



Risk Index.

Identifying Discovery Risks Early

Understanding where risk originates is only part of the solution, converting that awareness into structure protect scientific integrity as discovery advances.

Failure Point	Operational Impact	Scientific Consequence	Preventive Control
Weak or absent validated targets	Competing or redundant programs for multiple targets; mis-allocated resources	Delayed go/no-go decisions	Apply orthogonal validation principles using independent antibodies and complementary assays
Poor reproducibility	Lack of consistency; lack of quality expression	Repeat experiments; uncertainty or variability in data; need for multi-parameter engineering	Incorporate recombinant antibody engineering, screening and alternative scaffolds
Limited applications	Limits usability in multiple downstream applications	Limits in assay or functional compatibility; need for multiparameter engineering	Use VHH and recombinant workflows; multiple in-house validations for multiple assays

Failure Point	Operational Impact	Scientific Consequence	Preventive Control
Reagent batch-to-batch variability	Compromised data integrity	Inconsistent experimental results across assays; Reduced reproducibility	Confirm specificity and consistency using genetic validation (e.g., knockout / knockdown models)
Limited biological validation	Incorrect advancement of potential products	Weak translational predictability	Confirm specificity using multiplex histology and spatial imaging on Lunaphore and Akoya systems
Poor antigen quality	Failed projects, wasted resources, project delays	Non-specific or weak antibodies	Confirm antigen integrity using recombinant expression and mass spectrometry
Inconsistent data	Inconsistent antibodies across vendors; unnecessary costs, wasted resources, and lost time	Lower confidence in data, time consuming troubleshooting	Standardized pipeline

Failure Point	Operational Impact	Scientific Consequence	Preventive Control
Limited partner transparency	Delayed decisions; misaligned expectations	Uncertainty in project feasibility and reduced confidence in project outcomes	Demand transparent, milestone-driven communication throughout antibody development
Limited assay transferability	Costly redesigns; extended development timelines	Time-consuming troubleshooting, lower confidence in data	Apply application-specific validation to confirm performance for intended assay formats