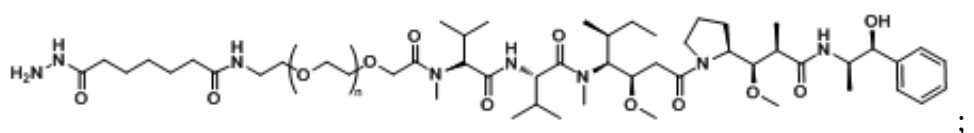
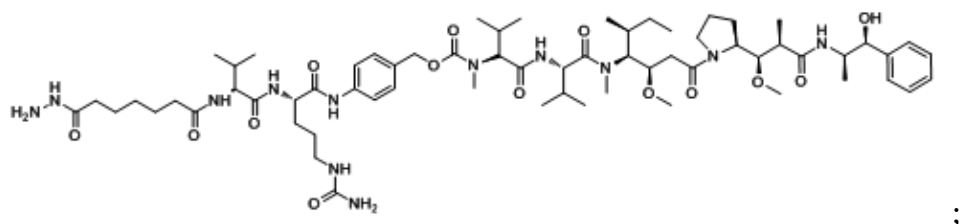
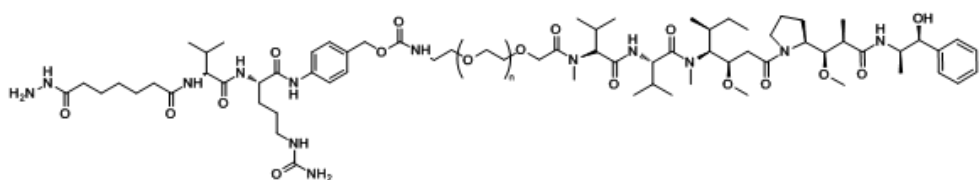


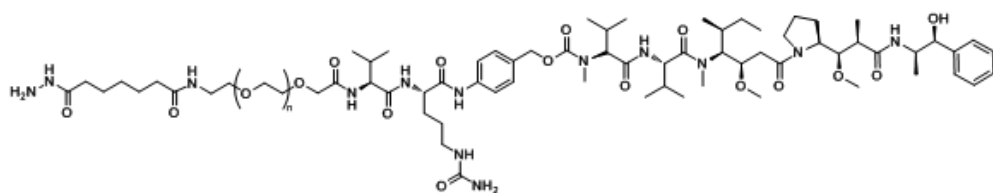
bond is formed, and wherein neither the binding polypeptide nor the sialic acid derivative-conjugated binding polypeptide are treated with an oxidizing agent.

In one embodiment, the sialic acid derivative-conjugated binding polypeptide comprises a terminal keto or aldehyde moiety. In another embodiment, the effector moiety comprises a terminal aminooxy moiety or is bound to a moiety comprising an aminooxy derivative. In a further embodiment, the effector moiety is selected from those in Figures 45 and 46.

In one embodiment, step (b) results in the formation of an oxime bond. In another embodiment, the effector moiety comprises a terminal hydrazine. In a specific embodiment, step (b) results in the formation of a hydrazone linkage. In a further embodiment, the effector moiety has one or more of the following structural formulas:



15 ; and



In one aspect, the instant application provides methods of making an effector moiety conjugated binding polypeptide comprising the steps of: (a) reacting a CMP-sialic acid derivative comprising a terminal reactive moiety at the C5 position with a glycan of a binding polypeptide to form a sialic acid derivative-conjugated binding polypeptide; and (b) reacting the sialic acid derivative-conjugated binding polypeptide

We claim:

1. A method of making an effector moiety conjugated binding polypeptide comprising the steps of:

5 (a) reacting a cytidine monophosphate-sialic acid (CMP-sialic acid) derivative with a glycan of a binding polypeptide to form a sialic acid derivative-conjugated binding polypeptide;

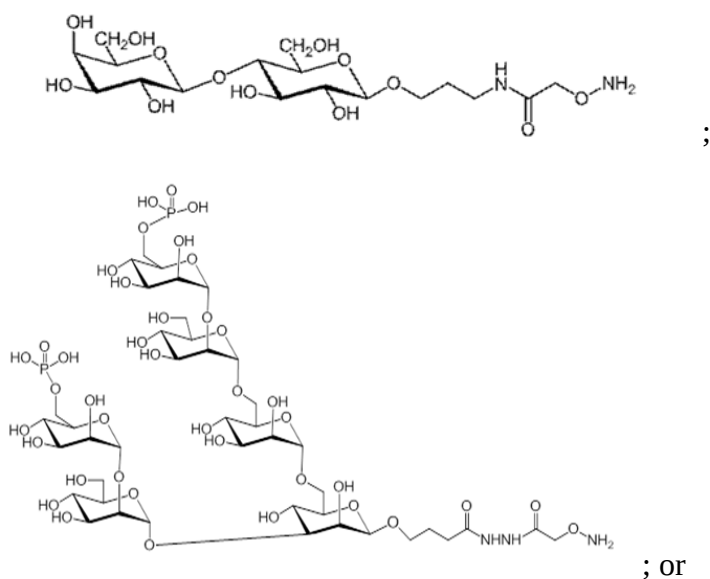
(b) reacting the sialic acid derivative-conjugated binding polypeptide with an effector moiety to form the effector moiety conjugated binding polypeptide, wherein
10 an imine bond is formed, and wherein neither the binding polypeptide nor the sialic acid derivative-conjugated binding polypeptide are treated with an oxidizing agent.

