Claims

What is claimed is:

1. A binding protein comprising an antigen binding domain capable of binding human sclerostin, the antigen binding domain comprising at least one CDR comprising an amino acid consensus sequence.

2. The binding protein of claim 1, wherein the at least one CDR comprises an amino acid sequence selected from the group consisting of residues 31-35 of SEQ ID NO: 3; residues 50-66 of SEQ ID NO: 3; residues 99-108 of SEQ ID NO:3; residues 23-34 of SEQ ID NO: 4; residues 51-57 of SEQ ID NO: 4; residues 90-101 of SEQ ID NO:4; residues 31-35 of SEQ ID NO: 5; residues 50-66 of SEQ ID NO: 5; residues 99-115 of SEQ ID NO:5; residues 23-33 of SEQ ID NO: 6; residues 49-55 of SEQ ID NO: 6; residues 88-96 of SEQ ID NO:6; residues 31-35 of SEQ ID NO: 7; residues 50-66 of SEQ ID NO: 7; residues 99-107 of SEQ ID NO:7; residues 23-33 of SEQ ID NO: 8; residues 49-55 of SEQ ID NO: 8; residues 88-95 of SEQ ID NO:8; residues 31-35 of SEQ ID NO: 9; residues 50-66 of SEQ ID NO: 9; residues 99-107 of SEQ ID NO:9; residues 24-39 of SEQ ID NO: 10; residues 55-61 of SEQ ID NO: 10; residues 94-112 of SEQ ID NO:10; residues 31-35 of SEQ ID NO: 11; residues 50-66 of SEQ ID NO: 11; residues 99-111 of SEQ ID NO: 11; residues 24-39 of SEQ ID NO: 12; residues 55-61 of SEQ ID NO: 12; residues 94-113 of SEQ ID NO:12; residues 31-37 of SEQ ID NO: 13; residues 52-69 of SEQ ID NO: 13; residues 102-122 of SEQ ID NO:13; residues 24-34 of SEQ ID NO: 14; residues 50-56 of SEQ ID NO: 14; residues 89-97 of SEQ ID NO:14; Residues 31 - 35 of SEQ ID NO:1998; Residues 50 - 66 of SEQ ID NO:1998; Residues 99 - 110 of SEQ ID NO:1998; Residues 31 - 35 of SEQ ID NO.:1999; Residues 50-66 of SEQ ID NO.:1999; Residues 99 - 110 of SEQ ID NO.:1999; Residues 31 - 35 of SEQ ID NO.:2000; Residues 50 - 66 of SEQ ID NO.:2000; Residues 99 - 110 of SEQ ID NO.:2000; Residues 31 - 35 of SEQ ID NO.:2001; Residues 50 - 66 of SEQ ID NO.:2001; Residues 99 - 110 of SEQ ID NO.:2001; Residues 31 - 35 of SEQ ID NO.:2002; Residues 50 - 66 of SEQ ID NO.:2002; Residues 99 - 110 of SEQ ID NO.:2002; Residues 31 - 35 of SEQ ID NO.:2003; Residues 50 - 66 of SEQ ID NO.:2003; Residues 99 - 110 of SEQ ID NO.:2003; Residues 31 - 35 of SEQ ID NO.:2004; Residues 50 - 66 of SEQ ID NO.:2004; Residues 99 - 110 of SEQ ID NO.:2004; Residues 31 - 35 of SEQ ID NO.:2005; Residues 50 - 66 of SEQ ID NO.:2005; Residues 99 - 110 of SEQ ID NO.:2005; Residues 31 - 35 of SEQ ID NO.:2006; Residues 50 - 66 of SEQ ID NO.:2006; Residues 99 - 110 of SEQ ID NO.:2006; Residues 31 - 35 of SEQ ID

NO.:2007; Residues 50 - 66 of SEQ ID NO.:2007; Residues 99 - 110 of SEQ ID NO.:2007; Residues 23 - 36 of SEQ ID NO.:2008; Residues 52 – 58 of SEQ ID NO.:2008; Residues 101 – 109 of SEQ ID NO.:2008; Residues 23 - 36 of SEQ ID NO.:2009; Residues 52 – 58 of SEQ ID NO.:2009; Residues 101 – 109 of SEQ ID NO.:2009; Residues 23 - 36 of SEQ ID NO.:2008; Residues 52 – 58 of SEQ ID NO.:2010; Residues 101 – 109 of SEQ ID NO.:2010; Residues 23 - 36 of SEQ ID NO.:2011; Residues 52 – 58 of SEQ ID NO.:2011; Residues 101 – 109 of SEQ ID NO.:2011; Residues 23 - 36 of SEQ ID NO.:2012; Residues 52 – 58 of SEQ ID NO.:2012; Residues 101 – 109 of SEQ ID NO.:2012; Residues 23 - 36 of SEQ ID NO.:2013; Residues 52 – 58 of SEQ ID NO.:2013; Residues 101 – 109 of SEQ ID NO.:2013; Residues 23 - 36 of SEQ ID NO.:2014; Residues 52 – 58 of SEQ ID NO.:2014; Residues 101 – 109 of SEQ ID NO.:2014; Residues 23 - 36 of SEQ ID NO.:2015; Residues 52 – 58 of SEQ ID NO.:2015; Residues 101 – 109 of SEQ ID NO.:2015; Residues 23 - 36 of SEQ ID NO.:2016; Residues 52 – 58 of SEQ ID NO.:2016; Residues 101 – 109 of SEQ ID NO.:2016; Residues 23 - 36 of SEQ ID NO.:2017; Residues 52 – 58 of SEQ ID NO.:2017; Residues 101 – 109 of SEQ ID NO.:2017; Residues 31 - 35 of SEQ ID NO:2020; Residues 50 - 66 of SEQ ID NO:2020; Residues 99 - 108 of SEQ ID NO:2020; Residues 31 - 35 of SEQ ID NO:2021; Residues 50 - 66 of SEQ ID NO:2021; Residues 99 - 108 of SEQ ID NO:2021; Residues 31 - 35 of SEQ ID NO:2022; Residues 50 - 66 of SEQ ID NO:2022; Residues 99 - 108 of SEQ ID NO:2022; Residues 31 - 35 of SEQ ID NO:2023; Residues 50 - 66 of SEQ ID NO:2023; Residues 99 - 108 of SEQ ID NO:2023; Residues 31 - 35 of SEQ ID NO:2024; Residues 50 - 66 of SEQ ID NO:2024; Residues 99 - 108 of SEQ ID NO:2024; Residues 31 - 35 of SEQ ID NO:2025; Residues 50 - 66 of SEQ ID NO:2025; Residues 99 - 108 of SEQ ID NO:2025; Residues 31 - 35 of SEQ ID NO:2026; Residues 50 - 66 of SEQ ID NO:2026; Residues 99 - 108 of SEQ ID NO:2026; Residues 31 - 35 of SEQ ID NO:2027; Residues 50 - 66 of SEQ ID NO:2027; Residues 99 - 108 of SEQ ID NO:2027; Residues 31 - 35 of SEQ ID NO:2028; Residues 50 - 66 of SEQ ID NO:2028; Residues 99 - 108 of SEQ ID NO:2028; Residues 31 - 35 of SEQ ID NO:2029; Residues 50 - 66 of SEQ ID NO:2029; Residues 99 - 108 of SEQ ID NO:2029; Residues 31 - 35 of SEQ ID NO:2030; Residues 50 - 66 of SEQ ID NO:2030; Residues 99 - 108 of SEQ ID NO:2030; Residues 31 - 35 of SEQ ID NO:2031; Residues 50 - 66 of SEQ ID NO:2031; Residues 99 - 108 of SEQ ID NO:2031; Residues 31 - 35 of SEQ ID NO:2032; Residues 50 - 66 of SEQ ID NO:2032; Residues 99 - 108 of SEQ ID NO:2032; Residues 31 - 35 of SEQ ID NO:2033; Residues 50 - 66 of SEQ ID NO:2033; Residues 99 - 108 of SEQ ID NO:2033;

Residues 31 - 35 of SEQ ID NO:2034; Residues 50 - 66 of SEQ ID NO:2034; Residues 99 - 110 of SEQ ID NO:2034; Residues 31 - 35 of SEQ ID NO.:2035; Residues 51-57 of SEQ ID NO.:2035; Residues 90-101 of SEQ ID NO.:2035; Residues 31 - 35 of SEQ ID NO.:2036; Residues 51-57 of SEQ ID NO.:2036; Residues 90-101 of SEQ ID NO.:2036; Residues 31 - 35 of SEQ ID NO.:2037; Residues 51-57 of SEQ ID NO.:2035; Residues 90-101 of SEQ ID NO.:2037; Residues 31 - 35 of SEQ ID NO.:2038; Residues 51-57 of SEQ ID NO.:2038; Residues 90-101 of SEQ ID NO.:2038; Residues 31 - 35 of SEQ ID NO.:2039; Residues 51-57 of SEQ ID NO.:2039; Residues 90-101 of SEQ ID NO.:2039; Residues 31 - 35 of SEQ ID NO.:2040; Residues 51-57 of SEQ ID NO.:2040; Residues 90-101 of SEQ ID NO.:2040; Residues 31 - 35 of SEQ ID NO.:2041; Residues 51-57 of SEQ ID NO.:2041; Residues 90-101 of SEQ ID NO.:2041; Residues 31 - 35 of SEQ ID NO.:2042; Residues 51-57 of SEQ ID NO.:2042; Residues 90-101 of SEQ ID NO.:2042; Residues 31 - 35 of SEQ ID NO.:2043; Residues 51-57 of SEQ ID NO.:2043; Residues 90-101 of SEQ ID NO.:2043; Residues 31 - 35 of SEQ ID NO.:2044; Residues 51-57 of SEQ ID NO.:2044; Residues 90-101 of SEQ ID NO.:2044; Residues 31 - 35 of SEQ ID NO.:2045; Residues 51-57 of SEQ ID NO.:2045; Residues 90-101 of SEQ ID NO.:2045; Residues 31 - 35 of SEQ ID NO.:2046; Residues 51-57 of SEQ ID NO.:2046; Residues 90-101 of SEQ ID NO.:2046; Residues 31 - 35 of SEQ ID NO.:2047; Residues 51-57 of SEQ ID NO.:2047; Residues 90-101 of SEQ ID NO.:2047; Residues 31 - 35 of SEQ ID NO.:2048; Residues 51-57 of SEQ ID NO.:2048; Residues 90-101 of SEQ ID NO.:2048; Residues 31 - 35 of SEQ ID NO.:2049; Residues 51-57 of SEQ ID NO.:2049; and Residues 90-101 of SEQ ID NO.:2049.

