WHAT IS CLAIMED IS:

1. A hinge antibody capable of being selectively activated in a target cell or tissue to treat a condition therein, comprising:

a functional antibody capable of treating the condition in an activated state, comprising two pairs of light chains and heavy chains;

two inhibitory domains, wherein each inhibitory domain consists of two peptide arms interconnected by two disulfide bonds, and each of the two inhibitory domains comprises a hinge domain of immunoglobulin A (IgA), immunoglobulin D (IgD) or immunoglobulin G (IgG), or a fragment of the hinge domain; and

four cleavable linkers, wherein each cleavable linker comprises a peptide substrate cleavable by an enzyme that is specifically or highly expressed in the target cell or tissue;

wherein the four cleavable linkers connect the four peptide arms of the two inhibitory domains and four N-terminals of the two pairs of light chains and heavy chains of the functional antibody to block antigen binding sites of the two pairs of the light chains and heavy chains of the functional antibody until the functional antibody is selectively activated by cleavage of the cleavable linkers.

2. The hinge antibody of claim 1, wherein the functional antibody is selected from the group consisting of, anti-TNF-α antibody, anti-RANKL antibody, anti-CTLA-4 antibody, anti-HER2 antibody, anti-EGFR antibody, anti-VEGF antibody, anti-VEGFR2) antibody, anti-IL6R antibody, anti-IL12/23 antibody, anti-CD3 antibody, anti-CD11a antibody, anti-CD20 antibody, anti-CD25 antibody, anti-CD30 antibody, anti-CD33 antibody and anti-CD52 antibody.

3. The hinge antibody of claim 1, wherein the light chain of the functional antibody has any of the amino acid sequences of SEQ ID Nos. 1, 2, 3, 4, 5, 6, 7, 8 or 9, and the heavy chain of the functional antibody has any of the amino acid sequences of SEQ ID Nos. 58, 59, 60, 61, 62, 63, 64, 65 and 66.

4. The hinge antibody of claim 1, wherein the hinge domain is a hinge domain of the IgA, and the IgA is IgA1 or IgA2.

5. The hinge antibody of claim 1, wherein the hinge domain is a hinge domain of the IgG, and the IgG is IgG1, IgG2, IgG3 or IgG4.

6. The hinge antibody of claim 1, wherein each of the inhibitory domains comprises any of the amino acid sequences of SEQ ID Nos. 10, 11, 12, 13, 14, 15, 54 or 55.

7. The hinge antibody of claim 1, wherein the peptide substrate is cleavable by any of the following enzyme: a matrix metalloproteinase (MMP), a cathepsin (CTS), a caspase (CASP), or a disintegrin and metalloproteinase (ADAM).

8. The hinge antibody of claim 7, wherein the enzyme is MMP-2 or MMP-9 and each cleavable linker comprises the amino acid sequence of SEQ ID No. 16.

9. The hinge antibody of claim 1, wherein,

the functional antibody is an anti-TNF-α antibody, wherein the light chain thereof comprises the amino acid sequence of SEQ ID No. 1, and the heavy chain thereof comprises the amino acid sequence of SEQ ID No. 58;

each of the cleavable linkers comprises the amino acid sequence of SEQ ID No. 16; and

each of the inhibitory domains comprises the amino acid sequence of SEQ ID No. 10.