

phase clinical trials (Segal et al., 2016). Thus, there remains a need for novel immune response enhancing compositions for the treatment of cancers.

SUMMARY

[0005] Provided herein are novel anti-CD28 compositions, including anti-CD28 x anti-TAA (e.g., α CD28 x α B7H3) antibodies and methods of using such antibodies for the treatment of cancers. Subject anti-CD28 x anti-TAA antibodies are capable of agonistically binding to CD28 costimulatory molecules on T cells and a tumor associated antigen (e.g., B7H3) on tumor cells. Thus, such antibodies selectively enhance anti-tumor activity at tumor sites while minimizing peripheral toxicity. The subject antibodies provided herein are particularly useful in combination with other anti-cancer therapies, including, for example, checkpoint inhibitors. Also provided herein are novel α CD28 and α B7H3 binding domains.

[0005a] In a first aspect, the present disclosure provides a heterodimeric antibody that binds to human CD28 and human B7H3 comprising: a) a first monomer comprising the amino acid sequence of SEQ ID NO:1019; b) a second monomer comprising the amino acid sequence of SEQ ID NO:1020; and c) a light chain comprising the amino acid sequence of SEQ ID NO:1021.

[0005b] In a further aspect, the present disclosure provides a heterodimeric antibody comprising: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-linker-VH1-CH1-hinge-CH2-CH3, wherein the VH1s are each a first variable heavy domain and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; c) a first common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, d) a second common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, wherein the first common light chain is paired with one of the VH1-CH1 of the first monomer to form a first human B7H3 binding domain, and the second common light chain is paired with the other VH1-CH1 of the first monomer to form a second human B7H3 binding domain, wherein the third common light chain is paired with the VH2-CH1 of the second monomer to form a human CD28 binding domain, wherein each of the VH1s of the first monomer has at least 90% sequence identity to the amino acid sequence of SEQ ID NO:942, wherein the VH2 has at least 90% sequence identity to the amino acid sequence of SEQ ID NO:585, and wherein the VL of the first, second, and third common light chain each have 90% sequence identity to the amino acid sequence of SEQ ID NO:874, wherein the common light chain is separately paired with each VH1-CH1 in the first monomer and the VH2-CH1 in the second monomer, wherein the VH1 and the VL together form a first antigen binding domain (ABD), and the VH2 and the VL together form a second ABD, wherein one of the first and second ABDs binds human CD28 and the other of the first and second ABDs bind human B7H3.

[0005c] In a further aspect, the present disclosure provides a nucleic acid composition comprising: a) a first nucleic acid encoding the first monomer as disclosed herein; b) a second nucleic acid encoding the second monomer as disclosed herein; and c) a third nucleic acid encoding the light chain as disclosed herein.

[0005d] In a further aspect, the present disclosure provides an expression vector composition comprising: a) a first expression vector comprising the first nucleic acid as disclosed herein;

[b\) a second expression vector comprising the second nucleic acid as disclosed herein; and c\) a third expression vector comprising the third nucleic acid as disclosed herein; respectively.](#)

[\[0005e\] In a further aspect, the present disclosure provides a host cell comprising the expression vector composition as disclosed herein.](#)

[\[0005f\] In a further aspect, the present disclosure provides a method of making a heterodimeric antibody as disclosed herein comprising culturing the host cell as disclosed herein under conditions wherein the heterodimeric antibody is expressed and recovering the heterodimeric antibody.](#)

[\[0005g\] In a further aspect, the present disclosure provides a composition comprising a human B7H3 binding domain comprising: a\) a variable heavy domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:942; and b\) a variable light domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:874.](#)

[\[0005h\] In a further aspect, the present disclosure provides a composition comprising a human CD28 binding domain comprising: a\) a variable heavy domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:585; and b\) a variable light domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:874.](#)

[0006] In [a first one aspect example](#), provided herein is a heterodimeric antibody comprising: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-linker-VH1-CH1-hinge-CH2-CH3, wherein the VH1s are each a first variable heavy domain and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; and c) a common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, wherein the common light chain is separately paired with each VH1-CH1 in the first monomer and the VH2-CH1 in the second monomer, wherein the VH1 and the VL together form a first antigen binding domain (ABD), and the VH2 and the VL together form a second ABD, wherein one of the first and second ABDs binds human CD28 and the other of the first and second ABDs bind human B7H3.

[0007] In some [embodiment examples](#), the first ABD binds human CD28 and the second binds human B7H3. In certain [embodiment examples](#), the first ABD binds human B7H3 and the second binds human CD28.

[0008] In some [embodiment examples](#), the amino acid sequence of the VH1 domain is selected from the group consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID

NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and wherein the amino acid sequence of the VL domain is SEQ ID NO:874.

[0009] In some [embodimentexamples](#), the amino acid sequence of the VH2 domain is selected from the group consisting of SEQ ID NO: 585, SEQ ID NO:870, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651.

[0010] In certain [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains.

[0011] In some [embodimentexamples](#) of the heterodimeric antibody, the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In exemplary [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0012] In some [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In some [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0013] In some [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In some [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0014] In some [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0015] In exemplary [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428L/434S.

[0016] In some [embodimentexamples](#), the second monomer comprises the amino acid sequence of SEQ ID NO:1019, the first monomer comprises the amino acid sequence of SEQ ID NO:1020, and the light chain has the amino acid sequence of SEQ ID NO:1021.

[0017] In another aspect, provided herein is a heterodimeric antibody comprising: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-hinge-CH2-CH3, wherein VH1 is a first variable heavy domain and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; and c) a common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, wherein the first VH domain and the VL domain together form a first ABD, and the second VH domain and the VL domain

together form a second ABD, and wherein one of the first and second ABDs binds human CD28 and the other of the first and second ABDs bind human B7H3.

[0018] In certain [embodimentexamples](#), the amino acid sequence of the VH1 domain is selected from the group consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and wherein the amino acid sequence of the VL domain is SEQ ID NO:874.

[0019] In some [embodimentexamples](#), the amino acid sequence of the VH2 domain is selected from the group consisting of SEQ ID NO:585, SEQ ID NO:870, , SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID

NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651.

[0020] In certain [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains.

[0021] In some [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In certain [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0022] In some [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In certain [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0023] In certain [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the first monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0024] In some [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the first monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and the second Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0025] In some [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428L/434S.

[0026] In another [aspectexample](#), provided herein is a heterodimeric antibody comprising: a) a first monomer comprising from N-terminal to C-terminal, VH1-CH1-first domain linker-scFv-second domain linker-CH2-CH3, wherein VH1 is a first variable heavy domain, scFv is an anti-CD28 scFv, and CH2-CH3 is a first Fc domain; b) a second monomer comprising from N-terminal to C-terminal a VH1-CH1-hinge-CH2-CH3, wherein CH2-CH3 is a second Fc

domain; and c) a light chain comprising, from N-terminus to C-terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain, wherein each of the VH1 domain and the first VL1 domain together form a first antigen binding domain (ABD) and the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), and the VH2 and the VL2 form a second ABD, wherein one of the first and second ABDs bind human CD28 and the other of the first and second ABDs bind a tumor target antigen (TTA).

[0027] In certain [embodimentexamples](#), the first ABDs bind human CD28 and the second ABD binds a TTA. In some [embodimentexamples](#), the first ABDs bind a TTA and the second ABD binds human CD28.

[0028] In some [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VL2-scFv linker-VH2. In some [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VH2-scFv linker-VL2.

[0029] In some [embodimentexamples](#), the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO:870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID

NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.