3. The binding protein of claim 2, wherein the binding protein comprises at least 3 CDRs.

4. The binding protein of claim 3, wherein the at least 3 CDRs comprise a variable domain CDR set selected from the group consisting of:

VH MSL10 CDR Set	
VH MSL10 CDR-H1	Residues 31-35 of SEQ ID NO: 3
VH MSL10 CDR-H2	Residues 50-66 of SEQ ID NO: 3
VH MSL10 CDR-H3	Residues 99-108 of SEQ ID NO: 3
VL MSL10 CDR Set	
VL MSL10 CDR-L1	Residues 23-34 of SEQ ID NO: 4
VL MSL10 CDR-L2	Residues 51-57 of SEQ ID NO: 4
VL MSL10 CDR-L3	Residues 90-101 of SEQ ID NO: 4

VH MSL10 AM1 CDR Set	
VH MSL10 AM1 CDR-H1	Residues 31-35 of SEQ ID NO: 2020
VH MSL10 AM1 CDR-H2	Residues 50-66 of SEQ ID NO: 2020
VH MSL10 AM1 CDR-H3	Residues 99-108 of SEQ ID NO:2020
VL MSL10 AM1 CDR Set	
VL MSL10 AM1 CDR-L1	Residues 23-34 of SEQ ID NO:2035
VL MSL10 AM1 CDR-L2	Residues 51-57 of SEQ ID NO:2035
VL MSL10 AM1 CDR-L3	Residues 90-101 of SEQ ID NO:2035
VH MSL10 AM2 CDR Set	
VH MSL10 AM2 CDR-H1	Residues 31-35 of SEQ ID NO: 2021
VH MSL10 AM2 CDR-H2	Residues 50-66 of SEQ ID NO: 2021
VH MSL10 AM2 CDR-H3	Residues 99-108 of SEQ ID NO:2021
VL MSL10 AM2 CDR Set	
VL MSL10 AM2 CDR-L1	Residues 23-34 of SEQ ID NO:2036
VL MSL10 AM2 CDR-L2	Residues 51-57 of SEQ ID NO:2036
VL MSL10 AM2 CDR-L3	Residues 90-101 of SEQ ID NO:2036
VH MSL10 AM3 CDR Set	
VH MSL10 AM3 CDR-H1	Residues 31-35 of SEQ ID NO: 2022
VH MSL10 AM3 CDR-H2	Residues 50-66 of SEQ ID NO: 2022
VH MSL10 AM3 CDR-H3	Residues 99-108 of SEQ ID NO:2022
VL MSL10 AM3 CDR Set	
VL MSL10 AM3 CDR-L1	Residues 23-34 of SEQ ID NO:2037
VL MSL10 AM3 CDR-L2	Residues 51-57 of SEQ ID NO:2037
VL MSL10 AM3 CDR-L3	Residues 90-101 of SEQ ID NO:2037
VH MSL10 AM4 CDR Set	
VH MSL10 AM4 CDR-H1	Residues 31-35 of SEQ ID NO: 2023
VH MSL10 AM4 CDR-H2	Residues 50-66 of SEQ ID NO: 2023
VH MSL10 AM4 CDR-H3	Residues 99-108 of SEQ ID NO:2023
VL MSL10 AM4 CDR Set	
VL MSL10 AM4 CDR-L1	Residues 23-34 of SEQ ID NO:2038
VL MSL10 AM4 CDR-L2	Residues 51-57 of SEQ ID NO:2038
VL MSL10 AM4 CDR-L3	Residues 90-101 of SEQ ID NO:2038
VH MSL10 AM5 CDR Set	
VH MSL10 AM5 CDR-H1	Residues 31-35 of SEQ ID NO: 2024

VH MSL10 AM5 CDR-H2	Residues 50-66 of SEQ ID NO: 2024
VH MSL10 AM5 CDR-H3	Residues 99-108 of SEQ ID NO:2024
VL MSL10 AM5 CDR Set	
VL MSL10 AM5 CDR-L1	Residues 23-34 of SEQ ID NO:2039
VL MSL10 AM5 CDR-L2	Residues 51-57 of SEQ ID NO:2039
VL MSL10 AM5 CDR-L3	Residues 90-101 of SEQ ID NO:2039
VH MSL10 AM6 CDR Set	
VH MSL10 AM6 CDR-H1	Residues 31-35 of SEQ ID NO: 2025
VH MSL10 AM6 CDR-H2	Residues 50-66 of SEQ ID NO: 2025
VH MSL10 AM6 CDR-H3	Residues 99-108 of SEQ ID NO:2025
VL MSL10 AM6 CDR Set	
VL MSL10 AM6 CDR-L1	Residues 23-34 of SEQ ID NO:2040
VL MSL10 AM6 CDR-L2	Residues 51-57 of SEQ ID NO:2040
VL MSL10 AM6 CDR-L3	Residues 90-101 of SEQ ID NO:2040
VH MSL10 AM7 CDR Set	
VH MSL10 AM7 CDR-H1	Residues 31-35 of SEQ ID NO: 2026
VH MSL10 AM7 CDR-H2	Residues 50-66 of SEQ ID NO: 2026
VH MSL10 AM7 CDR-H3	Residues 99-108 of SEQ ID NO:2026
VL MSL10 AM7 CDR Set	
VL MSL10 AM7 CDR-L1	Residues 23-34 of SEQ ID NO:2041
VL MSL10 AM7 CDR-L2	Residues 51-57 of SEQ ID NO:2041
VL MSL10 AM7 CDR-L3	Residues 90-101 of SEQ ID NO:2041
VH MSL10 AM8 CDR Set	
VH MSL10 AM8 CDR-H1	Residues 31-35 of SEQ ID NO: 2027
VH MSL10 AM8 CDR-H2	Residues 50-66 of SEQ ID NO: 2027
VH MSL10 AM8 CDR-H3	Residues 99-108 of SEQ ID NO:2027
VL MSL10 AM8 CDR Set	
VL MSL10 AM8 CDR-L1	Residues 23-34 of SEQ ID NO:2042
VL MSL10 AM8 CDR-L2	Residues 51-57 of SEQ ID NO:2042
VL MSL10 AM8 CDR-L3	Residues 90-101 of SEQ ID NO:2042
VH MSL10 AM9 CDR Set	
VH MSL10 AM9 CDR-H1	Residues 31-35 of SEQ ID NO: 2028
VH MSL10 AM9 CDR-H2	Residues 50-66 of SEQ ID NO: 2028
VH MSL10 AM9 CDR-H3	Residues 99-108 of SEQ ID NO:2028
VL MSL10 AM9 CDR Set	

VL MSL10 AM9 CDR-L1	Residues 23-34 of SEQ ID NO:2043
VL MSL10 AM9 CDR-L2	Residues 51-57 of SEQ ID NO:2043
VL MSL10 AM9 CDR-L3	Residues 90-101 of SEQ ID NO:2043
VH MSL10 AM10 CDR Set	
VH MSL10 AM10 CDR-H1	Residues 31-35 of SEQ ID NO: 2029
VH MSL10 AM10 CDR-H2	Residues 50-66 of SEQ ID NO: 2029
VH MSL10 AM10 CDR-H3	Residues 99-108 of SEQ ID NO:2029
VL MSL10 AM10 CDR Set	
VL MSL10 AM10 CDR-L1	Residues 23-34 of SEQ ID NO:2044
VL MSL10 AM10 CDR-L2	Residues 51-57 of SEQ ID NO:2044
VL MSL10 AM10 CDR-L3	Residues 90-101 of SEQ ID NO:2044
VH MSL10 AM10 CDR Set	
VH MSL10 AM11 CDR-H1	Residues 31-35 of SEQ ID NO: 2030
VH MSL10 AM11 CDR-H2	Residues 50-66 of SEQ ID NO: 2030
VH MSL10 AM11 CDR-H3	Residues 99-108 of SEQ ID NO:2030
VL MSL10 AM10 CDR Set	
VL MSL10 AM11 CDR-L1	Residues 23-34 of SEQ ID NO:2045
VL MSL10 AM11 CDR-L2	Residues 51-57 of SEQ ID NO:2045
VL MSL10 AM11 CDR-L3	Residues 90-101 of SEQ ID NO:2045
VH MSL10 AM1.2 CDR Set	
VH MSL10 AM1.2 CDR-H1	Residues 31-35 of SEQ ID NO: 2031
VH MSL10 AM1.2 CDR-H2	Residues 50-66 of SEQ ID NO: 2031
VH MSL10 AM1.2 CDR-H3	Residues 99-108 of SEQ ID NO:2031
VL MSL10 AM1.2 CDR Set	
VL MSL10 AM1.2 CDR-L1	Residues 23-34 of SEQ ID NO:2046
VL MSL10 AM1.2 CDR-L2	Residues 51-57 of SEQ ID NO:2046
VL MSL10 AM1.2 CDR-L3	Residues 90-101 of SEQ ID NO:2046
VH MSL10 AM2.2 CDR Set	
VH MSL10 AM2.2 CDR-H1	Residues 31-35 of SEQ ID NO: 2032
VH MSL10 AM2.2 CDR-H2	Residues 50-66 of SEQ ID NO: 2032
VH MSL10 AM2.2 CDR-H3	Residues 99-108 of SEQ ID NO:2032
VL MSL10 AM2.2 CDR Set	
VL MSL10 AM2.2 CDR-L1	Residues 23-34 of SEQ ID NO:2047
VL MSL10 AM2.2 CDR-L2	Residues 51-57 of SEQ ID NO:2047
VL MSL10 AM2.2 CDR-L3	Residues 90-101 of SEQ ID NO:2047