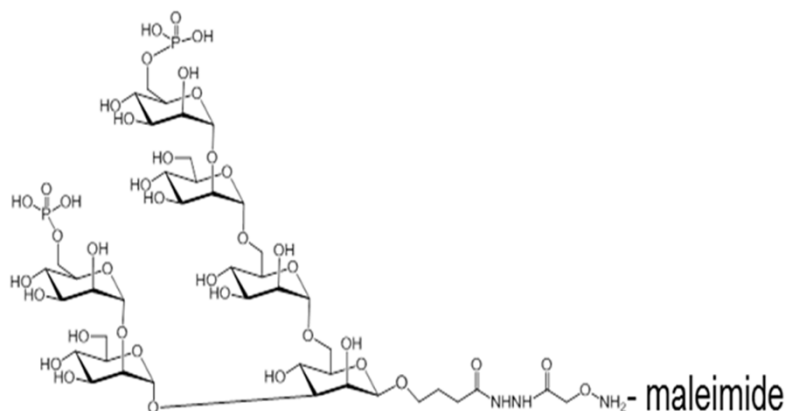
2. The method of claim 1, wherein the sialic acid derivative-conjugated binding polypeptide comprises a terminal keto or aldehyde moiety.

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3. The method of claim 1 or 2, wherein the effector moiety comprises a terminal aminooxy moiety or is bound to a moiety comprising an aminooxy derivative.

4. The method of any one of claims 1 to 3, wherein the effector moiety is
20 selected from one or more of the following structural formulas:





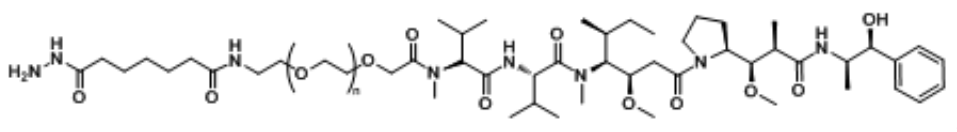
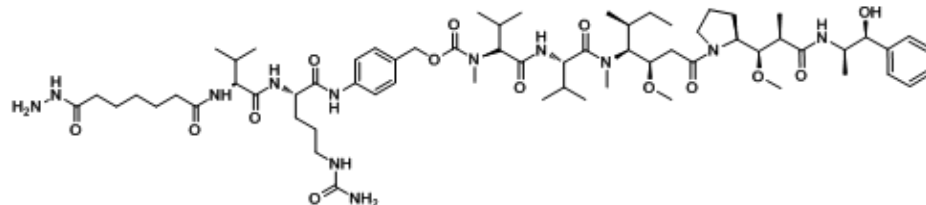
5. The method of any one of claims 1 to 4, wherein step (b) results in the formation of an oxime bond.

5

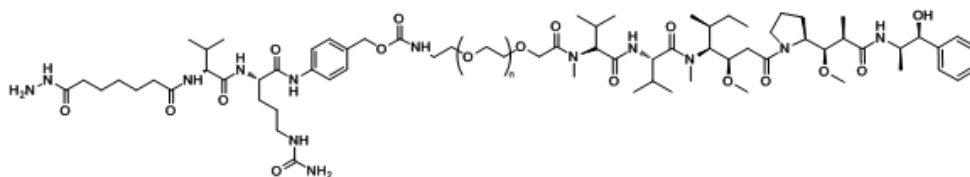
6. The method of claim 1 or 2, wherein the effector moiety comprises a terminal hydrazine.

7. The method of claim 6, wherein step (b) results in the formation of a
10 hydrazone linkage.

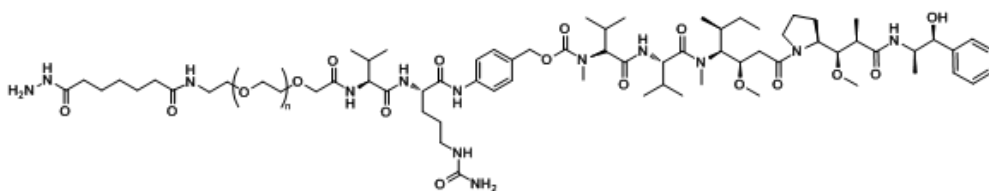
8. The method of claim 7, wherein the effector moiety has one or more of the following structural formulas:



15



; and



9. A method of making an effector moiety conjugated binding polypeptide comprising the steps of:

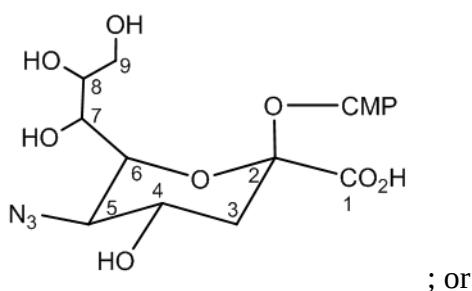
5 (a) reacting a CMP-sialic acid derivative comprising a terminal reactive moiety at the C5 position with a glycan of a binding polypeptide to form a sialic acid derivative-conjugated binding polypeptide;

(b) reacting the sialic acid derivative-conjugated binding polypeptide with an effector moiety to form the effector moiety conjugated binding polypeptide using
10 click chemistry.

10. The method of claim 9, wherein the terminal reactive moiety is an azide, wherein the effector moiety comprises an alkyne or is bound to a moiety comprising an alkyne, and wherein step (b) forms a triazole ring at or linked to the C5 position of
15 the sialic acid derivative.

11. The method of claim 9 or 10, wherein neither the binding polypeptide nor the sialic acid derivative-conjugated binding polypeptide are treated with an oxidizing agent.
20

12. The method of any one of claims 9 to 11, wherein the CMP-sialic acid derivative has a structural formula selected from the following:



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