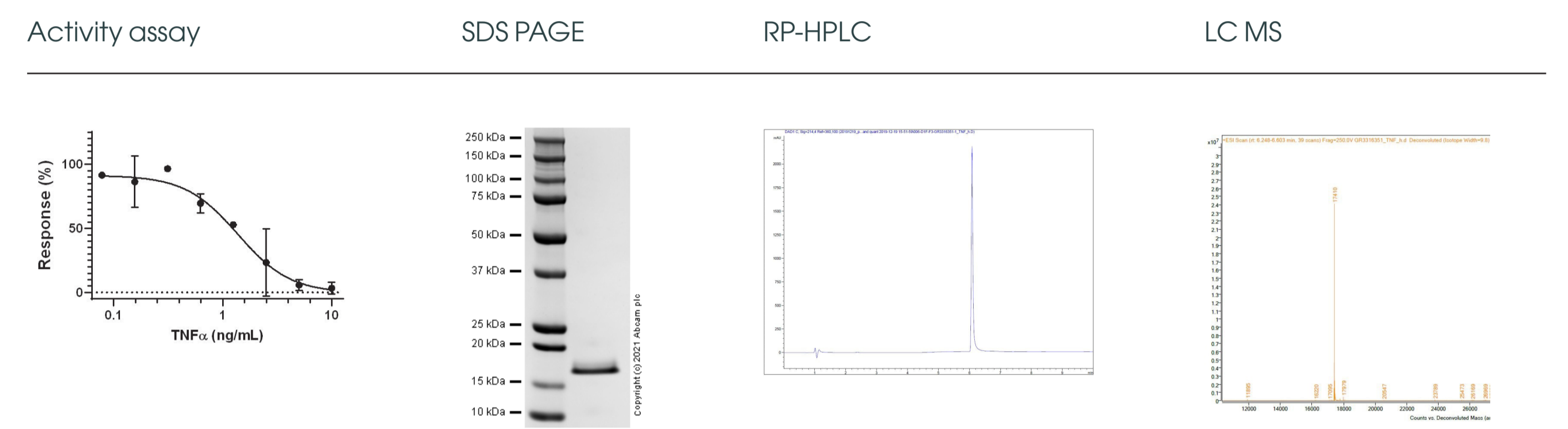
Rigorous quality control ensures batch to batch consistency.