VH MSL10 AM3.2 CDR Set	
VH MSL10 AM3.2 CDR-H1	Residues 31-35 of SEQ ID NO: 2033
VH MSL10 AM3.2 CDR-H2	Residues 50-66 of SEQ ID NO: 2033
VH MSL10 AM3.2 CDR-H3	Residues 99-108 of SEQ ID NO:2033
VL MSL10 AM3.2 CDR Set	
VL MSL10 AM3.2 CDR-L1	Residues 23-34 of SEQ ID NO:2048
VL MSL10 AM3.2 CDR-L2	Residues 51-57 of SEQ ID NO:2048
VL MSL10 AM3.2 CDR-L3	Residues 90-101 of SEQ ID NO:2048
VH MSL10 AM4.2 CDR Set	
VH MSL10 AM4.2 CDR-H1	Residues 31-35 of SEQ ID NO: 2034
VH MSL10 AM4.2 CDR-H2	Residues 50-66 of SEQ ID NO: 2034
VH MSL10 AM4.2 CDR-H3	Residues 99-108 of SEQ ID NO:2034
VL MSL10 AM4.2 CDR Set	
VL MSL10 AM4.2 CDR-L1	Residues 23-34 of SEQ ID NO:2049
VL MSL10 AM4.2 CDR-L2	Residues 51-57 of SEQ ID NO:2049
VL MSL10 AM4.2 CDR-L3	Residues 90-101 of SEQ ID NO:2049
VH MSL17 CDR Set	
VH MSL17 CDR-H1	Residues 31-35 of SEQ ID NO:5
VH MSL17 CDR-H2	Residues 50-66 of SEQ ID NO:5
VH MSL17 CDR-H3	Residues 99-115 of SEQ ID NO:5
VL MSL17 CDR Set	
VL MSL17 CDR-L1	Residues 23-33 of SEQ ID NO:6
VL MSL17 CDR-L2	Residues 49-55 of SEQ ID NO:6
VL MSL17 CDR-L3	Residues 88-96 of SEQ ID NO:6
VH MSL9-8 CDR Set	
VH MSL9-8 CDR-H1	Residues 31-35 of SEQ ID NO:7
VH MSL9-8 CDR-H2	Residues 50-66 of SEQ ID NO:7
VH MSL9-8 CDR-H3	Residues 99-107 of SEQ ID NO:7
VL MSL9-8 CDR Set	
VL MSL9-8 CDR-L1	Residues 23-33 of SEQ ID NO:8
VL MSL9-8 CDR-L2	Residues 49-55 of SEQ ID NO:8
VL MSL9-8 CDR-L3	Residues 88-95 of SEQ ID NO:8
VH MSK9 CDR Set	
VH MSK9 CDR-H1	Residues 31-35 of SEQ ID NO:9
VH MSK9 CDR-H2	Residues 50-66 of SEQ ID NO:9
VH MSK9 CDR-H3	Residues 99-107 of SEQ ID NO:9
VL MSK9 CDR Set	
VL MSK9 CDR-L1	Residues 24-39 of SEQ ID NO:10
VL MSK9 CDR-L2	Residues 55-61 of SEQ ID NO:10
VL MSK9 CDR-L3	Residues 94-112 of SEQ ID NO:10
VH MSK13 CDR Set	

VH MSK13 CDR-H1	Residues 31-35 of SEQ ID NO:11
VH MSK13 CDR-H2	Residues 50-66 of SEQ ID NO:11
VH MSK13 CDR-H3	Residues 99-111 of SEQ ID NO:11
VL MSK13 CDR Set	
VL MSK13 CDR-L1	Residues 24-39 of SEQ ID NO:12
VL MSK13 CDR-L2	Residues 55-61 of SEQ ID NO:12
VL MSK13 CDR-L3	Residues 94-113 of SEQ ID NO:12
VH MSK21 CDR Set	
VH MSK21 CDR-H1	Residues 31-37 of SEQ ID NO:13
VH MSK21 CDR-H2	Residues 52-69 of SEQ ID NO:13
VH MSK21 CDR-H3	Residues 102-122 of SEQ ID NO:13
VL MSK21 CDR Set	
VL MSK21 CDR-L1	Residues 24-34 of SEQ ID NO:14
VL MSK21 CDR-L2	Residues 50-56 of SEQ ID NO:14
VL MSK21 CDR-L3	Residues 89-97 of SEQ ID NO:14

VH AE10-6 AM1 CDR Set	
VH AE10-6 AM1 CDR-H1	Residues 31-37 of SEQ ID NO:1998
VH AE10-6 AM1 CDR-H2	Residues 52-69 of SEQ ID NO:1998
VH AE10-6 AM1 CDR-H3	Residue 102-122 of SEQ ID NO:1998
VL AE10-6 AM1 Set	
VL AE10-6 AM1 CDR-L1	Residues 24-34 of SEQ ID NO:2008
VL AE10-6 AM1 CDR-L2	Residues 50-56 of SEQ ID NO:2008
VL AE10-6 AM1 CDR-L3	Residues 89-97 of SEQ ID NO:2008

VH AE10-6 AM2 CDR Set	
VH AE10-6 AM2 CDR-H1	Residues 31-37 of SEQ ID NO:1999
VH AE10-6 AM2 CDR-H2	Residues 52-69 of SEQ ID NO:1999
VH AE10-6 AM2 CDR-H3	Residue 102-122 of SEQ ID NO:1999
VL AE10-6 AM2 Set	
VL AE10-6 AM2 CDR-L1	Residues 24-34 of SEQ ID NO:2009
VL AE10-6 AM2 CDR-L2	Residues 50-56 of SEQ ID NO:2009
VL AE10-6 AM2 CDR-L3	Residues 89-97 of SEQ ID NO:2009

VH AE10-6 AM3 CDR Set	
VH AE10-6 AM3 CDR-H1	Residues 31-37 of SEQ ID NO:2000
VH AE10-6 AM3 CDR-H2	Residues 52-69 of SEQ ID NO:2000
VH AE10-6 AM3 CDR-H3	Residue 102-122 of SEQ ID NO:2000
VL AE10-6 AM3 Set	
VL AE10-6 AM3 CDR-L1	Residues 24-34 of SEQ ID NO:2010
VL AE10-6 AM3 CDR-L2	Residues 50-56 of SEQ ID NO:2010
VL AE10-6 AM3 CDR-L3	Residues 89-97 of SEQ ID NO:2010

VH AE10-6 AM4 CDR Set	
VH AE10-6 AM4 CDR-H1	Residues 31-37 of SEQ ID NO:2001
VH AE10-6 AM4 CDR-H2	Residues 52-69 of SEQ ID NO:2001
VH AE10-6 AM4 CDR-H3	Residue 102-122 of SEQ ID NO:2001
VL AE10-6 AM4 Set	
VL AE10-6 AM4 CDR-L1	Residues 24-34 of SEQ ID NO:2011
VL AE10-6 AM4 CDR-L2	Residues 50-56 of SEQ ID NO:2011
VL AE10-6 AM4 CDR-L3	Residues 89-97 of SEQ ID NO:2011

VH AE10-6 AM5 CDR Set

VH AE10-6 AM5 CDR-H1	Residues 31-37 of SEQ ID NO:2002

VH AE10-6 AM5 CDR-H2	Residues 52-69 of SEQ ID NO:2002
VH AE10-6 AM5 CDR-H3	Residue 102-122 of SEQ ID NO:2002
VL AE10-6 AM5 Set	
VL AE10-6 AM5 CDR-L1	Residues 24-34 of SEQ ID NO:2012
VL AE10-6 AM5 CDR-L2	Residues 50-56 of SEQ ID NO:2012
VL AE10-6 AM5 CDR-L3	Residues 89-97 of SEQ ID NO:2012
VH AE10-6 AM6 CDR Set	
VH AE10-6 AM6 CDR-H1	Residues 31-37 of SEQ ID NO:2003
VH AE10-6 AM6 CDR-H2	Residues 52-69 of SEQ ID NO:2003
VH AE10-6 AM6 CDR-H3	Residue 102-122 of SEQ ID NO:2003
VL AE10-6 AM6 Set	
VL AE10-6 AM6 CDR-L1	Residues 24-34 of SEQ ID NO:2013
VL AE10-6 AM6 CDR-L2	Residues 50-56 of SEQ ID NO:2013
VL AE10-6 AM6 CDR-L3	Residues 89-97 of SEQ ID NO:2013
VH AE10-6 AM7 CDR Set	
VH AE10-6 AM7 CDR-H1	Residues 31-37 of SEQ ID NO:2004
VH AE10-6 AM7 CDR-H2	Residues 52-69 of SEQ ID NO:2004
VH AE10-6 AM7 CDR-H3	Residue 102-122 of SEQ ID NO:2004
VL AE10-6 AM7 Set	
VL AE10-6 AM7 CDR-L1	Residues 24-34 of SEQ ID NO:2014
VL AE10-6 AM7 CDR-L2	Residues 50-56 of SEQ ID NO:2014
VL AE10-6 AM7 CDR-L3	Residues 89-97 of SEQ ID NO:2014
VH AE10-6 AM8 CDR Set	
VH AE10-6 AM8 CDR-H1	Residues 31-37 of SEQ ID NO:2005
VH AE10-6 AM8 CDR-H2	Residues 52-69 of SEQ ID NO:2005
VH AE10-6 AM8 CDR-H3	Residue 102-122 of SEQ ID NO:2005
VL AE10-6 AM8 Set	
VL AE10-6 AM8 CDR-L1	Residues 24-34 of SEQ ID NO:2015
VL AE10-6 AM8 CDR-L2	Residues 50-56 of SEQ ID NO:2015
VL AE10-6 AM8 CDR-L3	Residues 89-97 of SEQ ID NO:2015
VH AE10-6 AM9 CDR Set	
VH AE10-6 AM9 CDR-H1	Residues 31-37 of SEQ ID NO:2006
VH AE10-6 AM9 CDR-H2	Residues 52-69 of SEQ ID NO:2006
VH AE10-6 AM9 CDR-H3	Residue 102-122 of SEQ ID NO:2006
VL AE10-6 AM9 Set	
VL AE10-6 AM9 CDR-L1	Residues 24-34 of SEQ ID NO:2016
VL AE10-6 AM9 CDR-L2	Residues 50-56 of SEQ ID NO:2016
VL AE10-6 AM9 CDR-L3	Residues 89-97 of SEQ ID NO:2016
VH AE10-6 AM10 CDR Set	
VH AE10-6 AM10 CDR-H1	Residues 31-37 of SEQ ID NO:2007
VH AE10-6 AM10 CDR-H2	Residues 52-69 of SEQ ID NO:2007
VH AE10-6 AM10 CDR-H3	Residue 102-122 of SEQ ID NO:2007
VL AE10-6 AM10 Set	
VL AE10-6 AM10 CDR-L1	Residues 24-34 of SEQ ID NO:2017
VL AE10-6 AM10 CDR-L2	Residues 50-56 of SEQ ID NO:2017
VL AE10-6 AM10 CDR-L3	Residues 89-97 of SEQ ID NO:2017

