

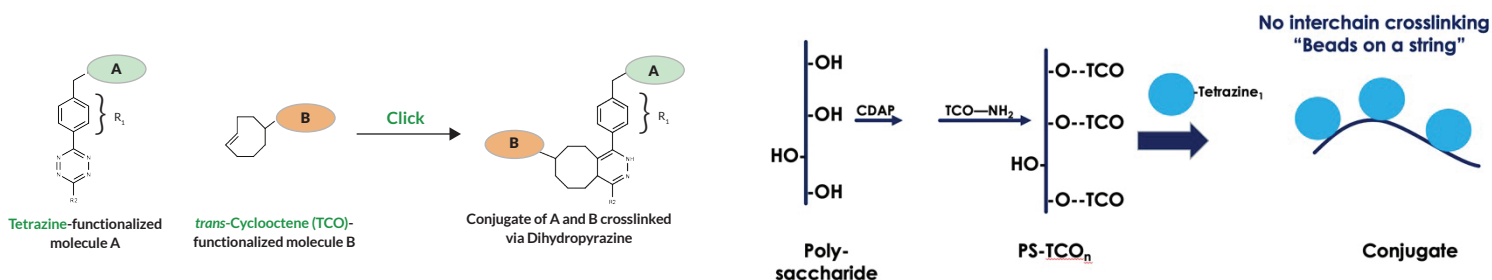
Ready-to-Conjugate™ Click Carrier Proteins

Many antigens are poorly immunogenic unless chemically linked to a “carrier” protein. FinaBio provides a range of carrier proteins including CRM₁₉₇, tetanus toxoid and Qβ virus-like particles. To further facilitate conjugate vaccine development, we also offer our carrier proteins in a Ready-to-Conjugate™ format, already derivatized with linkers. Ready-to-Conjugate proteins are available with linkers for thiol, aminoxy and click reactivity. Our click carrier proteins are derivatized with azide or tetrazine, including site-specific labeling.

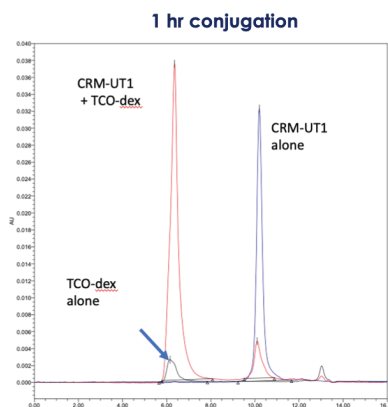
Ready-to-Conjugate Site-Specific Conjugation with CRM₁₉₇

In collaboration with Valanx Biotech (Austria) we are pleased to introduce site-specific MonoClickCRM™, with a single site-specific tetrazine for click conjugation. Incorporation of the site-specific tetrazine amino acid is close to 100%, allowing for high levels of conjugation. Using click chemistry, CRM₁₉₇ can be linked to TCO-derivatized polysaccharides with high coupling efficiency, allowing for polysaccharide conjugation without interchain crosslinking.

Fast Click Tetrazine/ TCO Conjugation



To demonstrate the ease of use and high efficiency, 2000 kDa dextran was derivatized with TCO using CDAP chemistry and combined with monoClickCRM™ at 1 mg protein/mg polysaccharide. After 1 hr, the conjugate was assayed by size exclusion HPLC. About 90% of the protein eluted in the void volume, indicating conjugation to the high MW dextran. When analyzed by SDS PAGE, only a small percentage of the protein entered the gel, since the conjugated protein was too large to enter (not shown).

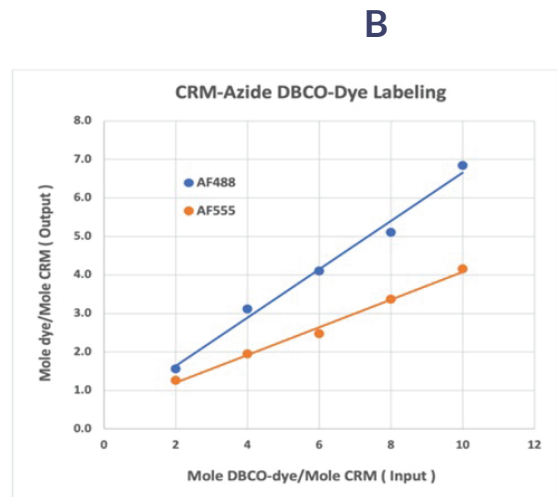
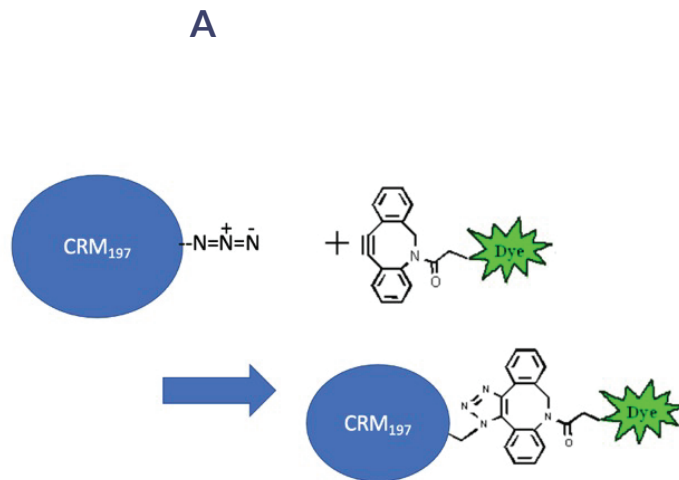


~90% of UV area of CRM-UT1 + TCO-dex is as conjugate

CRM₁₉₇-Azide

Ready-to-Conjugate™ CRM₁₉₇-Azide contains ~15 azide groups randomly linked to lysines, ready for conjugation to alkyne, DBCO, or BCN-tagged ligands. This protein has been purified to remove any trace of Azide labeling reagent. CRM₁₉₇-Azide can be conjugated using either copper or copper-free click chemistry.

Copper-Free Click Chemistry



DBCO-AF488 and DBCO-AF555 were conjugated to CRM₁₉₇-azide at molar ratio of Dye/CRM₁₉₇ of 2-10x molar ratios, 25 µl of DBCO-dye/DMSO solutions of desired concentrations to a mixture of 200 µl (1 mg) of CRM₁₉₇-azide and 175 µl of PBS pH 7.2. Reactions were mixed at 20°C for 2 – 4 hours, then incubated at 37°C overnight and purified by dialysis. Dye/ CRM ratios were calculated from absorbances.

About Fina Biosolutions

Fina Biosolutions, a conjugate vaccine R&D company, is committed to increasing the availability of carrier proteins and conjugation technology. We provide conjugation services, technology and carrier proteins to promote the development of conjugate vaccines.

Other Offerings from Fina Biosolutions

Ready-to-Conjugate™ Carrier Proteins to Simplify Synthesis

Carriers: CRM₁₉₇, 8MTT (tetanus toxin), rTTHc, Qβ VLP

Qβ particles are licensed from Iaso Therapeutics

Linkers: maleimide, bromoacetate, aldehyde, azide, tetrazine