

## OTHER BIOCONJUGATION SOLUTIONS

### Personalized Conjugation Kit (PerKit™)

To meet our customer's individual requirements for bioconjugation, CellMosaic® have developed a product line called Personalized™ Bioconjugation Kit (PerKit®) based on its advanced bioconjugation processes since 2016. This product line is perfect for customers who have either a limited budget for conjugation or need frequent/large volume conjugation of one or multiple molecules. PerKit® is different from any other bioconjugation kits on the market in many ways.

- **Focusing on individual requirements** (either customer or molecule): Each molecule is unique, as a bioconjugation process that works for one molecule may not work for another. PerKits™ are tailored for each class of molecule and designed to help customers perform the bioconjugation themselves with confidence. For example, some of the PerKits™ are made to order. Based on the input from customers when placing the order, the content and user manual of the PerKit® will be modified to accommodate the need. In some cases, customers can request a PerKit® sheet containing calculations, chemical structure, and MW of the final conjugate, with recommendations for the conjugation if there is some special feature of the molecule.
- **Validated processes:** Most of the linkers/spacers and conjugation chemistry used for PerKit® have been validated in similar conjugates made via Custom Bioconjugation Services. All PerKit® products will be tested before being put on the market and sample conjugation data shared.
- **Produce high-quality conjugates:** Purification accessory is included in the kit to ensure the quality of the conjugate.
- **Simple and easy to use:** The kits are complete with all reagents and procedures except customer-supplied molecules. Most of the kit can be done within a day.
- **Superior customer support:** Customer support is readily available to customers throughout the conjugation processes. Additional support services are also available to customers who need further analysis of their conjugates.

### SepSphere™ Immobilization Kits

Name	Product No.
Antibody/Protein/Enzyme Immobilization Kit via Glyoxyl	CM71542
Peptide Immobilization Kit via Maleimide	CM71301
Peptide Immobilization Kit via Pyridyl Disulfide	CM71302
Oligo Immobilization Kit via Carboxylic Acid	CM71401
Small Molecule Acid Immobilization Kit	CM71004
Small Molecule Ketone Immobilization Kit	CM71010
Small Molecule Amine Immobilization Kit via Glyoxyl	CM71005

### Oligo Labeling and Conjugation Kits

Name	Product No.
HRP-Oligo Conjugation Kit (Single label with amine oligo)	CM53407
HRP-Oligo Conjugation Kit (Single label with thiol oligo)	CM53402
AP-Oligo Conjugation Kit (Single label with amine oligo)	CM53403
Antibody-Oligo Conjugation Kit	CM53405
Peptide-Oligo Conjugation Kit	CM42301

### Protein Labeling and Conjugation Kits

Name	Product No.
HRP Protein Conjugation Kit (HMW)	CM52414
HRP Protein Conjugation Kit (LMW)	CM52415
Protein Small Molecule Acid Conjugation Kit	CM52408

### Peptide Labeling and Conjugation Kits

Name	Product No.
HRP-Peptide Conjugation Kit	CM32401
BSA-Peptide Conjugation Kit	CM52402
KLH-Peptide Conjugation Kit	CM52411
Ova-Peptide conjugation Kit	CM52418
Antibody-Peptide Conjugation Kit	CM32402

## Antibody Fragmentation Kits

Name	Product No.
F(ab') <sub>2</sub> Preparation Kit	CM51408
Fab Preparation Kit	CM51407

## Biotin and Streptavidin Labeling Kits

Name	Product No.
AqT <sup>™</sup> Biotin Active Ester Antibody Labeling Kit	CM86140
Streptavidin-Antibody Conjugation Kit	CM52420x1
Streptavidin Oligo Conjugation Kit	CM52421

## Antibody Labeling and Conjugation Kits

Name	Product No.
HRP Antibody Conjugation Kit	CM51406
Antibody Small Molecule Acid Conjugation Kit	CM51403
Antibody-Oligo Conjugation Kit	CM53405
Antibody-Peptide Conjugation Kit	CM32402

## Antibody Production Tools

Name	Product No.
BSA Small Molecule Acid Conjugation Kit	CM52403
BSA Universal Small Molecule Acid Conjugation Kit	CM52425
KLH Small Molecule Acid Conjugation Kit	CM52412
KLH Universal Small Molecule Acid Conjugation Kit	CM52426
Ova Small Molecule Acid Conjugation Kit	CM52419