5. The binding protein of claim 4, comprising at least two variable domain CDR sets.

6. The binding protein of claim 5, wherein the at least two variable domain CDR sets are selected from the group consisting of VH MSL10 CDR Set and VL MSL10 CDR Set; VH MSL17 CDR Set and VL MSL17 CDR Set; VH MSL9-8 CDR Set and VL MSL9-8 CDR Set; VH MSK9 CDR Set and VL MSK9 CDR Set; VH MSK13 CDR Set and VL MSK13 CDR Set; VH MSK21 CDR Set and VL MSK21 CDR Set; VH AE10-6 AM1 CDR Set and VL AE10-6 AM1 CDR Set; VH AE10-6 AM2 CDR Set and VL AE10-6 AM2 CDR Set; VH AE10-6 AM3 CDR Set and VL AE10-6 AM3 CDR Set; VH AE10-6 AM4 CDR Set and VL AE10-6 AM4 CDR Set; VH AE10-6 AM5 CDR Set and VL AE10-6 AM5 CDR Set; VH AE10-6 AM6 CDR Set and VL AE10-6 AM6 CDR Set; VH AE10-6 AM7 CDR Set and VL AE10-6 AM7 CDR Set; VH AE10-6 AM8 CDR Set and VL AE10-6 AM8CDR Set; VH AE10-6 AM9CDR Set and VL AE10-6 AM9CDR Set; VH AE10-6 AM10CDR Set and VL AE10-6 AM10 CDR Set; VH MSL10 AM1 CDR Set and VL MSL10 AM1 CDR Set; VH MSL10 AM2 CDR Set and VL MSL10 AM2 CDR Set; VH MSL10 AM3 CDR Set and VL MSL10 AM3 CDR Set; VH MSL10 AM4 CDR Set and VL MSL10 AM4 CDR Set; VH MSL10 AM5 CDR Set and VL MSL10 AM5 CDR Set; VH MSL10 AM6 CDR Set and VL MSL10 AM6 CDR Set; VH MSL10 AM7 CDR Set and VL MSL10 AM7 CDR Set; VH MSL10 AM8 CDR Set and VL MSL10 AM8 CDR Set; VH MSL10 AM9 CDR Set and VL MSL10 AM9 CDR Set; VH MSL10 AM10 CDR Set and VL MSL10 AM10 CDR Set; VH MSL10 AM1.2 CDR Set and VL MSL10 AM1.2 CDR Set; VH MSL10 AM2.2 CDR Set and VL MSL10 AM2.2 CDR Set; VH MSL10 AM3.2 CDR Set and VL MSL10 AM3.2 CDR Set; and VH MSL10 AM4.2 CDR Set and VL MSL10 AM4.2 CDR Set.

7. The binding protein of claim 1, wherein the binding protein comprises at least one variable domain having an amino acid sequence selected from the group consisting of SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14; SEQ ID NOs 1719-1866; SEQ ID NOs1867-1997; SEQ ID NOs 1998-2007; SEQ ID NOs 2008-2017; SEQ ID NOs 2020-2034; and SEQ ID NOs 2035-2049.

8. The binding protein of claim 1, wherein the binding protein comprises two variable domains, wherein the first variable domain comprises a sequence selected from the group consisting of SEQ ID NOs 3, 5, 7, 9, 11, 13, 1719-1866, 1998-2007, 2018, and 2020-2034 and wherein the second variable domain comprises a sequence selected from

the group consisting of SEQ ID NOs 4, 6, 8, 10, 12, 1867-1997, 2007-2017, 2019, and 2035-2049.

9. The binding protein of claim 1, wherein the binding protein:
(a) is capable of modulating a biological function of sclerostin;
(b) is capable of neutralizing sclerostin;
(c) wherein the sclerostin is pro-human sclerostin; mature-human sclerostin, or truncated-human sclerostin;
(d) wherein the binding protein diminishes the ability of sclerostin to bind to its receptor; and/or
(e) wherein the neutralizing binding protein is capable of reducing one or more of Th1 modulation; Th2 modulation; Nk modulation; neutrophil modulation; monocyte-macrophage lineage modulation; neutrophil modulation; eosinophil modulation; B-cells modulation; cytokine modulation; chemokine modulation; adhesion molecule modulation; and cell recruitment modulation.

10. The binding protein of claim 1, wherein the binding protein has an on rate constant (K_{on}) to sclerostin of at least about $10^2 M^{-1}s^{-1}$; at least about $10^3 M^{-1}s^{-1}$; at least about $10^4 M^{-1}s^{-1}$; at least about $10^5 M^{-1}s^{-1}$; or at least about $10^6 M^{-1}s^{-1}$; as measured by surface plasmon resonance.

11. The binding protein of claim 1, wherein the binding protein has an off rate constant (K_{off}) to sclerostin of at most about $10^{-3}s^{-1}$; at most about $10^{-4}s^{-1}$; at most about $10^{-5}s^{-1}$; or at most about $10^{-6}s^{-1}$, as measured by surface plasmon resonance.

12. The binding protein of claim 1, wherein the binding protein has a dissociation constant (K_D) to sclerostin of at most about 10^{-7} M; at most about 10^{-8} M; at most about 10^{-9} M; at most about 10^{-10} M; at most about 10^{-11} M; at most about 10^{-12} M; and at most 10^{-13} M.

13. An isolated nucleic acid encoding the binding protein amino acid sequence of claim 1.

14. A vector comprising the isolated nucleic acid of claim 13.

15. A host cell comprising the vector of claim 15.

16. A method of producing a protein capable of binding sclerostin, comprising culturing the host cell of claim 16 in culture medium under conditions sufficient to produce a binding protein capable of binding sclerostin.

17. A protein produced by the method of claim 16.

18. Use of an effective amount of the protein of claim 17, in the manufacture of a medicament for treating a mammal.

19. A pharmaceutical composition comprising the binding protein of claim 1, and a pharmaceutically acceptable carrier.

20. The pharmaceutical composition of claim 19, further comprising at least one additional therapeutic agent for treating a disorder in which sclerostin activity is detrimental.

21. The pharmaceutical composition of claim 20, wherein the additional agent is selected from the group consisting of a therapeutic agent, imaging agent, cytotoxic agent, angiogenesis inhibitors; kinase inhibitors; co-stimulation molecule blockers; adhesion molecule blockers; anti-cytokine antibody or functional fragment thereof; methotrexate; cyclosporin; rapamycin; FK506; detectable label or reporter; a TNF antagonist; an anti-rheumatic; a muscle relaxant, a narcotic, a non-steroid anti-inflammatory drug (NSAID), an analgesic, an anesthetic, a sedative, a local anesthetic, a neuromuscular blocker, an antimicrobial, an antipsoriatic, a corticosteroid, an anabolic steroid, an erythropoietin, an immunization, an immunoglobulin, an immunosuppressive, a growth hormone, a hormone replacement drug, a radiopharmaceutical, an antidepressant, an antipsychotic, a stimulant, an asthma medication, a beta agonist, an inhaled steroid, an oral steroid, an epinephrine or analog, a cytokine, and a cytokine antagonist.

Use of the binding protein of claim 1 , in the manufacture of a medicament for reducing human sclerostin activity.

23. Use of the binding protein of claim 1, in the manufacture of a medicament for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental.

24. Use of the binding protein of claim 1, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental.

25. The use of claim 24, wherein the disorder is selected from the group consisting of a respiratory disorder; asthma; allergic and nonallergic asthma; asthma due to infection; asthma due to infection with respiratory syncytial virus (RSV); chronic obstructive pulmonary disease (COPD); a condition involving airway inflammation; eosinophilia; fibrosis and /or excess mucus production; cystic fibrosis; pulmonary fibrosis; an atopic disorder; atopic dermatitis; urticaria; eczema; allergic rhinitis; allergic enterogastritis; an inflammatory and/or autoimmune condition of the skin; an inflammatory and/or autoimmune condition of gastrointestinal organs; inflammatory bowel disease (IBD); ulcerative colitis; Crohn's disease; an inflammatory and/or autoimmune condition of the liver; liver cirrhosis; liver fibrosis; liver fibrosis caused by hepatitis B and/or C virus; scleroderma; a tumors; a cancer; hepatocellular carcinoma; glioblastoma; lymphoma; Hodgkin's lymphoma; a viral infection; HTLV-1 infection (e.g., from HTLV-1); a suppression of expression of protective type 1 immune response, and a suppression of expression of protective type 1 immune responses during vaccination.

26. Use of the binding protein of claim 1 in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an

aminosalicylate; 6-mercaptopurine; azathioprine; metronidazole; a lipoxygenase inhibitor; mesalamine; olsalazine; balsalazide; an antioxidant; a thromboxane inhibitor; an IL-1 receptor antagonist; an anti-IL-1β antibody; an anti-IL-6 antibody; a growth factor; an elastase inhibitor; a pyridinyl-imidazole compound; an antibody or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; an antibody of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; a phosphodiesterase inhibitor; an adenosine agonist; an antithrombotic agent; a complement inhibitor; an adrenergic agent; IRAK, NIK, IKK, p38, or a MAP kinase inhibitor; an IL-1β converting enzyme inhibitor; a TNF-α converting enzyme inhibitor; a T-cell signaling inhibitor; a metalloproteinase inhibitor; a 6-mercaptopurine; an angiotensin converting enzyme inhibitor; a soluble cytokine receptor; a soluble p55 TNF receptor; a soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; an anti-inflammatory cytokine; IL-4; IL-10; IL-11; SOST; and TGF-β.

27. A binding protein comprising a polypeptide chain, wherein the polypeptide chain comprises VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first heavy chain variable domain;

VD2 is a second heavy chain variable domain;

C is a heavy chain constant domain;

X1 is a linker with the proviso that it is not CH1;

X2 is an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein

(a) VD1 or VD2 comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174,

1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, and the binding protein is capable of binding sclerostin and another target;

(b) VD1 and VD2 independently comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684,, and the binding protein is capable of binding sclerostin and sclerostin;

(c) VD1 comprises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684,, and VD2 comprises three CDRs seleced from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952,

962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132, 1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682 and the binding protein is capable of binding sclerostin and TNF-α; or

(d) VD2 comprises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684,, and VD1 comprises three CDRs selected from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952, 962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132, 1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682 and the binding protein is capable of binding TNF-α and sclerostin.

28. The binding protein of claim 27, wherein VD1-(X1)n-VD2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 21, 31, 41, 51, 61, 71, 81,

91, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191, 201, 211, 221, 231, 241, 251, 261, 271, 281, 291, 301, 311, 321, 331, 341, 351, 361, 371, 381, 391, 401, 411, 421, 431, 441, 451, 461, 471, 481, 491, 501, 511, 521, 531, 541, 551, 561, 571, 581, 591, 601, 611, 621, 631, 641, 651, 661, 671, 681, 691, 701, 711, 721, 731, 741, 751, 761, 771, 781, 791, 801, 811, 821, 831, 841, 851, 861, 871, 881, 891, 901, 911, 921, 931, 941, 951, 961, 971, 981, 991, 1001, 1011, 1021, 1031, 1041, 1051, 1061, 1071, 1081, 1091, 1101, 1111, 1121, 1131, 1141, 1151, 1161, 1171, 1181, 1191, 1201, 1211, 1221, 1231, 1241, 1251, 1261, 1271, 1281, 1291, 1301, 1311, 1321, 1331, 1341, 1351, 1361, 1371, 1381, 1391, 1401, 1411, 1421, 1431, 1441, 1451, 1461, 1471, 1481, 1491, 1501, 1511, 1521, 1531, 1541, 1551, 1561, 1571, 1581, 1591, 1601, 1611, 1621, 1631, 1641, 1651, 1661, 1671, and 1681.

