

Addressing the challenges in modern biotherapeutic development.

Next-generation approaches to enable the development and characterization of biotherapeutics applications.

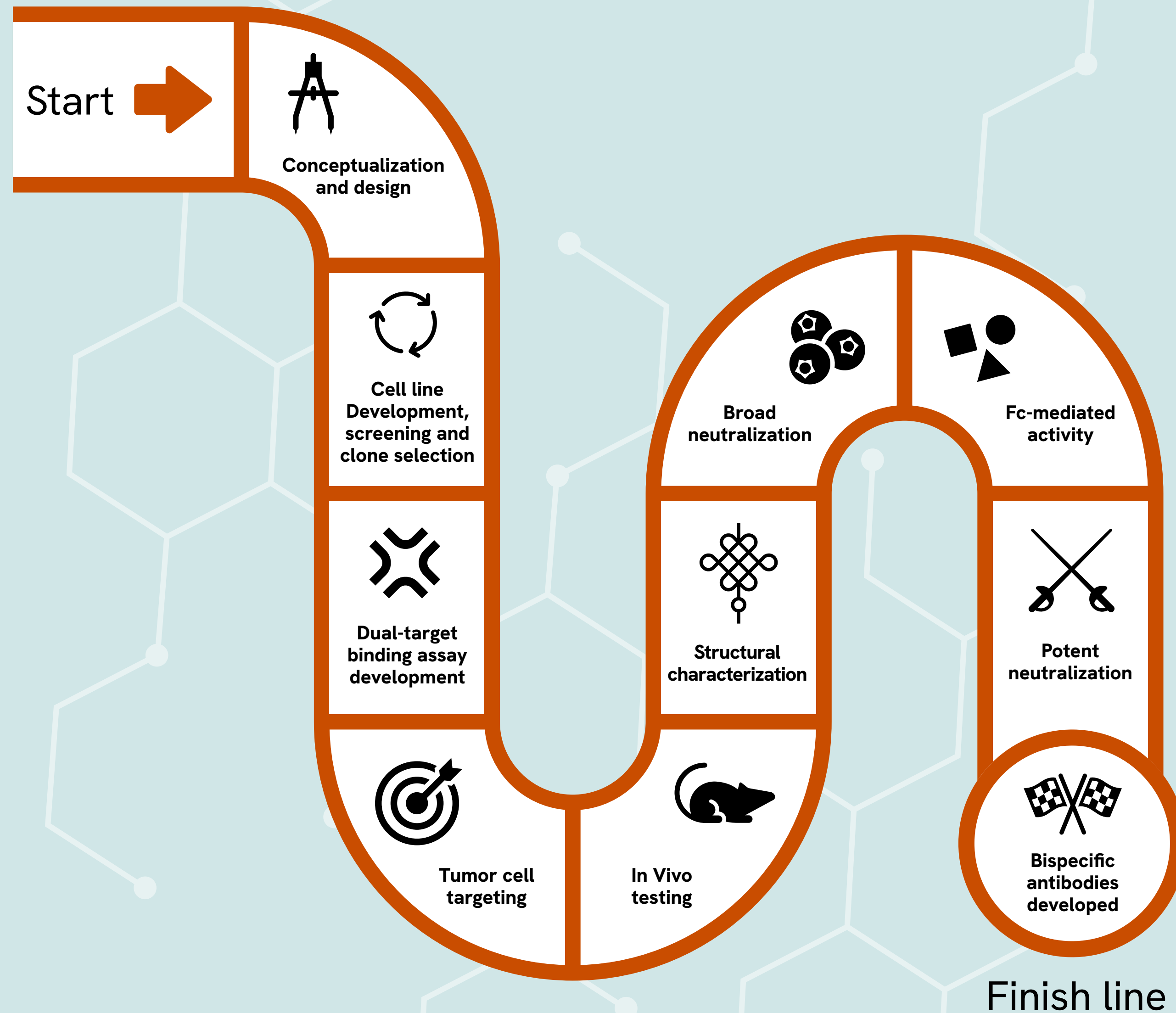
Charting the frontier: a journey through bispecific antibodies.

Embark on a journey through the intricate landscape of bispecific (BsAbs) and multispecific antibodies where innovation and discovery pave the way for groundbreaking therapies – novel frontiers in immunotherapy.



*Sources: 1. <https://www.fda.gov/drugs/news-events-human-drugs/bispecific-antibodies-area-research-and-clinical-applications>; <https://pubmed.ncbi.nlm.nih.gov/33197478/>

The path to bispecific antibodies



Challenges in BsAb development

Screening

Screening for BsAbs with desired binding properties can be complex. HTS methods for identification of antibodies are essential.

Dual binding

BsAbs engineered to bind two different epitopes on the same antigen with high specificity and affinity. Correct pairing of the antibody fragments is critical.

Digitization and analysis

Since the process involves multiple steps with careful characterization, data management and analysis is key to a streamlined and digitized process leading to a smooth scale up.

Lengthy and tedious protocols

BsAb development and production involves significant expertise and complex protocols to drive multiple steps from engineering the fragments, expression and purification, and characterization of the final product.

Tissue tropism

BsAbs must be designed to target the appropriate tissue or cell type. Factors such as antibody size, affinity, and binding orientation can impact tissue tropism and influence the pharmacokinetics and efficacy of the bispecific antibody.

Pharmacodynamics

Pharmacodynamics of BsAbs is complex with multiple protein-protein interactions on the same molecule which must be carefully designed to ensure the desired biological activity – induce cell killing or immune modulation.

Time consuming process

BsAb development can be affected by factors such as the cell line, transfection efficiency, and protein stability. Ensuring consistency and reproducibility is critical, which requires constant process optimization.

Revvity's solutions for your Bispecific / Multispecific antibodies quest.

Cell Line Development (CLD), screening and clone selection

CHOSOURCE Expression Platform | Celigo Image Cytometer | LabChip GX Touch | JANUS G3 BioTX Pro Plus Workstation | Cellaca MX High-throughput Cell Counter

Dual-target binding assay development

BioLegend antibodies | Microplates | EnVision Nexus Multimode | LabChip GX Touch

Tumor cell targeting

BioLegend antibodies | Image analysis and data sharing | Microplates | Celigo Image Cytometer | Operetta CLS High-Content Analysis System

In vivo testing

Biogen GMP reagents | In vivo imaging reagents | IVIS Spectrum 2 In Vivo Imaging System

Structural characterization

BioLegend antibodies | LabChip GX Touch

Broad neutralization | Fc-mediated activity | Potent neutralization

AlphaLISA assays | FRET | HTRF assays | Microplates | EnVision Nexus Multimode

For more information, visit: www.revvity.com

For research use only. Not for use in diagnostic procedures.

