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(54) Title: COMPOSITIONS CONTAINING, METHODS INVOLVING, AND USES OF NON-NATURAL AMINO ACIDS AND POLYPEPTIDES

(57) Abstract: Disclosed herein are non-natural amino acids and polypeptides that include at least one non-natural amino acid, and methods for making such non-natural amino acids and polypeptides. The non-natural amino acids, by themselves or as a part of a polypeptide, can include a wide range of possible functionalities, but typical have at least one oxime, carbonyl, dicarbonyl, and/or hydroxylamine group. Also disclosed herein are non-natural amino acid polypeptides that are further modified post-translationally, methods for effecting such modifications, and methods for purifying such polypeptides. Typically, the modified non-natural amino acid polypeptides include at least one oxime, carbonyl, dicarbonyl, and/or hydroxylamine group. Further disclosed are methods for using such non-natural amino acid polypeptides and modified non-natural amino acid polypeptides, including therapeutic, diagnostic, and other biotechnology uses.

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