29. A binding protein comprising a polypeptide chain, wherein the polypeptide chain comprises VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first light chain variable domain;

VD2 is a second light chain variable domain;

C is a light chain constant domain;

X1 is a linker with the proviso that it is not CL;

X2 does not comprise an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein

(a) VD1 or VD2 comprise three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and another target;

(b) VD1 and VD2 independently comprise three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and sclerostin;

(c) VD1 comprises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and VD2 comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, and 637, and the binding protein is capable of binding sclerostin and TNF-α; or

(d) VD2 comprises three CDRs selected from the group consisting ofSEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709,

719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and VD1 comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, 637, 647, 657, 667, 677, 687, 697, 707, 717, 727, 737, 747, 757, 767, 777, 787, 797, 807, 817, 827, 837, 847, 857, 867, 877, 887, 897, 907, 917, 927, 937, 947, 957, 967, 977, 987, 997, 1007, 1017, 1027, 1037, 1047, 1057, 1067, 1077, 1087, 1097, 1107, 1117, 1127, 1137, 1147, 1157, 1167, 1177, 1187, 1197, 1207, 1217, 1227, 1237, 1247, 1257, 1267, 1277, 1287, 1297, 1307, 1317, 1327, 1337, 1347, 1357, 1367, 1377, 1387, 1397, 1407, 1417, 1427, 1437, 1447, 1457, 1467, 1477, 1487, 1497, 1507, 1517, 1527, 1537, 1547, 1557, 1567, 1577, 1587, 1597, 1607, 1617, 1627, 1637, 1647, 1657, 1667, 1677, and 1687, and the binding protein is capable of binding TNF-α and sclerostin.

30. The binding protein of claim 29, wherein the VD1-(X1)n-VD2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 26, 36, 46, 56, 66, 76, 86, 96, 106, 116, 126, 136, 146, 156, 166, 176, 186, 196, 206, 216, 226, 236, 246, 256, 266, 276, 286, 296, 306, 316, 326, 336, 346, 356, 366, 376, 386, 396, 406, 416, 426, 436, 446, 456, 466, 476, 486, 496, 506, 516, 526, 536, 546, 556, 566, 576, 586, 596, 606, 616, 626, 636, 646, 656, 666, 676, 686, 696, 706, 716, 726, 736, 746, 756, 766, 776, 786, 796, 806, 816, 826, 836, 846, 856, 866, 876, 886, 896, 906, 916, 926, 936, 946, 956, 966, 976, 986, 996, 1006, 1116, 1126, 1136, 1146, 1156, 1166, 1176, 1186, 1196, 1206, 1216, 1226, 1236, 1246, 1256, 1266, 1276, 1286, 1296, 1306, 1316, 1326, 1336, 1346, 1356, 1366, 1376, 1386, 1396, 1406, 1416, 1426, 1436, 1446, 1456, 1466, 1476, 1486, 1496, 1506, 1516, 1526, 1536, 1546, 1556, 1566, 1576, 1586, 1596, 1606, 1616, 1626, 1636, 1646, 1656, 1666, 1676, and 1686.

31. The binding protein of claim 28 or 29, wherein (X1)n is (X1)0 and/or (X2)n is (X2)0.

32. A binding protein comprising first and second polypeptide chains, wherein the first polypeptide chain comprises a first VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first heavy chain variable domain;

VD2 is a second heavy chain variable domain;

C is a heavy chain constant domain;

X1 is a first linker;

X2 is an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein the second polypeptide chain comprises a second VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first light chain variable domain;

VD2 is a second light chain variable domain;

C is a light chain constant domain;

X1 is a second linker;

X2 does not comprise an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein the first and second X1 linker are the same or different;

wherein the first X1 linker is not CH1 and/or the second X1 linker is not CL and

wherein

(a) the VD1 or VD2 heavy chain variable domain comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, the VD1 or VD2 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139,

149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and another target;

(b) the VD1 and VD2 heavy chain variable domains independently comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, the VD1 or VD2 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659,

1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and sclerostin;

(c) the VD1 heavy chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, and the VD2 heavy chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952, 962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132, 1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682; the VD1 light chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319,

1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the VD2 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, 637, 647, 657, 667, 677, 687, 697, 707, 717, 727, 737, 747, 757, 767, 777, 787, 797, 807, 817, 827, 837, 847, 857, 867, 877, 887, 897, 907, 917, 927, 937, 947, 957, 967, 977, 987, 997, 1007, 1017, 1027, 1037, 1047, 1057, 1067, 1077, 1087, 1097, 1107, 1117, 1127, 1137, 1147, 1157, 1167, 1177, 1187, 1197, 1207, 1217, 1227, 1237, 1247, 1257, 1267, 1277, 1287, 1297, 1307, 1317, 1327, 1337, 1347, 1357, 1367, 1377, 1387, 1397, 1407, 1417, 1427, 1437, 1447, 1457, 1467, 1477, 1487, 1497, 1507, 1517, 1527, 1537, 1547, 1557, 1567, 1577, 1587, 1597, 1607, 1617, 1627, 1637, 1647, 1657, 1667, 1677, and 1687,, and the binding protein is capable of binding sclerostin and TNF-α; or

(d) the VD2 heavy chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, and the VD1 heavy chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952, 962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132,

1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682; the VD2 light chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the VD1 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, 637, 647, 657, 667, 677, 687, 697, 707, 717, 727, 737, 747, 757, 767, 777, 787, 797, 807, 817, 827, 837, 847, 857, 867, 877, 887, 897, 907, 917, 927, 937, 947, 957, 967, 977, 987, 997, 1007, 1017, 1027, 1037, 1047, 1057, 1067, 1077, 1087, 1097, 1107, 1117, 1127, 1137, 1147, 1157, 1167, 1177, 1187, 1197, 1207, 1217, 1227, 1237, 1247, 1257, 1267, 1277, 1287, 1297, 1307, 1317, 1327, 1337, 1347, 1357, 1367, 1377, 1387, 1397, 1407, 1417, 1427, 1437, 1447, 1457, 1467, 1477, 1487, 1497, 1507, 1517, 1527, 1537, 1547, 1557, 1567, 1577, 1587, 1597, 1607, 1617, 1627, 1637, 1647, 1657, 1667, 1677, and 1687,, and the binding protein is capable of binding TNF-α and sclerostin .

33. The binding protein of claim 28, 29 or 32, wherein X1 or X2 is an amino acid sequence selected from the group consisting of SEQ ID NO: 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, and 2059.

34. The binding protein of claim 33, wherein the binding protein comprises two first polypeptide chains and two second polypeptide chains.

35. The binding protein of claim 28, 29 or 32, wherein the Fc region is a variant sequence Fc region.

36. The binding protein of claim 28, 29 or 32, wherein the Fc region is selected from the group consisting of an IgG1, IgG2, IgG3, IgG4, IgA, IgM, IgE, and IgD.

37. The binding protein of claim 28, 29 or 32, wherein the VD1 of the first polypeptide chain and the VD1 of the second polypeptide chain are obtained from the same first and second parent antibody, respectively, or antigen binding portion thereof.

38. The binding protein of any one of claims 28, 29 or 32, wherein the anti-TNF-α antibody binds TNF-α with a potency different from the potency with which the anti-sclerostin antibody binds human sclerostin.

39. The binding protein of any one of claims 28, 29 or 32, wherein the anti-TNF-α antibody binds TNF-α with an affinity different from the affinity with which the anti-sclerostin antibody binds human sclerostin.

40. The binding protein of claim 28, 29 or 32, wherein the binding protein possesses at least one desired property exhibited by the anti-TNF-α antibody or the anti-sclerostin antibody related to antigen specificity, affinity to antigen, potency, biological function, epitope recognition, stability, solubility, production efficiency, immunogenicity, pharmacokinetics, bioavailability, tissue cross reactivity, or orthologous antigen binding.

41. A binding protein capable of binding two antigens comprising four polypeptide chains, wherein two polypeptide chains comprise VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first heavy chain variable domain;
VD2 is a second heavy chain variable domain;
C is a heavy chain constant domain;
X1 is a first linker;
X2 is an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein two polypeptide chains comprise VD1-(X1)n-VD2-C-(X2)n, wherein

VD1 is a first light chain variable domain;

VD2 is a second light chain variable domain;

C is a light chain constant domain;

X1 is a second linker;

X2 does not comprise an Fc region;

(X1)n is (X1)0 or (X1)1;

(X2)n is (X2)0 or (X2)1; and

wherein the first and second X1 linker are the same or different;

wherein the first X1 linker is not CH1 and/or the second X1 linker is not CL and

wherein

(a) the VD1 or VD2 heavy chain variable domain comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, the VD1 or VD2 light chain variable domain comprises three CDRs selected from the group consting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549,

1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and another target;

(b) the VD1 and VD2 heavy chain variable domains independently comprise three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, the VD1 or VD2 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the binding protein is capable of binding sclerostin and sclerostin;

(c) the VD1 heavy chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134,

1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, and the VD2 heavy chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952, 962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132, 1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682; the VD1 light chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the VD2 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, 637, 647, 657, 667, 677, 687, 697, 707, 717, 727, 737, 747, 757, 767, 777, 787, 797, 807, 817, 827, 837, 847, 857, 867, 877, 887, 897, 907, 917, 927, 937, 947, 957, 967, 977, 987, 997, 1007, 1017, 1027, 1037,

1047, 1057, 1067, 1077, 1087, 1097, 1107, 1117, 1127, 1137, 1147, 1157, 1167, 1177, 1187, 1197, 1207, 1217, 1227, 1237, 1247, 1257, 1267, 1277, 1287, 1297, 1307, 1317, 1327, 1337, 1347, 1357, 1367, 1377, 1387, 1397, 1407, 1417, 1427, 1437, 1447, 1457, 1467, 1477, 1487, 1497, 1507, 1517, 1527, 1537, 1547, 1557, 1567, 1577, 1587, 1597, 1607, 1617, 1627, 1637, 1647, 1657, 1667, 1677, and 1687,, and the binding protein is capable of binding sclerostin and TNF-α; or