[0030] In certain [embodimentexamples](#), the TTA is human B7H3.

[0031] In some [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains.

[0032] In exemplary [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In some [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0033] In some [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In certain [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0034] In some [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer

comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0035] In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0036] In certain [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428L/434S.

[0037] In one [aspectexample](#), provided herein is a heterodimeric antibody comprising: a) a first monomer comprising: i) a scFv comprising a first variable heavy domain, an scFv linker and a first variable light domain; and ii) a first Fc domain, wherein the scFv is covalently attached to the N-terminus of the first Fc domain using a domain linker; b) a second monomer comprising, from N-terminus to C-terminus, a VH1-CH1-hinge-CH2-CH3, wherein VH is a first variable heavy domain and CH2-CH3 is a second Fc domain; and c) a light chain comprising, from N-terminus to C-terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain, wherein the VH1 and the VL1 together form a first ABD and wherein the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), wherein the VH2 and the VL2 together form a second ABD, and wherein one of the first ABD and second ABD binds CD28 and the other of the first ABD and second ABD binds a TTA.

[0038] In some [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VL2-scFv linker-VH2. In certain [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VH2-scFv linker-VL2.

[0039] In certain [embodimentexamples](#), the second ABD binds to human CD28 wherein the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO: 870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID

NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.

[0040] In some [embodiment examples](#), the first Fc domain and second Fc domain are each variant Fc domains.

[0041] In certain [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In exemplary [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0042] In certain [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In some [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0043] In certain [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0044] In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0045] In some [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428L/434S.

[0046] In another [aspectexample](#), provided herein is a heterodimeric antibody comprising: a) a first monomer comprising from N-terminal to C-terminal, VH1-CH1-hinge-CH2-CH3-domain linker-scFv, wherein VH1 is a first variable heavy domain, scFv is an anti-CD28 scFv, and CH2-CH3 is a first Fc domain; b) a second monomer comprising from N-terminal to C-terminal a VH1-CH1-hinge-CH2-CH3, wherein CH2-CH3 is a second Fc domain; and c) a light chain comprising, from N-terminus to C-terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain, wherein each of the VH1 domain and the first VL1 domain together form a first antigen binding domain (ABD) and the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), and the VH2 and the VL2 together form a second ABD, wherein one of the first and second ABDs bind human CD28 and the other of the first and second ABDs bind a tumor target antigen (TTA).

[0047] In certain [embodimentexamples](#), the first ABD bind human CD28 and the second ABD binds a TTA. In some [embodimentexamples](#), the first ABD bind a TTA and the second ABD binds human CD28.

[0048] In certain [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VL2-scFv linker-VH2. In some [embodimentexamples](#), the scFv comprises, from N- to C-terminal, VH2-scFv linker-VL2.

[0049] In certain [embodimentexamples](#), the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO:870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID

NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.

[0050] In some [embodimentexamples](#), the TTA is human B7H3.

[0051] In some [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains. In some [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In certain [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0052] In some [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In certain [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0053] In some [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0054] In some [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0055] In exemplary [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428L/434S.

[0056] In another [aspectexample](#), provided herein is a nucleic acid composition comprising: a) a first nucleic acid encoding the first monomer of any of the heterodimeric antibodies described herein; b) a second nucleic acid encoding the second monomer of the heterodimeric antibody; and c) a third nucleic acid encoding the light chain of the heterodimeric antibody, respectively. Also provided herein are expression vector compositions that include expression vectors comprising one or more of the first, second and third nucleic acids, host cells that include such expression vector compositions, and methods of making the heterodimeric antibodies described herein.

[0057] In another [aspectexample](#), provided herein is a method of treating cancer in a patient in need thereof, comprising administering to the patient a heterodimeric antibody provided herein.

[0058] In another [aspectexample](#), provided herein is a method of treating cancer in a patient in need thereof, comprising administering to the patient: a) a heterodimeric antibody described herein, wherein the TTA is human B7H3; and b) a bispecific antibody that binds CD3 and B7H3.

[0059] In yet another [aspectexample](#), provided herein is a method of treating cancer in a patient in need thereof, comprising administering to the patient: a) a heterodimeric antibody described herein, wherein the TTA is human B7H3; and b) a checkpoint inhibitor selected from the group consisting of an anti-PD-1 antibody and an anti-PD-L1 antibody.

[0060] In yet another [aspectexample](#), provided herein is a composition comprising an anti-CD28 ABD comprising: a) a variable heavy domain with an amino acid sequence selected from the group consisting of SEQ ID NO: 870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630,

SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, SEQ ID NO:651, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:670, SEQ ID NO:671 and SEQ ID NO:672; and b) variable light domain with an amino acid sequence selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756. In some [embodimentexamples](#), the composition is an antibody comprising: a) a heavy chain comprising the VH-CH1-hinge-CH2-CH3; and b) a light chain comprising the VL-CL.

[0061] In another [aspectexample](#), provided herein is a composition comprising an anti-B7H3 ABD comprising: a) a variable heavy domain with an amino acid sequence selected from the group

consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and b) variable light domain having the amino acid sequence selected from the group consisting of SEQ ID NO:874 and SEQ ID NO: 932.

[0062] In one [aspectexample](#), provided herein is composition comprising an anti-B7H3 ABD comprising: a) a variable heavy domain having the amino acid sequence of SEQ ID NO:946; and b) a variable light domain having the amino acid sequence of SEQ ID NO:950.

[0063] In another [aspectexample](#), provided herein is composition comprising an anti-B7H3 ABD comprising: a) a variable heavy domain having the amino acid sequence of SEQ ID NO:956; and b) a variable light domain having the amino acid sequence of SEQ ID NO:960.

[0064] In one [aspectexample](#), provided herein is a composition comprising an anti-B7H3 ABD comprising: a) a variable heavy domain having the amino acid sequence of SEQ ID NO:964; and b) a variable light domain having the amino acid sequence of SEQ ID NO:968.

[0065] In another aspect, provided herein is a composition comprising an anti-B7H3 ABD comprising: a) a variable heavy domain having the amino acid sequence of SEQ ID NO:972; and b) a variable light domain having the amino acid sequence of SEQ ID NO:976.

[0066] In some [embodimentexamples](#), the composition is an antibody comprising: a) a heavy chain comprising the VH linked to -CH1-hinge-CH2-CH3; and b) a light chain comprising the VL linked to-CL.

[0067] In another [aspectexample](#), provided herein is a nucleic acid composition comprising: a) a first nucleic acid encoding the VH of any of the anti-CD28 ABDs or anti-B7H3 ABDs described herein; and b) a second nucleic acid encoding the VL of the anti-CD28 or anti-B7H3 ABD, respectively. Also provided herein are expression vector compositions that include expression vectors comprising one or more of the first, and second nucleic acids, host cells that include such nucleic acid compositions or expression vector compositions, and methods of making the anti-CD28 ABDs or anti-B7H3 ABDs compositions described herein.

[0068] In one [aspectexample](#), provided herein is a composition that includes a CD28 antigen binding domain (ABD). The CD28 ABD includes the variable heavy complementary determining regions 1-3 (vhCDR1-3) and the variable light complementary determining regions (vlCDR1-3) of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1.

[0069] In some [embodimentexamples](#), the CD28 ABD includes a variable heavy domain and a variable light domain of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1. In exemplary [embodimentexamples](#), the CD28 antigen binding domain selected from the following CD28 antigen binding domain: CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1.