1. High quality proteins on the catalog
2. Batch-to-batch reproducibility

Link to ab259410

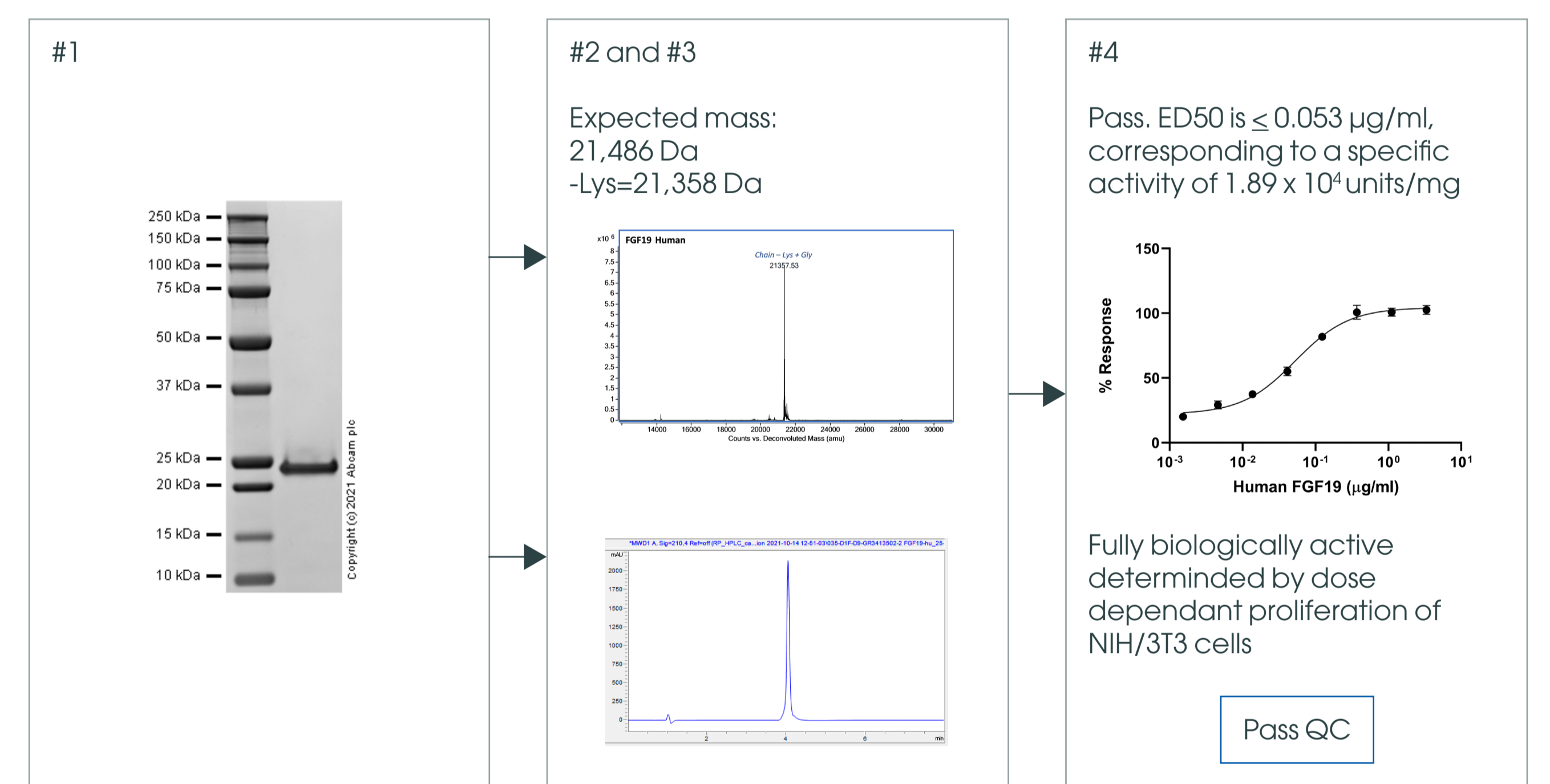


### Human TNF alpha, ab259410

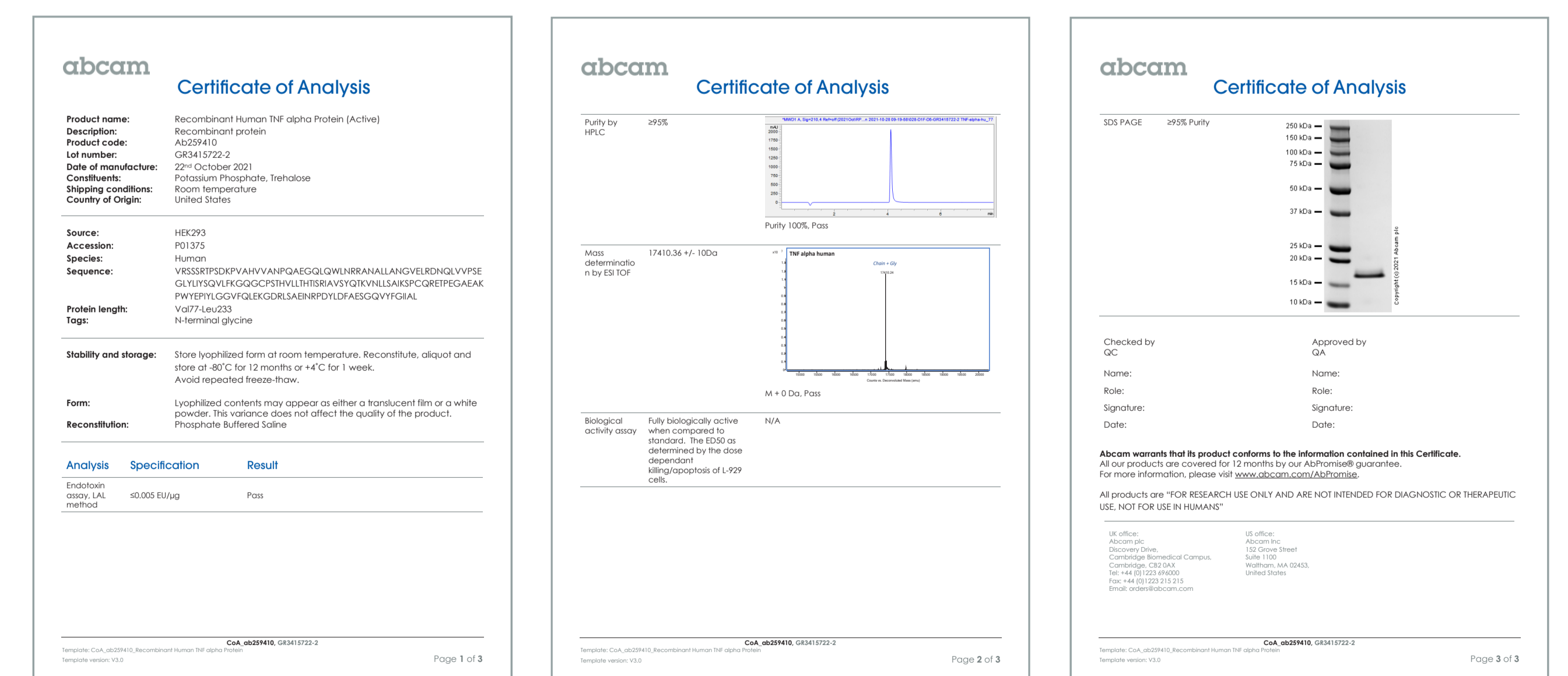


## Thorough Analytical Analysis Requires Multiple Analyses to Determine Purity

### FGF19 human protein



## Certificate of Analysis



## Conclusion

The Premium Bioactive Proteins at Abcam offers a new commercial option for purchase for researchers in Drug Discovery. These proteins are highly validated and are of the highest quality and purity offered by commercial reagent providers. Premium Proteins address the need for reagent reproducibility for drug discovery, and are available to purchase off the shelf immediately, saving the time and cost of internal reagent development.