## Pre-made Bioconjugate-Related Reagents and Labeled/Modified Molecules

### Standards and Controls

Name	Product No.
ADC Control hIgG1-MMAE	CM51100
ADC Control hIgG1-SN38	CM51102
Curcumin-beta-D-Glucuronide MS Standard	CM16001
SEC (Gel Filtration) HPLC Low Molecule Weight (LMW) Protein Standard	CM92005
SEC (Gel Filtration) HPLC Protein Standard	CM92004

### Streptavidin/Avidin

Name	Product No.
AqT <sup>®</sup> Biotin G/H IgG, Fc Gamma Fragment	CM86101
Biotin-Alprenolol	CM61002
Biotin-d(PEG) <sub>2</sub> -Preladenant	CM61008
HRP-Streptavidin (1:1) Conjugate	CM53202
Maleimide Activated Streptavidin ML	CM52401

### Enzyme

Name	Product No.
C6 Maleimide Activated HRP	CM53214
HRP-Deruxtecán (Dxd) (1:1)	CM53215
HRP-MMAF (1:1)	CM53216
HRP-Streptavidin (1:1)	CM53202
HRP-VC-PAB-MMAF (1:1)	CM53217
Thiol Activated HRP (HRP-PEG <sub>4</sub> -SPDP)	CM53101
HRP-MMAE (1:1) Conjugate	CM53209
HRP-MMAE (1:2) Conjugate	CM53210

### Antibody

Name	Product No.
ADC Control hIgG1-MMAE	CM51100
ADC Control hIgG1-SN38	CM51102
AqT <sup>®</sup> Biotin G/H IgG, Fc Gamma Fragment	CM86101

### Small Molecules and Solid Supported

Name	Product No.
Fluorescein-Doxorubicin	CM62101
Phenyldiazirine oxLink <sup>™</sup> (T2A10)	CM81402
Phenyldiazirine oxLink <sup>™</sup> (T2A14)	CM81401
Light and Heavy Quaternary Amine MS	CM63401
SepSphere <sup>™</sup> Alprenolol Agarose	CM29101

## BSA Conjugates

Name	Product No#.
BSA-Deruxtecan	CM52140
ADC Control hlgG1-SN38	CM51102
BSA-DM1 (Mertansine)	CM52110
BSA-DM4 (Ravtansine)	CM52112
BSA-MMAE	CM52113
BSA-PEG2-Xylazine	CM52141
BSA-Creatinine L8 Conjugate	CM52117
BSA-Creatine L8 Conjugate	CM52132
BSA-Digoxigenin Conjugate	CM52107
Ciprofloxacin-BSA ML	CM52135
Sulfadimethoxine-BSA HL	CM52127
Sulfamethazine-BSA HL	CM52136
Maleimide Activated BSA HL	CM52111

## KLH and Other Carriers

Name	Product No#
Maleimide Activated Ova HL	CM52114
Maleimide Activated KLH HL	CM52109
Maleimide Activated Streptavidin ML	CM52401
SepSphere™ Alprenolol Agarose	CM29101
Thiol-Activated HRP (HRP-PEG4-SPDP)	CM53101
KLH-Digoxigenin Conjugate	CM52108
HRP-Streptavidin (1:1) Conjugate	CM53202

## Assay, Buffers and Others

Name	Product No#
Thiol Assay Kit with Purification	CM90005
Maleimide Assay Kit	CM90002
Thiol Assay Kit	CM90004
ADC Stabilizing Buffer	CM02022
HIC Buffer Set	CM02025

## Custom Bioconjugation Services for Specialized Conjugates

CellMosaic started the custom bioconjugation service (CBS) since 2008. Over the years, CellMosaic has become a premier service provider and offer expertise in all bioconjugation-related services for projects with more complex chemistry or projects requiring larger product volumes or tighter specifications of the resulting final product. In particular, CellMosaic helps customers with "off the shelf" conjugation products using its advanced conjugation processes. CellMosaic has all the resources and expertise needed to fulfill such tasks, from small molecule synthesis to big molecule modification and conjugation, purification, analysis, and testing. CellMosaic takes care of the entire work flow, from molecular design to manufacturing. CellMosaic's expertise covers a wide range of small molecules and biopolymers. In a typical custom conjugation service, customers specify what kinds of molecules (either commercial or their own molecules) are to be conjugated. CellMosaic will design the molecule using commercial linkers, and then use its process to make the conjugate and supply it to the customer.