[0070] In another [aspectexample](#), provided herein is an anti-CD28 antibody that includes a CD28 antigen binding domain (ABD). The CD28 antigen binding domain includes the variable heavy complementary determining regions 1-3 (vhCDR1-3) and the variable light complementary determining regions (vlCDR1-3) of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1. In some [embodimentexamples](#), the CD28 ABD includes a variable heavy domain and a variable light domain of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1. In exemplary [embodimentexamples](#), the CD28 antigen binding domain selected from the following CD28 antigen binding domain: CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, hu9.3[CD28]_H1L1.

[0071] In some [embodimentexamples](#), the anti-CD28 antibody includes: a) a first monomer that includes a first antigen binding domain and a first constant domain; and b) a second monomer that includes a second antigen binding domain and a second constant domain, wherein either of the first antigen binding domain or second antigen binding domain is the CD28 antigen binding domain.

[0072] In some [embodimentexamples](#), the first antigen binding domain and the second antigen binding domain bind different antigens.

[0073] In certain [embodimentexamples](#), the CD28 antigen binding domain is an anti-CD28 single chain fragment (scFv). In exemplary [embodimentexamples](#), the scFv includes a charged scFv linker.

[0074] In some [embodimentexamples](#), the first and second constant domains each include CH2-CH3. In exemplary [embodimentexamples](#), the first and second constant domains each are a variant constant domain. In certain [embodimentexamples](#), the first and second constant domains include a set of heterodimerization variants selected from the group consisting of S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V. In certain [embodimentexamples](#), the first and second monomers each further include one or more ablation variants. In exemplary [embodimentexamples](#), the ablation variants are E233P/L234V/L235A/G236del/S267K. In some [embodimentexamples](#), at least one of the first or second monomer further include one or more pI variants. In particular [embodimentexamples](#), the pI variants are N208D/Q295E/N384D/Q418E/N421D.

[0075] In another [aspectexample](#), provided herein is a composition that includes a B7H3 antigen binding domain (ABD). The B7H3 binding domain includes the variable heavy complementary determining regions 1-3 (vhCDR1-3) and the variable light complementary determining regions (vlCDR1-3) of any of the following B7H3 binding domains:

2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1,
2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1,
6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157,
huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852,
m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13,
chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5,
huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542,
h1702, h1703, huA3, huA9, and m1704.

[0076] In some [embodimentexamples](#), the B7H3 ABD includes a variable heavy domain and a variable light domain of any of the following B7H3 binding domains:

2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1,
2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1,
6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157,
huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852,
m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13,
chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5,
huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542,
h1702, h1703, huA3, huA9, and m1704.

[0077] In exemplary [embodimentexamples](#), the B7H3 ABD is selected from the following B7H3 antigen binding domain: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[0078] In yet another [aspectexample](#), provided herein is an anti-B7H3 antibody that includes an B7H3 antigen binding domain, the B7H3 antigen binding domain includes the variable heavy complementary determining regions 1-3 (vhCDR1-3) and the variable light complementary determining regions (vlCDR1-3) of any of the following B7H3 antigen binding domain: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[0079] In some [embodimentexamples](#), the anti-B7H3 antibody includes a B7H3 antigen binding domain. The B7H3 antigen binding domain includes a variable heavy domain and a variable light domain of any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704. In exemplary [embodimentexamples](#), the B7H3 antigen binding domain selected from any one of the following B7H3 antigen binding domains:

2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[0080] In some [embodimentexamples](#), the antibody includes: a) a first monomer that includes a first antigen binding domain and a first constant domain; and b) a second monomer that includes a second antigen binding domain and a second constant domain, wherein either of the first antigen binding domain or second antigen binding domain is the B7H3 antigen binding domain. In certain [embodimentexamples](#), first antigen binding domain and the second antigen binding domain bind different antigens.

[0081] In exemplary [embodimentexamples](#), the first antigen binding domain is a B7H3 antigen binding domain and the second antigen binding domain is a CD28 binding domain. In some [embodimentexamples](#), the CD28 binding domain includes the vhCDR1-3, and vlCDR1-3 of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1. In some [embodimentexamples](#), the CD28 binding domain includes the variable heavy domain and variable light domain of any of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1. In certain [embodimentexamples](#), the CD28 binding domain is an anti-CD28 scFv. In exemplary [embodimentexamples](#), the scFv comprises a charged scFv linker.

[0082] In some [embodimentexamples](#), the first and second constant domains each comprise CH2-CH3. In exemplary [embodimentexamples](#), the first and second constant domains each are a variant constant domain.

[0083] In particular [embodimentexamples](#), the first and second constant domains include a set of heterodimerization variants selected from S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V. In certain [embodimentexamples](#), the first and second monomers each include one or more ablation variants. In certain [embodimentexamples](#), the ablation variants are E233P/L234V/L235A/G236del/S267K. In some [embodimentexamples](#), at least one of the first or second monomers further include one or more pI variants. In particular [embodimentexamples](#), the pI variants are N208D/Q295E/N384D/Q418E/N421D.

[0084] In another [aspectexample](#), provided herein is an anti-CD28 x anti-TAA 1 + 1 Fab-scFv-Fc heterodimeric antibody. In one [embodimentexample](#), the heterodimeric antibody includes: a) a first monomer comprising: i) an anti-CD28 scFv comprising a first variable heavy domain, an scFv linker and a first variable light domain; and ii) a first Fc domain, wherein the scFv is covalently attached to the N-terminus of the first Fc domain using a domain linker; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; and c) a third monomer comprising a second variable light domain, wherein the second variable heavy domain and the second variable light domain form a tumor associated antigen (TAA) binding domain.

[0085] In some [embodimentexamples](#), the anti-CD28 scFv comprises the vhCDR1-3 and the vlCDR1-3 of any of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1.

[0086] In certain [embodimentexamples](#), the first variable heavy domain and first variable light domain of the anti-CD28 scFv are the variable heavy domain and variable light domain, respectively, of any of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1.

[0087] In particular [embodimentexamples](#), the TAA binding domain is a B7H3 binding domain. In some [embodimentexamples](#), the B7H3 binding domain comprises the vhCDR1-3 and vlCDR1-3 of any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[0088] In exemplary [embodimentexamples](#), the second variable heavy domain and the second variable light domain are the variable heavy domain and variable light domain, respectively, of any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[0089] In exemplary [embodimentexamples](#), the anti-CD28 scFv is oriented, from N-terminus to C-terminus, first variable light domain-scFv linker-first variable heavy domain. In other [embodimentexample](#), the anti-CD28 scFv is oriented, from N-terminus to C-terminus, first variable heavy domain-scFv linker-first variable light domain. In many [embodimentexamples](#), the scFv linker is a charged scFv linker.

[0090] In certain [embodimentexample](#), first and second Fc domains are variant Fc domains. In some [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the group consisting of S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In exemplary [embodimentexample](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[0091] In certain [embodimentexamples](#), first and second Fc domains each comprise one or more ablation variants. In exemplary [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[0092] In some [embodimentexamples](#), one of the first or second monomers comprise one or more pI variants. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[0093] In exemplary [embodimentexamples](#), the first Fc domain comprises amino acid variants S364K/E357Q/ E233P/L234V/L235A/G236del/S267K; the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, and wherein numbering is according to EU numbering.

[0094] In certain [embodimentexamples](#), the scFv linker is a charged scFv linker having the amino acid sequence (GKPGS)₄.

[0095] In particular [embodimentexamples](#), the first and second Fc domains each further comprise amino acid variants 428/434S.