(d) the VD2 heavy chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 24, 34, 44, 54, 64, 74, 84, 94, 104, 114, 124, 134, 144, 154, 164, 174, 184, 194, 204, 214, 224, 234, 244, 254, 264, 274, 284, 294, 304, 314, 324, 334, 344, 354, 364, 374, 384, 394, 404, 414, 424, 434, 444, 454, 464, 474, 484, 494, 504, 514, 524, 534, 544, 554, 564, 574, 584, 594, 604, 614, 624, 634, 644, 654, 664, 674, 684, 694, 704, 714, 724, 734, 744, 754, 764, 774, 784, 794, 804, 814, 824, 834, 844, 854, 864, 874, 884, 894, 904, 914, 924, 934, 944, 954, 964, 974, 984, 994, 1004, 1014, 1024, 1034, 1044, 1054, 1064, 1074, 1084, 1094, 1114, 1124, 1134, 1144, 1154, 1164, 1174, 1184, 1194, 1204, 1214, 1224, 1234, 1244, 1254, 1264, 1274, 1284, 1294, 1304, 1314, 1324, 1334, 1344, 1354, 1364, 1374, 1384, 1394, 1404, 1414, 1424, 1434, 1444, 1454, 1464, 1474, 1484, 1494, 1504, 1514, 1524, 1534, 1544, 1554, 1564, 1574, 1584, 1594, 1604, 1614, 1624, 1634, 1644, 1654, 1664, 1674, and 1684, and the VD1 heavy chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 22, 32, 42, 52, 62, 72, 82, 92, 102, 112, 122, 132, 142, 152, 162, 172, 182, 192, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292, 302, 312, 322, 332, 342, 352, 362, 372, 382, 392, 402, 412, 422, 432, 442, 452, 462, 472, 482, 492, 502, 512, 522, 532, 542, 552, 562, 572, 582, 592, 602, 612, 622, 632, 642, 652, 662, 672, 682, 692, 702, 712, 722, 732, 742, 752, 762, 772, 782, 792, 802, 812, 822, 832, 842, 852, 862, 872, 882, 892, 902, 912, 922, 932, 942, 952, 962, 972, 982, 992, 1002, 1012, 1022, 1032, 1042, 1052, 1062, 1072, 1082, 1092, 1102, 1112, 1122, 1132, 1142, 1152, 1162, 1172, 1182, 1192, 1202, 1212, 1222, 1232, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1242, 1252, 1262, 1272, 1282, 1292, 1302, 1312, 1322, 1332, 1342, 1352, 1362, 1372, 1382, 1392, 1402, 1412, 1422, 1432, 1442, 1452, 1462, 1472, 1482, 1492, 1502, 1512, 1522, 1532, 1542, 1552, 1562, 1572, 1582, 1592, 1602, 1612, 1622, 1632, 1642, 1652, 1662, 1672, and 1682; the VD2 light chain variable domain comrpises three CDRs selected from the group consisting of SEQ ID NO: 29, 39, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729,

739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909,919, 929, 939, 949, 959, 969, 979, 989, 999, 1009, 1019, 1029, 1039, 1049, 1059, 1069, 1079, 1089, 1099, 1109, 1119, 1129, 1139, 1149, 1159, 1169, 1179, 1189, 1199, 1209, 1219, 1229, 1239, 1249, 1259, 1269, 1279, 1289, 1299, 1309, 1319, 1329, 1339, 1349, 1359, 1369, 1379, 1389, 1399, 1409, 1419, 1429, 1439, 1449, 1459, 1469, 1479. 1489, 1499, 1509, 1519, 1529, 1539, 1549, 1559, 1569, 1579, 1589, 1599, 1609, 1619, 1629, 1639, 1649, 1659, 1669, 1679, and 1689, and the VD1 light chain variable domain comprises three CDRs selected from the group consisting of SEQ ID NO: 27, 37, 47, 57, 67, 77, 87, 97, 107, 117, 127, 137, 147, 157, 167, 177, 187, 197, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297, 307, 317, 327, 337, 347, 357, 367, 377, 387, 397, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497, 507, 517, 527, 537, 547, 557, 567, 577, 587, 597, 607, 617, 627, 637, 647, 657, 667, 677, 687, 697, 707, 717, 727, 737, 747, 757, 767, 777, 787, 797, 807, 817, 827, 837, 847, 857, 867, 877, 887, 897, 907, 917, 927, 937, 947, 957, 967, 977, 987, 997, 1007, 1017, 1027, 1037, 1047, 1057, 1067, 1077, 1087, 1097, 1107, 1117, 1127, 1137, 1147, 1157, 1167, 1177, 1187, 1197, 1207, 1217, 1227, 1237, 1247, 1257, 1267, 1277, 1287, 1297, 1307, 1317, 1327, 1337, 1347, 1357, 1367, 1377, 1387, 1397, 1407, 1417, 1427, 1437, 1447, 1457, 1467, 1477, 1487, 1497, 1507, 1517, 1527, 1537, 1547, 1557, 1567, 1577, 1587, 1597, 1607, 1617, 1627, 1637, 1647, 1657, 1667, 1677, and 1687,, and the binding protein is capable of binding TNF-α and sclerostin.

42. The binding protein of claim 27, 29, 32, or 41 wherein the binding protein has an on rate constant (Kon) to the one or more targets of at least about $10^2M^{-1}s^{-1}$; at least about $10^3M^{-1}s^{-1}$; at least about $10^4M^{-1}s^{-1}$; at least about $10^5M^{-1}s^{-1}$; or at least about $10^6M^{-1}s^{-1}$, as measured by surface plasmon resonance.

43. The binding protein of claim 27, 29, 32, or 41 wherein the binding protein has an off rate constant (Koff) to the one or more targets of at most about $10^{-3}s^{-1}$; at most about $10^{-4}s^{-1}$; at most about $10^{-5}s^{-1}$; or at most about $10^{-6}s^{-1}$, as measured by surface plasmon resonance.

44. The binding protein of claim 27, 29, 32, or 41 wherein the binding protein has a dissociation constant (K_D) to the one or more targets of at most about 10^{-7} M; at most about 10^{-8} M; at most about 10^{-9} M; at most about 10^{-10} M; at most about 10^{-11} M; at most about 10^{-12} M; or at most 10^{-13} M.

45. A binding protein construct comprising a binding protein sequence of claim 27, 29, 32, or 41 further comprising a linker polypeptide and/or an immunoglobulin constant domain.

46. The binding protein construct of claim 45, wherein the binding protein is an immunoglobulin molecule, a disulfide linked Fv, a monoclonal antibody, a scFv, a chimeric antibody, a single domain antibody, a CDR-grafted antibody, a diabody, a humanized antibody, a multispecific antibody, a Fab, a dual specific antibody, a Fab', a bispecific antibody, a F(ab')2, a Fv, or a DVD-binding protein.

47. The binding protein construct of claim 46, wherein the binding protein comprises a human IgM constant domain, a human IgG4 constant domain, a human IgG1 constant domain, a human IgE constant domain, a human IgG2 constant domain, a human IgG3 constant domain, or a human IgA constant domain.

48. The binding protein construct of claim 46, comprising an immunoglobulin constant domain having an amino acid sequence selected from the group consisting of SEQ ID NO: 1691, SEQ ID NO: 1692, SEQ ID NO: 1693, and SEQ ID NO: 1694.

49. A binding protein conjugate comprising a binding protein construct of claim 27, 29, 32, or 41, the binding protein conjugate further comprising an immunoadhesion molecule, an imaging agent, a therapeutic agent, or a cytotoxic agent.

50. An isolated nucleic acid encoding a binding protein amino acid sequence of claim 27, 29, 32, or 41.

51. An isolated nucleic acid encoding a sclerostin binding protein construct amino acid sequence of claim 50.

52. A vector comprising the isolated nucleic acid of claim 51.

53. A host cell comprising the vector of claim 52.

54. A method of producing a protein capable of binding sclerostin, comprising culturing the host cell of claim 53 in culture medium under conditions sufficient to produce a binding protein capable of binding sclerostin.

55. A protein produced by the method of claim 54.

56. A pharmaceutical composition comprising the binding protein of claim 27, 29, 32, or 41, and a pharmaceutically acceptable carrier.

57. Use of an effective amount of the composition of claim 56, in the manufacture of a medicament for treating a mammal.

58. The pharmaceutical composition of claim 56, further comprising at least one additional therapeutic agent for treating a disorder in which sclerostin activity is detrimental.

59. The pharmaceutical composition of claim 58, wherein the additional agent is selected from the group consisting of a therapeutic agent, imaging agent, cytotoxic agent, angiogenesis inhibitors; kinase inhibitors; co-stimulation molecule blockers; adhesion molecule blockers; anti-cytokine antibody or functional fragment thereof; methotrexate; cyclosporin; rapamycin; FK506; detectable label or reporter; a TNF antagonist; an anti-rheumatic; a muscle relaxant, a narcotic, a non-steroid anti-inflammatory drug (NSAID), an analgesic, an anesthetic, a sedative, a local anesthetic, a neuromuscular blocker, an antimicrobial, an antipsoriatic, a corticosteroid, an anabolic steroid, an erythropoietin, an immunization, an immunoglobulin, an immunosuppressive, a growth hormone, a hormone replacement drug, a radiopharmaceutical, an antidepressant, an antipsychotic, a stimulant, an asthma medication, a beta agonist, an inhaled steroid, an oral steroid, an epinephrine or analog, a cytokine, and a cytokine antagonist.

Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for reducing human sclerostin activity.

61. Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for reducing human sclerostin activity.

62. Use of the binding protein of claim 27, 29, 32, or 41, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental.

63. The method of claim 62, wherein the disorder is selected from the group consisting of a respiratory disorder; asthma; allergic and nonallergic asthma; asthma due to infection; asthma due to infection with respiratory syncytial virus (RSV); chronic obstructive pulmonary disease (COPD); a condition involving airway inflammation; eosinophilia; fibrosis and /or excess mucus production; cystic fibrosis; pulmonary fibrosis; an atopic disorder; atopic dermatitis; urticaria; eczema; allergic rhinitis; allergic enterogastritis; an inflammatory and/or autoimmune condition of the skin; an inflammatory and/or autoimmune condition of gastrointestinal organs; inflammatory bowel disease (IBD); ulcerative colitis; Crohn's disease; an inflammatory and/or autoimmune condition of the liver; liver cirrhosis; liver fibrosis; liver fibrosis caused by hepatitis B and/or C virus; scleroderma; a tumors; a cancer; hepatocellular carcinoma; glioblastoma; lymphoma; Hodgkin's lymphoma; a viral infection; HTLV-1 infection (e.g., from HTLV-1); a suppression of expression of protective type 1 immune response, and a suppression of expression of protective type 1 immune responses during vaccination.

64. Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an aminosalicylate; 6-mercaptopurine; azathioprine;

metronidazole; a lipoxygenase inhibitor; mesalamine; olsalazine; balsalazide; an antioxidant; a thromboxane inhibitor; an IL-1 receptor antagonist; an anti-IL-1β antibody; an anti-IL-6 antibody; a growth factor; an elastase inhibitor; a pyridinyl-imidazole compound; an antibody or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; an antibody of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; a phosphodiesterase inhibitor; an adenosine agonist; an antithrombotic agent; a complement inhibitor; an adrenergic agent; IRAK, NIK, IKK, p38, or a MAP kinase inhibitor; an IL-1β converting enzyme inhibitor; a TNF-α converting enzyme inhibitor; a T-cell signaling inhibitor; a metalloproteinase inhibitor; a 6-mercaptopurine; an angiotensin converting enzyme inhibitor; a soluble cytokine receptor; a soluble p55 TNF receptor; a soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; an anti-inflammatory cytokine; IL-4; IL-10; IL-11; SOST; and TGF-β.

