Custom Antibody Conjugation & Labeling Services

Looking for a specific antibody conjugate? Cell Signaling Technology (CST) can conjugate it for you.

- Validated and optimized to the same standards as the conjugated antibodies available in our catalog.
- Save time and avoid the pitfalls associated with do-it-yourself (DIY) kits.
- Need to validate the conjugated antibody yourself? We also offer basic conjugation services to match your timeline and budget needs.

CST® Custom Conjugation Advantages

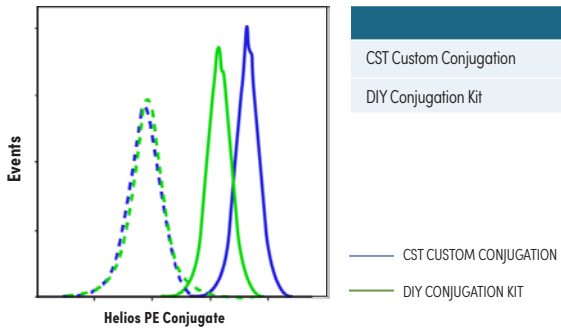
Validation: Size exclusion chromatography ensures conjugated antibodies retain physical integrity and are free of contaminants, such as antibody aggregates or fragments, that may interfere with your experiments. Certain application-specific testing with biologically relevant cells is available.

Optimization: Multiple conjugation chemistries (including site-specific chemistry), stringent purification for free dye/label and antibody removal, and identification of optimal degree of labeling can maximize the signal-to-noise ratio and product performance.

Flexibility: Multiple tiered service options, from basic antibody conjugation to full validation, are available to match your needs and budget.

Technical Support: Get comprehensive support and consultation from the same scientists who produce and validate CST antibodies and conjugates.

CST® Custom Conjugates Deliver Superior Performance



	Signal-to-Noise
CST Custom Conjugation	59.2
DIY Conjugation Kit	17.6

DIY conjugation kit vs CST Custom Conjugation: Comparison of PE conjugation of Helios (D8W4X) Rabbit mAb by flow cytometry, using CST custom conjugation method (blue) and another company's DIY conjugation kit (green), on both RL-7 (dashed lines), a low-expressing cell line, and Jurkat (solid lines), a high-expressing cell line. A comparison of the calculated signal-to-noise ratio is also shown. Avoid the inefficiencies caused by DIY conjugation such as suboptimal labeling, interference with specificity, and/or destabilization/degradation that can negatively affect antibody performance and decrease yields.

Custom Conjugation in Spatial Biology

The data below illustrate the performance of CST custom-made conjugated antibodies in multiplexing applications to examine spatial biology.

Multiplexed imaging using a panel of custom-conjugated antibodies highlights immune cell components in colon adenocarcinoma (CAC) tissue on a single slide.

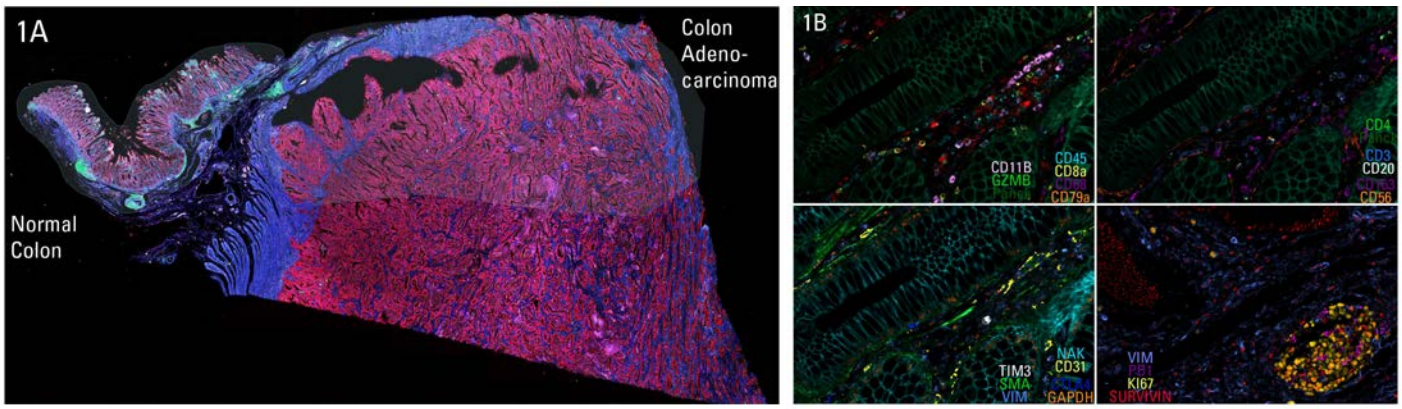


Figure 1A & 1B. Cell DIVE multiplexed imaging analysis of mouse colon adenocarcinoma iteratively stained with 30 CST biomarker antibodies, including those used for segmentation and phenotyping. Oncology markers were stained to understand how the tumor microenvironment (TME) evolves during tumorigenesis and treatment response. Immune cell markers for interrogating myeloid and lymphoid cell lineages and structures were prioritized, as well as those used to detect key proteins in the TME, such as Vimentin, Ki-67, TIM-3, and CD45. All data was generated on the Leica Microsystems (LMS) Cell DIVE instrument, by LMS scientists.