[0096] In some [embodimentexamples](#), the anti-CD28 x anti-TAA 1 + 1 Fab-scFv-Fc heterodimeric antibody includes: a) a first monomer comprising, from N-terminus to C-terminus, an anti-CD28 scFv-linker-CH2-CH3, wherein CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH-CH1-hinge-CH2-CH3, wherein CH2-CH3 is a second variant Fc domain; and c) a third monomer comprising VL-CL; wherein the first variant Fc domain comprises amino acid variants S364K/E357Q, wherein the second variant Fc domain comprises amino acid variants L368D/K370S, wherein the first and second variant Fc domains each comprises amino acid variants E233P/L234V/L235A/G236del/S267K, wherein the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants N208D/Q295E/N384D/Q418E/N421D, wherein the VH and VL form a tumor associated antigen (TAA) binding domain, and wherein the anti-CD28 scFv comprises the variable heavy domain and the variable light domain of one of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1,

PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1, and wherein numbering is according to EU numbering.

[0097] In certain [embodimentexamples](#), the TAA binding domain is a B7H3 binding domain. In some [embodimentexamples](#), VH and VL are the variable heavy domain and variable light domain, respectively, of any of the following B7H3 antigen binding domains:

2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1,
2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1,
6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157,
huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852,
m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13,
chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5,
huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542,
h1702, h1703, huA3, huA9, and m1704.

[0098] In exemplary [embodimentexamples](#), the scFv comprises a charged scFv linker having the amino acid sequence (GKPGS)₄. In some [embodimentexamples](#), the first and second variant Fc domains each further comprise amino acid variants 428/434S, wherein numbering is according to EU numbering.

[0099] In another [aspectexample](#), provided herein are anti-CD28 x anti-TAA 2 + 1 Fab₂-scFv-Fc antibodies that include: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-linker 1-anti-CD28 scFv-linker 2-CH2-CH3, wherein VH1 is a first variable heavy domain, linker 1 and linker 2 are a first domain linker and second domain linker, respectively, and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; and c) a common light chain comprising a variable light domain; wherein the first variable heavy domain and the variable light domain form a first tumor associated antigen (TAA) binding domain, and the second variable heavy domain and the variable light domain form a second TAA binding domain.

[00100] In exemplary [embodimentexamples](#), the first TAA binding domain and second TAA binding domain are each B7H3 binding domains. In exemplary [embodimentexamples](#), the first and second B7H3 binding domains each comprise the vhCDR1-3 and vlCDR1-3 of any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1,

2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704. In some [embodimentexamples](#), the first and second variable heavy domain each comprise a variable heavy domain of a B7H3 binding domain, and the variable light domain comprises a variable light domain of the B7H3 binding domain, wherein the B7H3 binding domain is any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[00101] In several [embodimentexamples](#) of the anti-CD28 x anti-TAA 2 + 1 Fab₂-scFv-Fc antibody, the anti-CD28 scFv comprises an scFv variable heavy domain, an scFv variable light domain and an scFv linker that connects the scFv variable heavy domain and the scFv variable light domain. In certain [embodimentexamples](#), the anti-CD28 scFv comprises the vhCDR1-3 and the vlCDR1-3 of any of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1. In certain [embodimentexamples](#), the scFv variable heavy domain and the scFv variable light domain of the anti-CD28 scFv comprises the variable heavy domain and variable light domain, respectively, of any of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1,

341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1.

[00102] In some [embodimentexamples](#), the scFv variable heavy domain is attached to the C-terminus of the CH1 of the first monomer using the first domain linker and the scFv variable light domain is covalently attached to the N-terminus of the first Fc domain using the second domain linker. In other [embodimentexamples](#), the scFv variable light domain is attached to the C-terminus of the CH1 of the first monomer using the first domain linker and the scFv variable heavy domain is covalently attached to the N-terminus of the first Fc domain using the second domain linker. In some [embodimentexamples](#), the scFv linker is a charged scFv linker.

[00103] In certain [embodimentexamples](#), the first and second Fc domains are variant constant domains. In the first and second Fc domains comprise a set of heterodimerization variants selected from the following heterodimerization skew variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In some [embodimentexamples](#), the first and second Fc domains include heterodimerization skew variants S364K/E357Q : L368D/K370S.

[00104] In some [embodimentexamples](#), the first and second Fc domains each include one or more ablation variants. In exemplary [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[00105] In some [embodimentexamples](#), one of the first or second monomer comprises one or more pI variants. In particular [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[00106] In exemplary [embodimentexamples](#), the first Fc domain of the first monomer comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants N208D/E233P/L234V/L235A/ G236del/S267K/Q295E/L368D/K370S/N384D/Q418E/N421D, and wherein numbering is according to EU numbering.

[00107] In some [embodimentexamples](#), the anti-CD28 scFv comprises a charged scFv linker having the amino acid sequence (GKPGS)₄. In certain [embodimentexamples](#), the first and second

variant Fc domains each further comprise amino acid variants 428/434S, wherein numbering is according to EU numbering.

[00108] In some [embodimentexamples](#), the anti-CD28 x anti-TAA 2 + 1 Fab₂-scFv-Fc antibodies include: a) a first monomer comprising from N-terminal to C-terminal, a VH1-CH1-linker 1-anti-CD28 scFv-linker 2-CH2-CH3, wherein CH2-CH3 is a first variant Fc domain; b) a second monomer comprising from N-terminal to C-terminal a VH1-CH1-hinge-CH2-CH3, wherein CH2-CH3 is a second variant Fc domain; and c) a common light chain comprising VL-CL; wherein the first variant Fc domain comprises amino acid variants S364K/E357Q, wherein the second variant Fc domain comprises amino acid variants L368D/K370S, wherein the first and second variant Fc domains each comprises amino acid variants E233P/L234V/L235A/G236del/S267K, wherein the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants N208D/Q295E/N384D/Q418E/N421D, wherein the VH1 and VL each form a tumor associated antigen (TAA) binding domain, wherein the anti-CD28 scFv comprises the variable heavy domain and the variable light domain of any of the following CD28 antigen binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1, and wherein numbering is according to EU numbering.

[00109] In some [embodimentexamples](#), the VH1 and VL form a B7H3 binding domain. In exemplary [embodimentexamples](#), the VH1 and VL are the variable heavy domain and variable light domain of any of the following B7H3 antigen binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[00110] In some [embodimentexamples](#), the scFv comprises a charged scFv linker having the amino acid sequence (GKPGS)₄. In certain [embodimentexamples](#), the first and second variant Fc domains each further comprise amino acid variants 428/434S.

[00111] In another [aspectexample](#), provided herein are anti-CD28 x anti-TAA 1 + 1 CLC heterodimeric antibodies that include: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-hinge-CH2-CH3, wherein VH1 is a first variable heavy domain and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-C3 is a second Fc domain; and c) a common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, wherein the first variable heavy domain and the variable light domain form a first antigen binding domain, and the second variable heavy domain and the variable light domain form a second antigen binding domain.

[00112] In some [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains. In certain [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In exemplary [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[00113] In certain [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In exemplary [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[00114] In some [embodimentexamples](#), one of the first or second monomer further comprises a pI variant. In particular [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the first monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[00115] In certain [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the first monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, the second Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, and wherein numbering is according to EU numbering.

[00116] In some [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428/434S.

[00117] In certain [embodimentexamples](#), the first antigen binding domain or the second binding domain binds CD28 and the other antigen binding domain binds a tumor associated antigen (TAA).