65. A method for generating a DVD-binding protein comprising the steps of

a) obtaining a first parent antibody or antigen binding portion thereof, capable of binding TNF-α;

b) obtaining a second parent antibody or antigen binding portion thereof, capable of binding human sclerostin;

c) constructing polypeptide chains comprising the VD1-(X1)n-VD2-C-(X2)n of any one of claims 27, 29, 32, or 41;

e) expressing the polypeptide chains;

such that a DVD-binding protein is generated.

Claims

What is claimed is:

1. A binding protein comprising an antigen binding domain capable of binding human sclerostin, the antigen binding domain comprising three CDRs in a heavy chain and three CDRs in a light chain,

wherein the heavy chain comprises a CDR-H1, a CDR-H2 and a CDR-H3;
wherein the CDR-H1 comprises the amino acid sequence of X_1-L-S-X_2-H (residues 31-35 of SEQ ID NO: 1);
wherein X_1 is E or G; and
wherein X_2 is M, V or L;
wherein the CDR-H2 comprises the amino acid sequence of G-X_3-X_4-P-E-X_5-G-E-X_6-I-Y-A-Q-K-F-Q-G (residues 50-66 of SEQ ID NO: 1);
wherein X_3 is F or S;
wherein X_4 is D or N;
wherein X_5 is D, E, V, Y, N, G, A, R, Q, H, F or I; and
wherein X_6 is T, I, L, M or N;
and
the CDR-H3 comprises the amino acid sequence of X_7-X_8-X_9-X_{10}-X_{11}-W-X_{12}-X_{13}-X_{14}-F-Q-H (residues 99-110 of SEQ ID NO: 1);
wherein X_7 is D or E;
wherein X_8 is S, T or A;
wherein X_9 is E, D, V, A, L, Y, W, Q, N, M or G;
wherein X_{10} is G or S;
wherein X_{11} is Y, F, R, N, V, S, P or I;
wherein X_{12} is E, Y, F or V;
wherein X_{13} is K, Q or I; and
wherein X_{14} is Y or F,
and
wherein the light chain comprises a CDR-L1, a CDR-L2 and a CDR-L3
wherein the CDR-L1 comprises an amino acid sequence of G-S-S-T-G-X_{15}-V-T- X_{16}- X_{17}-H-Y- X_{18}-Y (residues 23-36 of SEQ ID NO: 2),
wherein $X_{15}$is A, D, P, G, S, N, E, T or H;
wherein X_{16} is S, I, V, T, G or M;
wherein X_{17} is G, E, D, W, Y or N; and
wherein X_{18} is P or T;
wherein the CDR-L2 comprises the amino acid sequence of D-T- X_{19}-X_{20}-K- X_{21}-S (residues 52-58 of SEQ ID NO: 2),
wherein X_{19} is N, D, I, R, V or T;
wherein X_{20} is D or E; and
wherein X_{21} is H, Q, N or D;
and
wherein the CDR-L3 comprises the amino acid sequence of L-L- X_{22}- X_{23}- X_{24}- X_{25}- X_{26}- X_{27}-V (residues 91-99 of SEQ ID NO: 2);
wherein X_{22} is F or D;
wherein X_{23} is Y, D, F or N;

wherein X_{24} is G or R;
wherein X_{25} is G or S;
wherein X_{26} is T, S, N or R; and
wherein X_{27} is V, L, M or F.

2. The binding protein of claim 1, wherein the at least one CDR comprises an amino acid sequence selected from the group consisting of residues 31 - 35 of SEQ ID NO:1998; Residues 50 - 66 of SEQ ID NO:1998; Residues 99 - 110 of SEQ ID NO:1998; Residues 31 - 35 of SEQ ID NO:1999; Residues 50-66 of SEQ ID NO:1999; Residues 99 - 110 of SEQ ID NO:1999; Residues 31 - 35 of SEQ ID NO:2000; Residues 50 - 66 of SEQ ID NO:2000; Residues 99 - 110 of SEQ ID NO:2000; Residues 31 - 35 of SEQ ID NO:2001; Residues 50 - 66 of SEQ ID NO:2001; Residues 99 - 110 of SEQ ID NO:2001; Residues 31 - 35 of SEQ ID NO:2002; Residues 50 - 66 of SEQ ID NO:2002; Residues 99 - 110 of SEQ ID NO:2002; Residues 31 - 35 of SEQ ID NO:2003; Residues 50 - 66 of SEQ ID NO:2003; Residues 99 - 110 of SEQ ID NO:2003; Residues 31 - 35 of SEQ ID NO:2004; Residues 50 - 66 of SEQ ID NO:2004; Residues 99 - 110 of SEQ ID NO:2004; Residues 31 - 35 of SEQ ID NO:2005; Residues 50 - 66 of SEQ ID NO:2005; Residues 99 - 110 of SEQ ID NO:2005; Residues 31 - 35 of SEQ ID NO:2006; Residues 50 - 66 of SEQ ID NO:2006; Residues 99 - 110 of SEQ ID NO:2006; Residues 31 - 35 of SEQ ID NO:2007; Residues 50 - 66 of SEQ ID NO:2007; Residues 99 - 110 of SEQ ID NO:2007; Residues 23 - 36 of SEQ ID NO:2008; Residues 52 – 58 of SEQ ID NO:2008; Residues 91-99 of SEQ ID NO:2008; Residues 23 - 36 of SEQ ID NO:2009; Residues 52 – 58 of SEQ ID NO:2009; Residues 91-99 of SEQ ID NO:2009; Residues 23 - 36 of SEQ ID NO. 2010; Residues 52 – 58 of SEQ ID NO:2010; Residues 91-99 of SEQ ID NO:2010; Residues 23 - 36 of SEQ ID NO:2011; Residues 52 – 58 of SEQ ID NO:2011; Residues 91-99 of SEQ ID NO:2011; Residues 23 - 36 of SEQ ID NO:2012; Residues 52 – 58 of SEQ ID NO:2012; Residues 91-99 of SEQ ID NO:2012; Residues 23 - 36 of SEQ ID NO:2013; Residues 52 – 58 of SEQ ID NO:2013; Residues 91-99 of SEQ ID NO:2013; Residues 23 - 36 of SEQ ID NO:2014; Residues 52 – 58 of SEQ ID NO:2014; Residues 91-99 of SEQ ID NO:2014; Residues 23 - 36 of SEQ ID NO:2015; Residues 52 – 58 of SEQ ID NO:2015; Residues 91-99 of SEQ ID NO:2015; Residues 23 - 36 of SEQ ID NO:2016; Residues 52 – 58 of SEQ ID NO:2016; Residues 91-99 of SEQ ID NO:2016; Residues 23 - 36 of SEQ ID NO:2017; Residues 52 – 58 of SEQ ID NO:2017; Residues 91-99 of SEQ ID NO:2017.

3. The binding protein of claim 1, wherein the antigen binding domain comprises a variable domain CDR set selected from the group consisting of:

VH AE10-6 AM1 CDR Set

VH AE10-6 AM1 CDR-H1	Residues 31-37 of SEQ ID NO:1998
VH AE10-6 AM1 CDR-H2	Residues 52-69 of SEQ ID NO:1998
VH AE10-6 AM1 CDR-H3	Residue 99-110 of SEQ ID NO:1998

VL AE10-6 AM1 Set

VL AE10-6 AM1 CDR-L1	Residues 24-34 of SEQ ID NO:2008
VL AE10-6 AM1 CDR-L2	Residues 50-56 of SEQ ID NO:2008
VL AE10-6 AM1 CDR-L3	Residues 91-99 of SEQ ID NO:2008

VH AE10-6 AM2 CDR Set

VH AE10-6 AM2 CDR-H1	Residues 31-37 of SEQ ID NO:1999
VH AE10-6 AM2 CDR-H2	Residues 52-69 of SEQ ID NO:1999
VH AE10-6 AM2 CDR-H3	Residue 99-110 of SEQ ID NO:1999

VL AE10-6 AM2 Set

VL AE10-6 AM2 CDR-L1	Residues 24-34 of SEQ ID NO:2009
VL AE10-6 AM2 CDR-L2	Residues 50-56 of SEQ ID NO:2009
VL AE10-6 AM2 CDR-L3	Residues 91-99 of SEQ ID NO:2009

VH AE10-6 AM3 CDR Set

VH AE10-6 AM3 CDR-H1	Residues 31-37 of SEQ ID NO:2000
VH AE10-6 AM3 CDR-H2	Residues 52-69 of SEQ ID NO:2000
VH AE10-6 AM3 CDR-H3	Residue 99-110 of SEQ ID NO:2000

VL AE10-6 AM3 Set

VL AE10-6 AM3 CDR-L1	Residues 24-34 of SEQ ID NO:2010
VL AE10-6 AM3 CDR-L2	Residues 50-56 of SEQ ID NO:2010
VL AE10-6 AM3 CDR-L3	Residues 91-99 of SEQ ID NO:2010

VH AE10-6 AM4 CDR Set

VH AE10-6 AM4 CDR-H1	Residues 31-37 of SEQ ID NO:2001
VH AE10-6 AM4 CDR-H2	Residues 52-69 of SEQ ID NO:2001
VH AE10-6 AM4 CDR-H3	Residue 99-110 of SEQ ID NO:2001

VL AE10-6 AM4 Set

VL AE10-6 AM4 CDR-L1	Residues 24-34 of SEQ ID NO:2011
VL AE10-6 AM4 CDR-L2	Residues 50-56 of SEQ ID NO:2011
VL AE10-6 AM4 CDR-L3	Residues 91-99 of SEQ ID NO:2011

VH AE10-6 AM5 CDR Set

VH AE10-6 AM5 CDR-H1	Residues 31-37 of SEQ ID NO:2002
VH AE10-6 AM5 CDR-H2	Residues 52-69 of SEQ ID NO:2002
VH AE10-6 AM5 CDR-H3	Residue 99-110 of SEQ ID NO:2002

VL AE10-6 AM5 Set

VL AE10-6 AM5 CDR-L1	Residues 24-34 of SEQ ID NO:2012
VL AE10-6 AM5 CDR-L2	Residues 50-56 of SEQ ID NO:2012
VL AE10-6 AM5 CDR-L3	Residues 91-99 of SEQ ID NO:2012

VH AE10-6 AM6 CDR Set

VH AE10-6 AM6 CDR-H1	Residues 31-37 of SEQ ID NO:2003
VH AE10-6 AM6 CDR-H2	Residues 52-69 of SEQ ID NO:2003
VH AE10-6 AM6 CDR-H3	Residue 99-110 of SEQ ID NO:2003

