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(54) Title: BIOLOGICALLY ACTIVE CLUSTER OF MOLECULES

(57) Abstract: The invention relates to a molecular scaffold suitable for covalently binding at least one biologically active molecule to a carrier molecule, the scaffold comprising a polymeric structure and the biologically active molecules covalently bound to said polymeric structure, and wherein the scaffold further comprises a chemical group for covalently coupling of the scaffold to the carrier molecule. The biologically active molecule has a molecular weight of 3.000 Dalton or less, such as 1.700 Dalton - 1.950 Dalton. The biologically active molecule is an amphiphilic molecule in some embodiments. The biologically active molecule is a single specific molecule or is a mixture of different types of molecules, when more than one biologically active molecules are covalently bound to the polymeric (or oligomeric) structure. In particular, the invention relates to monoclonal antibody-based antibody-drug conjugates with improved therapeutic window of the drug due to covalent linkage of (a cluster of) potentiator molecules, e.g. a payload such as a protein toxin or oligonucleotide to the ADC, or alternatively, due to co-administration of an ADC and a cell-targeting conjugate comprising (a cluster of) potentiator molecules to a patient in need thereof. The invention also relates to a method for producing a scaffold suitable for covalently binding a biologically active molecule to a carrier molecule, providing a cluster of potentiator molecules. Furthermore, the invention relates to a method for producing a scaffold covalently bound to a carrier molecule, the scaffold comprising a covalently bound biologically active molecule, the carrier molecule comprising an antibody and a payload.