[00118] In certain [embodimentexamples](#), the second antigen binding domain binds CD28 and VH2 and VL comprises the variable heavy domain and variable light domain, respectively, of any one of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1, 5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1.

[00119] In some [embodimentexamples](#), the first antigen binding domain binds the TTA. IN exemplary [embodimentexamples](#), the TAA is B7H3. In exemplary [embodimentexamples](#), the VH1 and VL comprises the variable heavy domain and variable light domain, respectively, of any one of the following B7H3 binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[00120] In exemplary [embodimentexamples](#), the first antigen binding domain binds B7H3 and the second antigen binding domain binds CD28, VH1 is variable heavy domain 2E4A3.189[B7H3]_H1.22, VH2 is variable heavy domain 1A7[CD28]_H1.14, and VL is variable light domain 1A7[CD28]_L1.

[00121] In one [aspectexample](#), provided herein are anti-CD28 x anti-TAA 2 + 1 CLC heterodimeric antibodies that include: a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-linker-VH1-CH1-hinge-CH2-CH3, wherein the VH1s are each a first variable heavy domain and CH2-CH3 is a first Fc domain; b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-C3 is a second Fc domain; and c) a common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain

and CL is a constant light domain, wherein the first variable heavy domains and the variable light domain each form a first antigen binding domain, and the second variable heavy domain and the variable light domain form a second antigen binding domain.

[00122] In some [embodimentexamples](#), the first Fc domain and second Fc domain are each variant Fc domains. In some [embodimentexamples](#), the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering. In certain [embodimentexamples](#), the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

[00123] In several [embodimentexamples](#), the first and second Fc domains each comprise one or more ablation variants. In exemplary [embodimentexamples](#), the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

[00124]

[00125] In particular [embodimentexamples](#), the one of the first or second monomer further comprises a pI variant. In exemplary [embodimentexamples](#), the CH1-hinge-CH2-CH3 of the first monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

[00126] In some [embodimentexamples](#) of the anti-CD28 x anti-TAA 2 + 1 CLC heterodimeric antibodies, the CH1-hinge-CH2-CH3 of the first monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, the second Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, and wherein numbering is according to EU numbering.

[00127] In some [embodimentexamples](#), the first and second variant Fc domains each comprise amino acid variants 428/434S.

[00128] In certain [embodimentexamples](#), the first antigen binding domains binds CD28 and the second antigen binding domain binds a tumor associated antigen (TAA). In exemplary [embodimentexamples](#), VH1 and VL comprises the variable heavy domain and variable light domain, respectively, of any one of the following CD28 binding domains: 1A7[CD28]_H1L1, 1A7[CD28]_H1.14L1, 1A7[CD28]_H1_L1.71, 1A7[CD28]_H1.1_L1.71, 1A7[CD28]_H1.14_L1.71, CD28.3[CD28]_H0L0, hCD28.3[CD28]_H1L1,

5.11A1[CD28]_H0L0, TGN1412_H1L1, 341VL34[CD28]_H1L1, 341VL36[CD28]_H1L1, 281VL4[CD28]_H1L1, HuTN228[CD28]_H1L1, PV1[CD28]_H0L0, m9.3[CD28]_H0L0, and hu9.3[CD28]_H1L1.

[00129] In some [embodimentexamples](#), the TAA is B7H3. In exemplary [embodimentexamples](#), VH2 and VL comprises the variable heavy domain and variable light domain, respectively, of any one of the following B7H3 binding domains: 2E4A3.189[B7H3]_H1L1, 2E4A3.189[B7H3]_H1/1A7[CD28]_L1, 2E4A3.189[B7H3]_H1.22L1, 2E4A3.189[B7H3]_H1.22/1A7[CD28]_L1, 6A1[B7H3]_H1L1, omburtamab, enoblituzumab, BRCA84D, BRCA69D, PRCA157, huPRCA157, mAb-D, humAb-D, M30, M30-H1-L4, SP265, S10-H50L58, 8H9, m852, m857, m8524, 1-1, 1-2, 1-4, 1-5, 1-7, 2-5, 2-8, chAb2, chAb3, chAb4, chAb18, chAb13, chAb12, chAb14, chAb6, chAb11, chAb16, chAb10, chAb7, chAb8, chAb17, chAb5, huAb3v2.5, huAb3v2.6, huAb13v1, TPP-5706, TPP-6642, TPP-6850, TPP-3803, TRL4542, h1702, h1703, huA3, huA9, and m1704.

[00130] In some [embodimentexamples](#), VH1 is variable heavy domain 1A7[CD28]_H1.14, VH2 is variable heavy domain 2E4A3.189[B7H3]_H1.22, and VL is variable light domain 1A7[CD28]_L1.

[00131] In another [aspectexample](#), provided herein is a heterodimeric antibody selected from the following heterodimeric antibodies: XENP34730, XENP34389, XENP34728, XENP34717 and XENP34339.

[00132] Also provided herein are nucleic acid compositions encoding the compositions and antibodies provided herein, expression vectors that include such nucleic acids, and host cells that include the expression vectors.

[00133] In another [aspectexample](#), provided herein are methods of treating a cancer comprising administering to a patient in need thereof an antibody provided herein (e.g., an anti-CD28 x anti-TAA antibody). In some [embodimentexamples](#), the patient is also administered a cancer therapeutic. In particular [embodimentexamples](#), the therapeutic is a checkpoint inhibitor (e.g., an anti-PD1 antibody) or an anti-CD3 x anti-TAA bispecific antibody.

BRIEF DESCRIPTION OF THE DRAWINGS

[00134] Figure 1 depicts the sequences for human, mouse, and cynomolgus CD28. Such CD28 are useful for the development of cross-reactive CD28 antigen binding domains for ease of clinical development.

WHAT IS CLAIMED IS:

1. A heterodimeric antibody that binds to human CD28 and human B7H3 comprising:

a) a first monomer comprising the amino acid sequence of SEQ ID NO:1019;

b) a second monomer comprising the amino acid sequence of SEQ ID NO:1020; and

c) a light chain comprising the amino acid sequence of SEQ ID NO:1021.

2+. A heterodimeric antibody comprising:

a) a first monomer comprising, from N-terminus to C-terminus, a VH1-CH1-linker-VH1-CH1-hinge-CH2-CH3, wherein the VH1s are each a first variable heavy domain and CH2-CH3 is a first Fc domain;

b) a second monomer comprising, from N-terminus to C-terminus, a VH2-CH1-hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; ~~and~~

c) a first common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain,

d) a second common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain, and

e) a third common light chain comprising, from N-terminus to C-terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain,

wherein the first common light chain is paired with one of the VH1-CH1 of the first monomer to form a first human B7H3 binding domain, and the second common light chain is paired with the other VH1-CH1 of the first monomer to form a second human B7H3 binding domain,

wherein the third common light chain is paired with the VH2-CH1 of the second monomer to form a human CD28 binding domain,

wherein each of the VH1s of the first monomer has at least 90% sequence identity to the amino acid sequence of SEQ ID NO:942,

wherein the VH2 has at least 90% sequence identity to the amino acid sequence of SEQ ID NO:585, and

wherein the VL of the first, second, and third common light chain each have 90% sequence identity to the amino acid sequence of SEQ ID NO:874,

wherein the common light chain is separately paired with each VH1-CH1 in the first monomer and the VH2-CH1 in the second monomer,

wherein the VH1 and the VL together form a first antigen binding domain (ABD), and the VH2 and the VL together form a second ABD, wherein one of the first and second ABDs binds human CD28 and the other of the first and second ABDs bind human B7H3.