VL AE10-6 AM6 Set

VL AE10-6 AM6 CDR-L1	Residues 24-34 of SEQ ID NO:2013
VL AE10-6 AM6 CDR-L2	Residues 50-56 of SEQ ID NO:2013
VL AE10-6 AM6 CDR-L3	Residues 91-99 of SEQ ID NO:2013

VH AE10-6 AM7 CDR Set

VH AE10-6 AM7 CDR-H1	Residues 31-37 of SEQ ID NO:2004
VH AE10-6 AM7 CDR-H2	Residues 52-69 of SEQ ID NO:2004
VH AE10-6 AM7 CDR-H3	Residue 99-110 of SEQ ID NO:2004

VL AE10-6 AM7 Set

VL AE10-6 AM7 CDR-L1	Residues 24-34 of SEQ ID NO:2014
VL AE10-6 AM7 CDR-L2	Residues 50-56 of SEQ ID NO:2014
VL AE10-6 AM7 CDR-L3	Residues 91-99 of SEQ ID NO:2014

VH AE10-6 AM8 CDR Set

VH AE10-6 AM8 CDR-H1	Residues 31-37 of SEQ ID NO:2005
VH AE10-6 AM8 CDR-H2	Residues 52-69 of SEQ ID NO:2005
VH AE10-6 AM8 CDR-H3	Residue 99-110 of SEQ ID NO:2005

VL AE10-6 AM8 Set

VL AE10-6 AM8 CDR-L1	Residues 24-34 of SEQ ID NO:2015
VL AE10-6 AM8 CDR-L2	Residues 50-56 of SEQ ID NO:2015
VL AE10-6 AM8 CDR-L3	Residues 91-99 of SEQ ID NO:2015

VH AE10-6 AM9 CDR Set

VH AE10-6 AM9 CDR-H1	Residues 31-37 of SEQ ID NO:2006
VH AE10-6 AM9 CDR-H2	Residues 52-69 of SEQ ID NO:2006
VH AE10-6 AM9 CDR-H3	Residue 99-110 of SEQ ID NO:2006

VL AE10-6 AM9 Set

VL AE10-6 AM9 CDR-L1	Residues 24-34 of SEQ ID NO:2016
VL AE10-6 AM9 CDR-L2	Residues 50-56 of SEQ ID NO:2016
VL AE10-6 AM9 CDR-L3	Residues 91-99 of SEQ ID NO:2016

VH AE10-6 AM10 CDR Set

VH AE10-6 AM10 CDR-H1	Residues 31-37 of SEQ ID NO:2007
VH AE10-6 AM10 CDR-H2	Residues 52-69 of SEQ ID NO:2007
VH AE10-6 AM10 CDR-H3	Residue 99-110 of SEQ ID NO:2007

VL AE10-6 AM10 Set

VL AE10-6 AM10 CDR-L1	Residues 24-34 of SEQ ID NO:2017
VL AE10-6 AM10 CDR-L2	Residues 50-56 of SEQ ID NO:2017
VL AE10-6 AM10 CDR-L3	Residues 91-99 of SEQ ID NO:2017

4. The binding protein of claim 3, comprising at least two variable domain CDR sets.

5. The binding protein of claim 4, wherein the at least two variable domain CDR sets are selected from the group consisting of VH AE10-6 AM1 CDR Set and VL AE10-6 AM1 CDR Set; VH AE10-6 AM2 CDR Set and VL AE10-6 AM2 CDR Set; VH AE10-6 AM3 CDR Set and VL AE10-6 AM3 CDR Set; VH AE10-6 AM4 CDR Set and VL AE10-6 AM4 CDR Set; VH AE10-6 AM5 CDR Set and VL AE10-6 AM5 CDR Set; VH AE10-6 AM6 CDR Set and VL AE10-6 AM6 CDR Set; VH AE10-6 AM7 CDR Set and VL AE10-6 AM7 CDR Set; VH AE10-6 AM8 CDR Set and VL AE10-6 AM8_CDR Set; VH AE10-6 AM9_CDR Set and VL AE10-6 AM9_CDR Set; VH AE10-6 AM10_CDR Set and VL AE10-6 AM10 CDR Set.

6. The binding protein of claim 1, wherein the binding protein comprises at least one variable domain having an amino acid sequence selected from the group consisting of SEQ ID NOs 1719-1866; SEQ ID NOs1867-1997; SEQ ID NOs 1998-2007; and SEQ ID NOs 2008-2017.

7. The binding protein of claim 1, wherein the binding protein comprises two variable domains, wherein the first variable domain comprises a sequence selected from the group consisting of SEQ ID NOs 1719-1866,and 1998-2007 and wherein the second variable domain comprises a sequence selected from the group consisting of SEQ ID NOs 1867-1997, and 2007-2017.

8. The binding protein of claim 1, wherein the binding protein:
(a) is capable of modulating a biological function of sclerostin;
(b) is capable of neutralizing sclerostin;
(c) wherein the sclerostin is pro-human sclerostin; mature-human sclerostin, or truncated-human sclerostin;
(d) wherein the binding protein diminishes the ability of sclerostin to bind to its receptor; and/or
(e) wherein the neutralizing binding protein is capable of reducing one or more of Th1 modulation; Th2 modulation; Nk modulation; neutrophil modulation; monocyte-macrophage lineage modulation; neutrophil modulation; eosinophil modulation; B-cells modulation; cytokine modulation; chemokine modulation; adhesion molecule modulation; and cell recruitment modulation.

9. The binding protein of claim 1, wherein the antigen binding domain comprises a heavy chain variable region (VH) comprising three CDRs of SEQ ID NO:2004.

10. The binding protein of claim 1, wherein the antigen binding domain comprises a light chain variable region (VL) comprising three CDRs of SEQ ID NO:2014.

11. The binding protein of claim 1, wherein the antigen binding domain comprises a heavy chain variable region (VH) comprising three CDRs from SEQ ID NO:2004; and wherein the antigen binding domain comprises a light chain variable region (VL) comprising three CDRs of SEQ ID NO:2014.

12. The binding protein of claim 1, wherein the antigen binding domain comprises a heavy chain variable region (VH) comprising the amino acid sequence of SEQ ID NO:2004.

13. The binding protein of claim 1, wherein the antigen binding domain comprises a light chain variable region (VL) comprising the amino acid sequence of SEQ ID NO:2014.

14. The binding protein of claim 1, wherein the antigen binding domain comprises a heavy chain variable region (VH) comprising the amino acid sequence of SEQ ID NO:2004; and wherein the antigen binding domain comprises a light chain variable region (VL) comprising the amino acid sequence of SEQ ID NO:2014.

15. An isolated nucleic acid encoding the binding protein amino acid sequence of claim 1.

16. A vector comprising the isolated nucleic acid of claim 15.

17. A host cell comprising the vector of claim 16.

18. A method of producing a protein capable of binding sclerostin, comprising culturing the host cell of claim 17 in culture medium under conditions sufficient to produce a binding protein capable of binding sclerostin.

19. A protein of claim 1produced by the method of claim 18.

20. Use of an effective amount of the protein of claim 19, in the manufacture of a medicament for treating a mammal.

21. A pharmaceutical composition comprising the binding protein of claim 1, and a pharmaceutically acceptable carrier.

22. The pharmaceutical composition of claim 21, further comprising at least one additional agent for treating a disorder in which sclerostin activity is detrimental.

23. The pharmaceutical composition of claim 22, wherein the additional agent is selected from the group consisting of a therapeutic agent, imaging agent, cytotoxic agent, angiogenesis inhibitors; kinase inhibitors; co-stimulation molecule blockers; adhesion molecule blockers; anti-cytokine antibody or functional fragment thereof; methotrexate; cyclosporin; rapamycin; FK506; detectable label or reporter; a TNF antagonist; an anti-rheumatic; a muscle relaxant, a narcotic, a non-steroid anti-inflammatory drug (NSAID), an analgesic, an anesthetic, a sedative, a local anesthetic, a neuromuscular blocker, an antimicrobial, an antipsoriatic, a corticosteroid, an anabolic steroid, an erythropoietin, an immunization, an immunoglobulin, an immunosuppressive, a growth hormone, a hormone replacement drug, a radiopharmaceutical, an antidepressant, an antipsychotic, a stimulant, an asthma medication, a beta agonist, an inhaled steroid, an oral steroid, an epinephrine or analog, a cytokine, and a cytokine antagonist.

24. Use of the binding protein of claim 1, in the manufacture of a medicament for reducing human sclerostin activity.

25. Use of the binding protein of claim 1, in the manufacture of a medicament for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental.

26. Use of the binding protein of claim 1, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental.

27. The use of claim 26, wherein the disorder is selected from the group consisting of a respiratory disorder; asthma; allergic and nonallergic asthma; asthma due to infection; asthma due to infection with respiratory syncytial virus (RSV); chronic obstructive pulmonary disease (COPD); a condition involving airway inflammation; eosinophilia; fibrosis and /or excess mucus production; cystic fibrosis; pulmonary fibrosis; an atopic disorder; atopic dermatitis; urticaria; eczema; allergic rhinitis; allergic enterogastritis; an inflammatory and/or autoimmune condition of the skin; an inflammatory and/or

autoimmune condition of gastrointestinal organs; inflammatory bowel disease (IBD); ulcerative colitis; Crohn's disease; an inflammatory and/or autoimmune condition of the liver; liver cirrhosis; liver fibrosis; liver fibrosis caused by hepatitis B and/or C virus; scleroderma; a tumors; a cancer; hepatocellular carcinoma; glioblastoma; lymphoma; Hodgkin's lymphoma; a viral infection; HTLV-1 infection; a suppression of expression of protective type 1 immune response, and a suppression of expression of protective type 1 immune responses during vaccination.

28. Use of the binding protein of claim 1 in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an aminosalicylate; 6-mercaptopurine; azathioprine; metronidazole; a lipoxygenase inhibitor; mesalamine; olsalazine; balsalazide; an antioxidant; a thromboxane inhibitor; an IL-1 receptor antagonist; an anti-IL-1β antibody; an anti-IL-6 antibody; a growth factor; an elastase inhibitor; a pyridinyl-imidazole compound; an antibody or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; an antibody of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; a phosphodiesterase inhibitor; an adensosine agonist; an antithrombotic agent; a complement inhibitor; an adrenergic agent; IRAK, NIK, IKK, p38, or a MAP kinase inhibitor; an IL-1β converting enzyme inhibitor; a TNF-α converting enzyme inhibitor; a T-cell signaling inhibitor; a metalloproteinase inhibitor; a 6-mercaptopurine; an angiotensin converting enzyme inhibitor; a soluble cytokine receptor; a soluble p55 TNF receptor; a soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; an anti-inflammatory cytokine; IL-4; IL-10; IL-11; SOST; and TGF-β.