

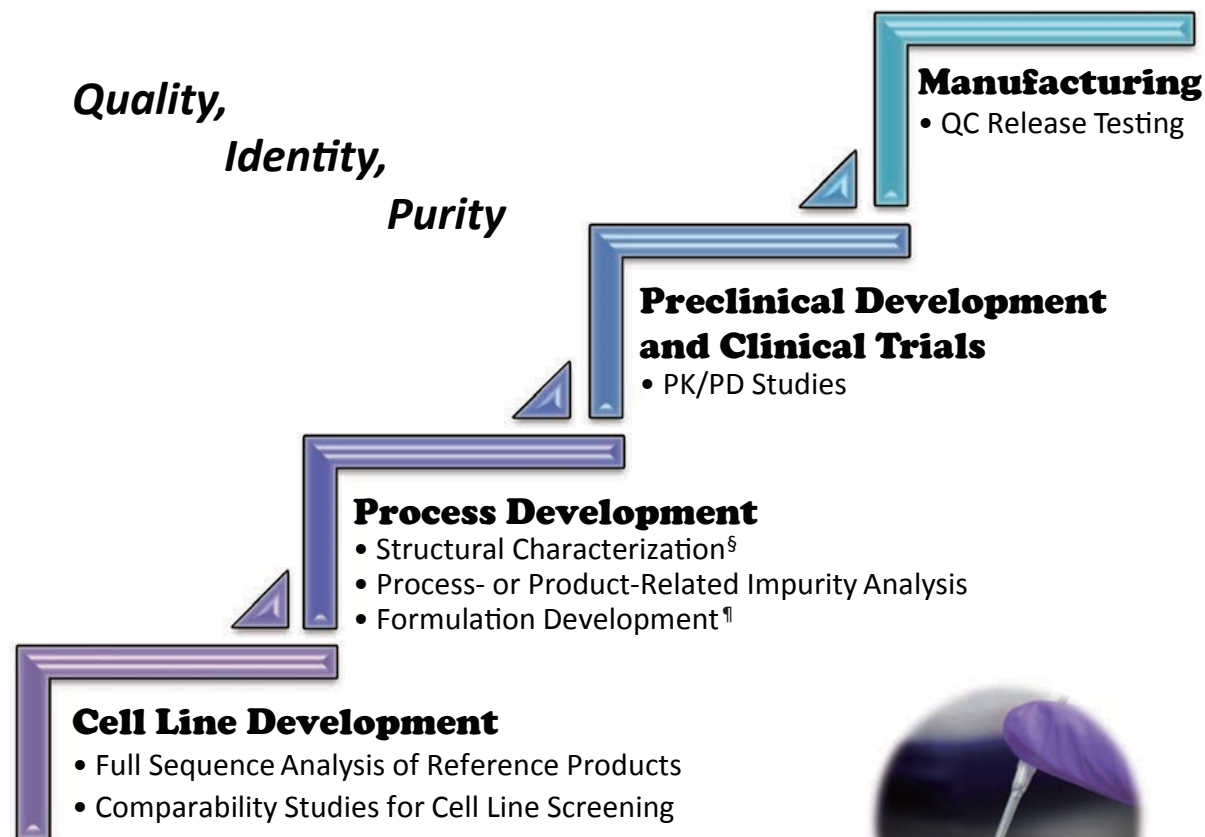
# From Discovery to Manufacturing

## Full Analytical Support for Biopharmaceutical Development



# Comprehensive Bioanalytical Services for Biologics and Biosimilar Development

**Monoclonal Antibodies, Antibody Drug Conjugates, Vaccines,  
Peptides, Glycoproteins, Recombinant Proteins**



§ Verification of Primary Structure  
§ Protein Quantitation  
§ Identification of PTMs  
§ Physicochemical Properties Determination  
§ Conformational Characterization