~~2. A heterodimeric antibody according to claim A1, wherein the first ABD binds human CD28 and the second binds human B7H3.~~

~~3. A heterodimeric antibody according to claim A1, wherein the first ABD binds human B7H3 and the second binds human CD28.~~

~~4. A heterodimeric antibody according to 3, wherein the amino acid sequence of the VH1 domain is selected from the group consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and wherein the amino acid sequence of the VL domain is SEQ ID NO:874.~~

~~5. A heterodimeric antibody according to any of claims 1 to 4 wherein the amino acid sequence of the VH2 domain is selected from the group consisting of SEQ ID NO: 585, SEQ ID NO:870, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID~~

~~NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651.~~

~~3.6.~~ The heterodimeric antibody according to ~~claim 2~~any of claims 1 to 5, wherein the first Fc domain and second Fc domain are each variant Fc domains.

~~47.~~ The heterodimeric antibody according to claim ~~36~~, wherein the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering.

~~58.~~ The heterodimeric antibody according to claim ~~47~~, wherein the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

~~69.~~ The heterodimeric antibody according to ~~claim 3~~any one of claims 1 to 7, wherein the first and second Fc domains each comprise one or more ablation variants.

~~7+10.~~ The heterodimeric antibody according to claim ~~69~~, wherein the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

~~8+11.~~ The heterodimeric antibody according to ~~claim 3~~any of claims 1 to 10, wherein one of the first or second monomer ~~comprise one or more~~further comprises a pI ~~variants~~variant.

~~9~~12. The heterodimeric antibody according to claim ~~8~~11, wherein the CH1-hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.

~~10. 13.~~ The heterodimeric antibody according to ~~claim 3~~any one of claims 1 to 12, wherein the CH1-hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K,

wherein the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K,

and wherein numbering is according to EU numbering.

~~11~~14. The heterodimeric antibody according to ~~claim 3~~any one of claims 1 to 13, wherein the first and second variant Fc domains each comprise amino acid variants 428L/434S.

12. The heterodimeric antibody according to any one of claims 1 to 11, wherein each of the VH1s of the first monomer has the amino acid sequence of SEQ ID NO:942,

wherein the VH2 has the amino acid sequence of SEQ ID NO:585, and

wherein the VL of the first, second, and third common light chain each have the amino acid sequence of SEQ ID NO:874.

~~15. The heterodimeric antibody according to any of claims 1 to 14, wherein the second monomer comprises the amino acid sequence of SEQ ID NO:1019, the first monomer comprises the amino acid sequence of SEQ ID NO:1020, and the light chain has the amino acid sequence of SEQ ID NO:1021.~~

~~16. A heterodimeric antibody comprising:~~

~~—— a) a first monomer comprising, from N terminus to C terminus, a VH1-CH1 hinge-CH2-CH3, wherein VH1 is a first variable heavy domain and CH2-CH3 is a first Fc domain;~~

~~—— b) a second monomer comprising, from N terminus to C terminus, a VH2-CH1 hinge-CH2-CH3, wherein VH2 is a second variable heavy domain and CH2-CH3 is a second Fc domain; and~~

~~—— c) a common light chain comprising, from N terminus to C terminus, VL-CL, wherein VL is a variable light domain and CL is a constant light domain.~~

—wherein the first VH domain and the VL domain together form a first ABD, and the second VH domain and the VL domain together form a second ABD, and wherein one of the first and second ABDs binds human CD28 and the other of the first and second ABDs bind human B7H3.

17. A heterodimeric antibody according to claim 15, wherein the amino acid sequence of the VH1 domain is selected from the group consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and wherein the amino acid sequence of the VL domain is SEQ ID NO:874.

18. A heterodimeric antibody according to any of claims 16 or 17 wherein the amino acid sequence of the VH2 domain is selected from the group consisting of SEQ ID NO:585, SEQ ID NO:870, , SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651.

~~19. The heterodimeric antibody according to any of claims 16 to 18, wherein the first Fe domain and second Fe domain are each variant Fe domains.~~

~~20. The heterodimeric antibody according to claim 19, wherein the first and second Fe domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K : T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering.~~

~~21. The heterodimeric antibody according to claim 20, wherein the first and second Fe domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.~~

~~22. The heterodimeric antibody according to any one of claims 16 to 21, wherein the first and second Fe domains each comprise one or more ablation variants.~~

~~23. The heterodimeric antibody according to claim 22, wherein the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.~~

~~24. The heterodimeric antibody according to any of claims 16 to 23, wherein one of the first or second monomer further comprises a pI variant.~~

~~25. The heterodimeric antibody according to claim 24, wherein the CH1 hinge-CH2-CH3 of the first monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.~~

~~26. The heterodimeric antibody according to any of claims 16 to 25, wherein the CH1 hinge-CH2-CH3 of the first monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, wherein the second Fe domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K,~~

~~and wherein numbering is according to EU numbering.~~

~~27. The heterodimeric antibody according to any one of claims 16 to 28, wherein the first and second variant Fe domains each comprise amino acid variants 428L/434S.~~

~~28. A heterodimeric antibody comprising:~~

- ~~a) a first monomer comprising from N terminal to C terminal, VH1-CH1 first domain linker-scFv-second domain linker-CH2-CH3, wherein VH1 is a first variable heavy domain, scFv is an anti-CD28 scFv, and CH2-CH3 is a first Fe domain;~~
- ~~b) a second monomer comprising from N terminal to C terminal a VH1-CH1 hinge-CH2-CH3, wherein CH2-CH3 is a second Fe domain; and~~

e) a light chain comprising, from N-terminus to C-terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain;

—wherein each of the VH1 domain and the first VL1 domain together form a first antigen binding domain (ABD) and the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), and the VH2 and the VL2 form a second ABD, wherein one of the first and second ABDs bind human CD28 and the other of the first and second ABDs bind a tumor target antigen (TTA).

29. A heterodimeric antibody according to claim 28 wherein the first ABDs bind human CD28 and the second ABD binds a TTA.

30. A heterodimeric antibody according to claim 28 wherein the first ABDs bind a TTA and the second ABD binds human CD28.

31. A heterodimeric antibody according to any of claims 28 to 30 wherein the scFv comprises, from N- to C-terminal, VL2-scFv linker-VH2.

32. A heterodimeric antibody according to any of claims 28 to 30 wherein the scFv comprises, from N- to C-terminal, VH2-scFv linker-VL2.

33. A heterodimeric antibody according to any of claims 28 to 32, wherein the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO:870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID

~~NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.~~

~~34. The heterodimeric antibody according to any of claims 28 to 33, wherein the TTA is human B7H3.~~

~~35. The heterodimeric antibody according to any of claims 28 to 34, wherein the first Fe domain and second Fe domain are each variant Fe domains.~~

~~36. The heterodimeric antibody according to claim 35, wherein the first and second Fe domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering.~~

~~37. The heterodimeric antibody according to claim 36, wherein the first and second Fe domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.~~

~~38. The heterodimeric antibody according to any one of claims 28 to 37, wherein the first and second Fe domains each comprise one or more ablation variants.~~

~~39. The heterodimeric antibody according to claim 38, wherein the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.~~

~~40. The heterodimeric antibody according to any of claims 28 to 39, wherein one of the first or second monomer further comprises a pI variant.~~

~~41. The heterodimeric antibody according to claim 40, wherein the CH1 hinge CH2 CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.~~

~~42. The heterodimeric antibody according to any of claims 28 to 41, wherein the CH1 hinge CH2 CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K,~~

wherein the first Fe domain comprises amino acid variants S364K/E357Q/
E233P/L234V/L235A/G236del/S267K;

— and wherein numbering is according to EU numbering.

