

**Claims**

1. A protein comprising at least one polypeptide chain having the formula  
5 PP<sub>1</sub>-PCL-PP<sub>2</sub>,  
wherein  
PP<sub>1</sub> is a first polypeptide,  
PP<sub>2</sub> is a second polypeptide, and  
PCL is a protease-cleavable linker comprising at least one protease-cleavage site comprising the  
10 amino acid sequence HRRX<sub>1</sub>X<sub>2</sub>RSVDE (SEQ ID NO: 42), wherein X<sub>1</sub> and X<sub>2</sub> are independently  
selected from the group consisting of amino acids, preferably naturally occurring amino acids.
2. The protein of claim 1, wherein the at least one protease-cleavage site comprises the  
15 amino acid sequence HRRRKRSVDE (SEQ ID NO: 43) or the amino acid sequence  
HRRQQRSVDE (SEQ ID NO: 44).
3. The protein of claim 1 or 2, wherein protease-cleavage of the linker results in a change in  
activity of the protein, wherein, preferably, the change in activity is binding or increased binding  
20 to at least one antigen.
4. The protein of any one of claims 1 to 3, wherein the protease-cleavable linker comprises  
two protease-cleavage sites, wherein the two protease-cleavage sites are located at the N-  
terminus and at the C-terminus of the protease-cleavable linker, respectively, wherein the two  
protease-cleavage sites may be the same or different.  
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5. The protein of any one of claims 1 to 4, wherein PP<sub>1</sub> comprises at least one  
immunoglobulin constant region and/or at least one immunoglobulin variable region, and/or  
wherein PP<sub>2</sub> comprises at least one immunoglobulin constant region and/or at least one  
immunoglobulin variable region, wherein, preferably,  
30 PP<sub>1</sub> comprises an immunoglobulin constant region and PP<sub>2</sub> comprises an immunoglobulin  
variable region,  
PP<sub>1</sub> comprises an immunoglobulin variable region and PP<sub>2</sub> comprises an immunoglobulin  
constant region,  
PP<sub>1</sub> comprises an immunoglobulin constant region and PP<sub>2</sub> comprises an immunoglobulin  
35 constant region, or  
PP<sub>1</sub> comprises an immunoglobulin variable region and PP<sub>2</sub> comprises an immunoglobulin variable  
region.

6. The protein of any one of claims 1 to 5, wherein the protein is an antibody or antibody derivative, wherein, preferably, the protein is a single chain antibody, preferably a multispecific single chain antibody.
- 5 7. The protein of any one of claims 1 to 6, comprising a polypeptide chain having a formula selected from the group consisting of:
- (a) VL-CL-PCL-VH-CH1-hinge-CH2-CH3,  
wherein
- 10 VL is an immunoglobulin light chain variable region;  
CL is an immunoglobulin light chain constant region;  
VH is an immunoglobulin heavy chain variable region;  
CH1 is an immunoglobulin CH1 heavy chain constant region;  
hinge is an immunoglobulin hinge region;
- 15 CH2 is an immunoglobulin CH2 heavy chain constant region;  
CH3 is an immunoglobulin CH3 heavy chain constant region; and  
PCL is the protease-cleavable linker;
- (b) VL<sub>a</sub>-CL<sub>a</sub>-PCL-VL<sub>b</sub>-CL<sub>b</sub>,  
wherein
- 20 VL<sub>a</sub> is a first immunoglobulin light chain variable region;  
VL<sub>b</sub> is a second immunoglobulin light chain variable region;  
CL<sub>a</sub> is a first immunoglobulin light chain constant region;  
CL<sub>b</sub> is a second immunoglobulin light chain constant region; and
- 25 PCL is the protease-cleavable linker; and
- (c) VL<sub>a</sub>-CL<sub>a</sub>-PCL-VL<sub>b</sub>-CL<sub>b</sub>-L-hinge-CH2-CH3  
wherein
- 30 VL<sub>a</sub> is a first immunoglobulin light chain variable region;  
VL<sub>b</sub> is a second immunoglobulin light chain variable region;  
CL<sub>a</sub> is a first immunoglobulin light chain constant region;  
CL<sub>b</sub> is a second immunoglobulin light chain constant region;  
L is an optional linker;  
hinge is an immunoglobulin hinge region;
- 35 CH2 is an immunoglobulin CH2 heavy chain constant region;  
CH3 is an immunoglobulin CH3 heavy chain constant region; and  
PCL is the protease-cleavable linker.

8. A nucleic acid or set of nucleic acids encoding the protein of any one of claims 1 to 7.
9. A vector or set of vectors comprising the nucleic acid or set of nucleic acids of claim 8.
- 5 10. A host cell comprising a protein of any one of claims 1 to 7, a nucleic acid or set of nucleic acids of claim 8, or a vector or set of vectors of claim 9, wherein, preferably, the host cell is a mammalian cell.
11. Method of producing a protein comprising the steps:
- 10 i) culturing a host cell according to claim 10; and
- ii) isolating the protein from the host cell.
12. A protein obtainable by the method of claim 11.
- 15 13. A protein obtainable by furin and/or furin-like protease-cleavage of a protein of any one of claims 1 to 7.
14. The protein of any one of claims 1 to 7, 12 or 13, wherein the protein is a therapeutically active protein.
- 20 15. The protein of claim 14 for use in therapy.