¶ Stability Testing  
¶ Impurity Analysis

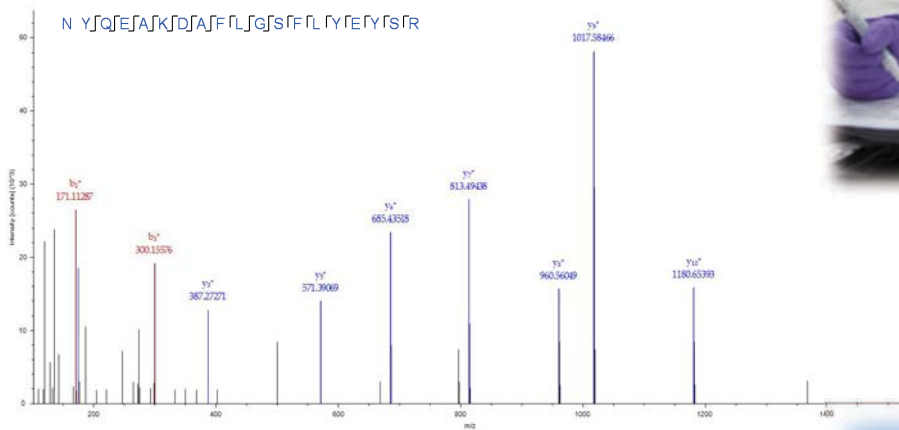


# Quality Assurance

## The First GLP Protein Analysis Lab in Taiwan

Mass Solutions Technology has been dedicated to assisting biopharmaceutical development from the preliminary discovery to manufacturing phase by offering comprehensive protein analysis services in accordance with ICH Q6B.

Our lab was inspected by Taiwan Food and Drug Administration (TFDA) in 2012 and found to be in compliance with the GLP requirements, which ensures that all experiments are conducted under a quality system to meet regulatory standards.



### ● ICH Q6B Specifications

#### Structural Characterization

- Amino Acid Sequence
- Amino Acid Composition
- Terminal Sequence
- Peptide Map
- Disulfide Bridges
- Carbohydrate Structure
- Glycan Profiles
- Glycosylation Sites

#### Physicochemical Properties

- Molecular Weight
- Molecular Size
- Isoform Pattern
- Electrophoretic Patterns
- Liquid Chromatographic Patterns

#### Process- and Product-Related Impurities

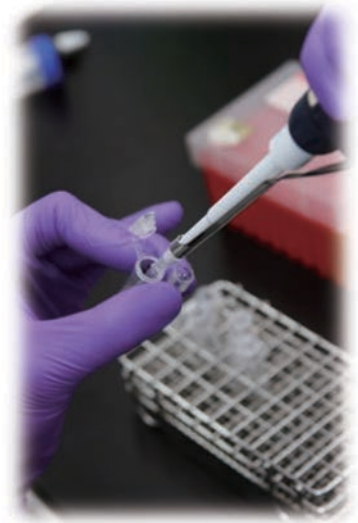
- Host Cell Proteins
- Truncated Forms
- Deamidated Forms
- Oxidized Forms
- Other Modified Forms
- Aggregates



# LC-MS Services for Protein Characterization

For academic clients, we offer research oriented services including protein identification, modification determination and protein differential expression analysis of various biological samples.

For biopharmaceutical industry, we provide full characterization plans for biological products including molecular weight analysis, complete amino acid sequence and modification determination, peptide mapping for biosimilar comparison or lot-to-lot QC, and degradation/impurities profiling.



Primary Structure	PTM Identification
Protein Identification Full Sequence Analysis Peptide Mapping Molecule Weight Analysis Terminal Sequencing De novo Sequencing	Disulfide Bonds Glycosylation N/C-terminal Modification Lipidation PEGylation Phosphorylation Oxidation Deamidation
Carbohydrate Analysis	Customized Method Development
Glycosylation Sites Glycan Profiling Carbohydrate Structure	Protein Differential Display Biomarker Discovery Biomarker Verification Absolute/Relative Quantitation



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