43. The heterodimeric antibody according to any one of claims 28 to 42, wherein the first and second variant Fe domains each comprise amino acid variants 428L/434S.

44. A heterodimeric antibody comprising:

— a) a first monomer comprising:

— i) a scFv comprising a first variable heavy domain, an scFv linker and a first variable light domain; and

— ii) a first Fe domain, wherein the scFv is covalently attached to the N terminus of the first Fe domain using a domain linker;

b) a second monomer comprising, from N terminus to C terminus, a VH1-CH1 hinge-CH2-CH3, wherein VH is a first variable heavy domain and CH2-CH3 is a second Fe domain; and

— c) a light chain comprising, from N terminus to C terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain;

— wherein the VH1 and the VL1 together form a first ABD and wherein the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), wherein the VH2 and the VL2 together form a second ABD, and wherein one of the first ABD and second ABD binds CD28 and the other of the first ABD and second ABD binds a TTA.

45. A heterodimeric antibody according to claim 44 wherein the scFv comprises, from N- to C-terminal, VL2-scFv linker-VH2.

46. A heterodimeric antibody according to claim 44 wherein the scFv comprises, from N- to C-terminal, VH2-scFv linker-VL2.

47. A heterodimeric antibody according to any of claims 44 to 46, wherein the second ABD binds to human CD28 wherein the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO: 870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino

acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.

48. The heterodimeric antibody according to any of claims 44 to 47, wherein the first Fc domain and second Fc domain are each variant Fc domains.

49. The heterodimeric antibody according to claim 48, wherein the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K: T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering.

50. The heterodimeric antibody according to claim 49, wherein the first and second Fc domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.

51. The heterodimeric antibody according to any one of claims 44 to 50, wherein the first and second Fc domains each comprise one or more ablation variants.

52. The heterodimeric antibody according to claim 51, wherein the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.

53. The heterodimeric antibody according to any of claims 44 to 52, wherein one of the first or second monomer further comprises a pI variant.

~~54. The heterodimeric antibody according to claim 53, wherein the CH1 hinge-CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.~~

~~55. The heterodimeric antibody according to any of claims 44 to 54, wherein the CH1 hinge-CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K, wherein the first Fc domain comprises amino acid variants S364K/E357Q/E233P/L234V/L235A/G236del/S267K, and wherein numbering is according to EU numbering.~~

~~56. The heterodimeric antibody according to any one of claims 44 to 55, wherein the first and second variant Fc domains each comprise amino acid variants 428L/434S.~~

~~57. A heterodimeric antibody comprising:~~

- ~~a) a first monomer comprising from N terminal to C terminal, VH1-CH1 hinge-CH2-CH3 domain-linker-scFv, wherein VH1 is a first variable heavy domain, scFv is an anti-CD28 scFv, and CH2-CH3 is a first Fc domain;~~
- ~~b) a second monomer comprising from N terminal to C terminal a VH1-CH1 hinge-CH2-CH3, wherein CH2-CH3 is a second Fc domain; and~~
- ~~c) a light chain comprising, from N-terminus to C-terminus, VL1-CL, wherein VL1 is a variable light domain and CL is a constant light domain, wherein each of the VH1 domain and the first VL1 domain together form a first antigen binding domain (ABD) and the scFv comprises a second VH domain (VH2), a scFv linker, and a second VL domain (VL2), and the VH2 and the VL2 together form a second ABD, wherein one of the first and second ABDs bind human CD28 and the other of the first and second ABDs bind a tumor target antigen (TTA).~~

~~58. A heterodimeric antibody according to claim 57, wherein the first ABDs bind human CD28 and the second ABD binds a TTA.~~

~~59. A heterodimeric antibody according to claim 57, wherein the first ABDs bind a TTA and the second ABD binds human CD28.~~

~~60. A heterodimeric antibody according to any of claims 57 to 59, wherein the scFv comprises, from N- to C terminal, VL2-scFv linker-VH2.~~

~~61. A heterodimeric antibody according to any of claims 57 to 59, wherein the scFv comprises, from N- to C terminal, VH2-scFv linker-VL2.~~

62. A heterodimeric antibody according to any of claims 57 to 61, wherein the amino acid sequence of the VH2 is selected from the group consisting of SEQ ID NO:870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635, SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, and SEQ ID NO:651; and wherein the amino acid sequence of the VL2 is selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.

63. The heterodimeric antibody according to any of claims 57 to 62, wherein the TTA is human B7H3.

64. The heterodimeric antibody according to any of claims 57 to 63, wherein the first Fc domain and second Fc domain are each variant Fc domains.

65. The heterodimeric antibody according to claim 64, wherein the first and second Fc domains comprise a set of heterodimerization skew variants selected from the following heterodimerization variants: S364K/E357Q : L368D/K370S; S364K : L368D/K370S; S364K : L368E/K370S; D401K : T411E/K360E/Q362E; and T366W : T366S/L368A/Y407V, wherein numbering is according to EU numbering.

~~66. The heterodimeric antibody according to claim 65, wherein the first and second Fe domains comprise heterodimerization skew variants S364K/E357Q : L368D/K370S.~~

~~67. The heterodimeric antibody according to any one of claims 57 to 66, wherein the first and second Fe domains each comprise one or more ablation variants.~~

~~68. The heterodimeric antibody according to claim 67, wherein the one or more ablation variants are E233P/L234V/L235A/G236del/S267K, wherein numbering is according to EU numbering.~~

~~69. The heterodimeric antibody according to any of claims 57 to 68, wherein one of the first or second monomer further comprises a pI variant.~~

~~70. The heterodimeric antibody according to claim 69, wherein the CH1 hinge CH2-CH3 of the second monomer comprises pI variants N208D/Q295E/N384D/Q418E/N421D, wherein numbering is according to EU numbering.~~

~~71. The heterodimeric antibody according to any of claims 57 to 70, wherein the CH1 hinge CH2-CH3 of the second monomer comprises amino acid variants L368D/K370S/N208D/Q295E/N384D/Q418E/N421D/E233P/L234V/L235A/G236del/S267K,~~

~~wherein the first Fe domain comprises amino acid variants S364K/E357Q/
E233P/L234V/L235A/G236del/S267K,~~

~~and wherein numbering is according to EU numbering.~~

~~72. The heterodimeric antibody according to any one of claims 57 to 71, wherein the first and second variant Fe domains each comprise amino acid variants 428L/434S.~~

1373. A nucleic acid composition comprising:

- a) a first nucleic acid encoding the first monomer of any of claims 1 to 1272;
- b) a second nucleic acid encoding the second monomer of any of claims 1 to 1272;

and

c) a third~~third~~ nucleic acid encoding the light chain of any of claims 1 to 1272,
respectively.

1474. An expression vector composition comprising:

- a) a first expression vector comprising the first nucleic acid of claim 1373;

- b) a second expression vector comprising the second nucleic acid of claim [1373](#); and
- c) a third expression vector comprising the third nucleic acid of claim [1373](#); respectively.

[1575](#). A host cell comprising the expression vector composition of claim [1474](#).

[1676](#). A method of making a heterodimeric antibody according to any of claims 1 to [1272](#) comprising culturing the host cell of claim [1575](#) under conditions wherein the heterodimeric antibody is expressed and recovering the heterodimeric antibody.