cst-science.com/customconjugation

Cell Signaling TECHNOLOGY®

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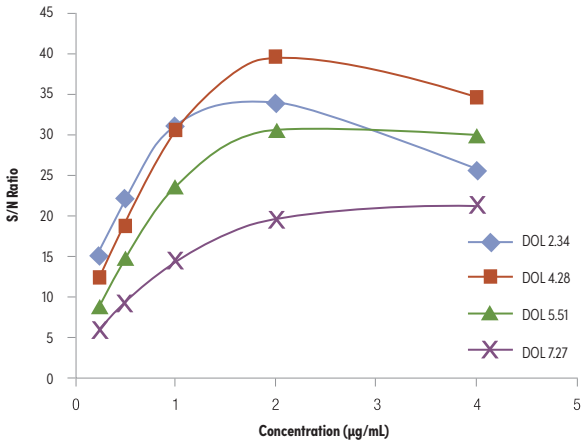
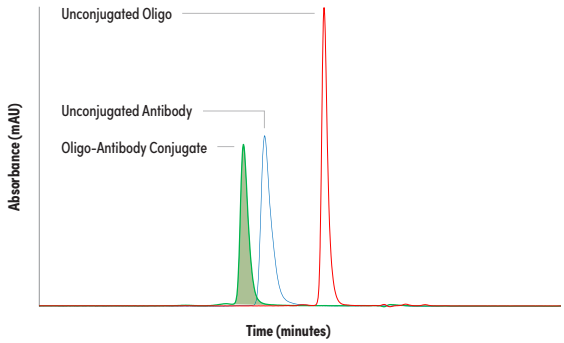
Degree of Labeling (DOL) to Ensure Specific Signal Intensity



DOL service option for fluorophores: Conjugation to certain fluorescent dyes (Alexa Fluor® and Pacific Blue™) is optimized by degree of labeling (DOL) testing to identify the optimal antibody: dye molecular ration, resulting in conjugates with maximum specific signal intensity.

Size Exclusion to Isolate Oligo-Antibody Conjugate



Final conjugate isolated from unconjugated starting materials: Size exclusion chromatogram comparing purified oligo-antibody conjugate (green peak) to unconjugated antibody (blue line) and unconjugated oligo (red line). CST uses size exclusion chromatography to separate out free materials and deliver only the purified oligo-antibody conjugate product to the customer, ensuring a higher quality reagent.

Conjugation Services Available:

Conjugation Type	Service Tier	Service Includes
Fluorophores Type I: Alexa Fluor®,Cyanine (CyDye®), Pacific Blue™, mFluor™, iFluor® dyes, and more	Basic	Conjugation + removal of free dye
	Tier I	Degree of labeling (DOL) + Basic Service
	Tier II	Validation[1] + Tier I Service
Fluorophores Type II: Phycoerythrin (PE), PE-CyDye® tandems (e.g. PE-Cy®7), and allophycocyanin (APC)	Basic	Conjugation + purification
	Tier I	Validation[1] + Basic Service
Haptens: Biotin, Digoxigenin (DIG), DNP, and Dansyl	Basic	Conjugation + removal of free biotin
	Tier I	Validation[2] + Basic Service
Lanthinides: trFluor™ Europium Cryptate[4]	Basic	Conjugation + removal of free antibody
Beads: Sepharose®, Magnetic, and Agarose	Basic	Conjugation + removal of free antibody
	Tier I	Validation[3] + Basic Service
Enzymes: Horseradish peroxidase (HRP)	Basic	Conjugation + purification
	Tier I	Validation[2] + Basic Service
Oligonucleotides[5]: SignalStar® Oligos, Akoya PhenoCycler Barcodes, 10x Genomics Feature Barcodes, and customer-specific sequences	Basic	Conjugation + purification

1. Standard validation application method is flow cytometry.
2. Standard validation application method is western blot.
3. Standard validation application method is Immunoprecipitation.
4. Europium conjugates can be paired with CST off-the-shelf or custom-made Alexa Fluor® 647 and APC conjugates, providing both the donor and acceptor for TR-FRET assays.
5. Oligonucleotide conjugation offerings may be limited for certain intellectual property (IP)-protected technologies.

Interested in a custom conjugation or don't see your label of interest?

Tell us about your research needs, and our scientists will get back to you. In many cases, we can easily accommodate your request.

20-ETC-49293-FLY1-EN-MAY25

For Research Use Only. Not for Use in Diagnostic Procedures.

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