### Features and Benefits of our Services:

- ✓ **Wide range:** We offer a complete solution for biologists by sourcing (internally or externally) all raw materials and assembling the final product.
- ✓ **Flexibility in conjugation chemistry:** CellMosaic strategically designs its conjugation chemistry around the targeted biopolymer's properties and the customer's intended use. CellMosaic generates the bioconjugate that best meets the customer's downstream research requirements.
- ✓ **Quality:** CellMosaic provides high quality services. We provide all of the necessary analytical data to facilitate the customer's understanding of the product.

### Typical Examples of CBS CellMosaic Offers

- **Antibody Production Tools:** hapten-carrier conjugation
- **Assay Development Tools:** fluorescent/colorimetric labeled biopolymers, antibodies/proteins labeled with biotin, antibodies/proteins labeled with enzyme, and peptide or nucleic acid conjugates.
- Protein Labeling and Conjugation
- Enzyme Labeling and Conjugation
- Nucleic Acid and Oligonucleotide Labeling and Conjugation
- Peptide and Peptidomimetic Labeling and Conjugation
- Fluorescence Labeling
- Biotinylation

## Bioconjugation Analysis and Purification Services

CellMosaic specializes not only in creating novel conjugates, but also in the analysis, purification, and assay of varieties of biologics and conjugates. Over the years, purification and analysis methods have been developed for small molecules, antibodies, proteins, peptides, oligos, enzymes, and their conjugates. CellMosaic offers the following services.

- **HPLC Analysis:** reverse-phase HPLC, SEC, HIC, anion and cation exchange chromatography, and other HPLC analysis with special columns.
- **MS Analysis:** analysis of molecules using electrospray ionization (EI) mass spectrometry or matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) mass spectrometry. MS analysis services for small molecules, peptides, oligos, proteins, antibodies, and their bioconjugates at very competitive rates with high-quality data.
- **Biopurification Services:** purification services ranged from small molecules to large biopolymers. One of the key aspects of CellMosaic's services is that biopurification methods can be developed for the separation of a single and pure bioconjugate based on its properties.
- **Bioassay Services:** Examples are biotinylation assay, thiol and maleimide assay, endotoxin assay, TNBS assay for amine.

## Bioconjugation Drug Development

CellMosaic offers a complete drug discovery and development program for drug conjugates and drug modifications using classical linkers and polymers. Over the years, CellMosaic has delivered many high-quality conjugate drugs for customers based on its advanced conjugation processes. These processes can be modified for new conjugate drug development for the customer

- Antibody-oligo conjugate
- Peptide-small-molecule drug conjugate
- Oligo-peptide conjugate
- Protein-antibody conjugate
- Protein-small-molecule drug conjugate
- Polymer-small-molecule drug conjugates
- Other drug conjugates, such as:
  - Lipidation of antibody and antibody fragments
  - Pegylation of protein/peptide
  - Modification of small-molecule drugs, such as sugar-curcumin conjugate, synthesis of activated toxin
  - Other bivalent conjugates, such as peptide-protein, Fab-protein, Fab-oligo, BSA-toxin
  - Other drug conjugates involving three or more types of molecules, such as protein-antibody-dye conjugates for assay development.

## Diagnostic Conjugate Development

CellMosaic offers research and process development services for diagnostic or medical imaging companies interested in developing highly specific diagnostic bioconjugates. CellMosaic's scientists have extensive experience in developing fluorescent-, antibody-, peptide-, and oligonucleotide-based detection agents. CellMosaic provides a complete solution for the development of diagnostic bioconjugates, including.

- Custom design and development of conjugation strategies to fit the customer's needs
- Feasibility studies: synthesis of linker molecules, modification of biomolecules, and evaluation of the conjugation chemistry.
- Process development
- Development of a purification method for diagnostic bioconjugates
- Development of bioanalytical methods