~~77. A method of treating cancer in a patient in need thereof, comprising administering to the patient a heterodimeric antibody according to any of claims 1 to 72.~~

~~78. A method of treating cancer in a patient in need thereof, comprising administering to the patient:~~

- ~~a) a heterodimeric antibody according any of claims 1 to 72, wherein the TTA is human B7H3; and~~
- ~~b) a bispecific antibody that binds CD3 and B7H3.~~

~~79. A method of treating cancer in a patient in need thereof, comprising administering to the patient:~~

- ~~a) a heterodimeric antibody according any of claims 1 to 72, wherein the TTA is human B7H3; and~~
- ~~b) a checkpoint inhibitor selected from the group consisting of an anti PD-1 antibody and an anti PD-L1 antibody.~~

~~80. A composition comprising an anti-CD28 ABD comprising:~~

- ~~a) — a variable heavy domain with an amino acid sequence selected from the group consisting of SEQ ID NO: 870, SEQ ID NO:585, SEQ ID NO:586, SEQ ID NO:587, SEQ ID NO:588, SEQ ID NO:589, SEQ ID NO:590, SEQ ID NO:591, SEQ ID NO:592, SEQ ID NO:593, SEQ ID NO:594, SEQ ID NO:595, SEQ ID NO:596, SEQ ID NO:597, SEQ ID NO:598, SEQ ID NO:599, SEQ ID NO:600, SEQ ID NO:601, SEQ ID NO:602, SEQ ID NO:603, SEQ ID NO:604, SEQ ID NO:605, SEQ ID NO:606, SEQ ID NO:607, SEQ ID NO:608, SEQ ID NO:609, SEQ ID NO:610, SEQ ID NO:611, SEQ ID NO:612, SEQ ID NO:613, SEQ ID NO:614, SEQ ID NO:615, SEQ ID NO:616, SEQ ID NO:617, SEQ ID NO:618, SEQ ID NO:619, SEQ ID NO:620, SEQ ID NO:621, SEQ ID NO:622, SEQ ID NO:623, SEQ ID NO:624, SEQ ID NO:1198, SEQ ID NO:1199, SEQ ID NO:625, SEQ ID NO:626, SEQ ID NO:627, SEQ ID NO:628, SEQ ID NO:629, SEQ ID NO:630, SEQ ID NO:631, SEQ ID NO:632, SEQ ID NO:633, SEQ ID NO:634, SEQ ID NO:635,~~

~~SEQ ID NO:636, SEQ ID NO:637, SEQ ID NO:638, SEQ ID NO:639, SEQ ID NO:640, SEQ ID NO:641, SEQ ID NO:642, SEQ ID NO:643, SEQ ID NO:644, SEQ ID NO:645, SEQ ID NO:646, SEQ ID NO:647, SEQ ID NO:648, SEQ ID NO:649, SEQ ID NO:650, SEQ ID NO:651, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:670, SEQ ID NO:671 and SEQ ID NO:672; and~~

~~b) — variable light domain with an amino acid sequence selected from the group consisting of SEQ ID NO:874, SEQ ID NO:652, SEQ ID NO:653, SEQ ID NO:654, SEQ ID NO:655, SEQ ID NO:656, SEQ ID NO:657, SEQ ID NO:658, SEQ ID NO:659, SEQ ID NO:660, SEQ ID NO:661, SEQ ID NO:662, SEQ ID NO:663, SEQ ID NO:664, SEQ ID NO:665, SEQ ID NO:666, SEQ ID NO:667, SEQ ID NO:668, SEQ ID NO:669, SEQ ID NO:670, SEQ ID NO:671, SEQ ID NO:672, SEQ ID NO:673, SEQ ID NO:674, SEQ ID NO:675, SEQ ID NO:676, SEQ ID NO:677, SEQ ID NO:678, SEQ ID NO:679, SEQ ID NO:680, SEQ ID NO:681, SEQ ID NO:682, SEQ ID NO:683, SEQ ID NO:684, SEQ ID NO:685, SEQ ID NO:686, SEQ ID NO:687, SEQ ID NO:688, SEQ ID NO:689, SEQ ID NO:690, SEQ ID NO:691, SEQ ID NO:692, SEQ ID NO:693, SEQ ID NO:694, SEQ ID NO:695, SEQ ID NO:696, SEQ ID NO:697, SEQ ID NO:698, SEQ ID NO:699, SEQ ID NO:700, SEQ ID NO:701, SEQ ID NO:702, SEQ ID NO:703, SEQ ID NO:704, SEQ ID NO:705, SEQ ID NO:706, SEQ ID NO:707, SEQ ID NO:708, SEQ ID NO:709, SEQ ID NO:710, SEQ ID NO:711, SEQ ID NO:712, SEQ ID NO:713, SEQ ID NO:714, SEQ ID NO:715, SEQ ID NO:716, SEQ ID NO:717, SEQ ID NO:718, SEQ ID NO:719, SEQ ID NO:720, SEQ ID NO:721, SEQ ID NO:722, SEQ ID NO:723, SEQ ID NO:724, SEQ ID NO:725, SEQ ID NO:726, SEQ ID NO:727, SEQ ID NO:728, SEQ ID NO:729, SEQ ID NO:730, SEQ ID NO:731, SEQ ID NO:732, SEQ ID NO:733, SEQ ID NO:734, SEQ ID NO:735, SEQ ID NO:736, SEQ ID NO:737, SEQ ID NO:738, SEQ ID NO:739, SEQ ID NO:740, SEQ ID NO:741, SEQ ID NO:742, SEQ ID NO:743, SEQ ID NO:744, SEQ ID NO:745, SEQ ID NO:746, SEQ ID NO:747, SEQ ID NO:748, SEQ ID NO:749, SEQ ID NO:750, SEQ ID NO:751, SEQ ID NO:752, SEQ ID NO:753, SEQ ID NO:754, SEQ ID NO:755, SEQ ID NO:1200 and SEQ ID NO:756.~~

17. A composition comprising a human B7H3 binding domain comprising:

a) a variable heavy domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:942; and

b) a variable light domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:874.

18. The composition of claim 17, wherein the variable heavy domain has the amino acid sequence of SEQ ID NO:942, and the variable light domain has the amino acid sequence of SEQ ID NO:874.

~~81. A composition according to claim 80, wherein the composition is an antibody comprising:~~

~~a) a heavy chain comprising the VH-CH1-hinge-CH2-CH3; and~~

~~b) a light chain comprising the VL-CL.~~

~~82. A composition comprising an anti-B7H3 ABD comprising:~~

a) ~~—— a variable heavy domain with an amino acid sequence selected from the group consisting of SEQ ID NO:518, SEQ ID NO:928, SEQ ID NO:497, SEQ ID NO:498, SEQ ID NO:499, SEQ ID NO:500, SEQ ID NO:501, SEQ ID NO:502, SEQ ID NO:503, SEQ ID NO:504, SEQ ID NO:505, SEQ ID NO:506, SEQ ID NO:507, SEQ ID NO:508, SEQ ID NO:509, SEQ ID NO:510, SEQ ID NO:511, SEQ ID NO:512, SEQ ID NO:513, SEQ ID NO:514, SEQ ID NO:515, SEQ ID NO:516, SEQ ID NO:517, SEQ ID NO:519, SEQ ID NO:520, SEQ ID NO:521, SEQ ID NO:522, SEQ ID NO:523, SEQ ID NO:524, SEQ ID NO:525, SEQ ID NO:526, SEQ ID NO:527, SEQ ID NO:528, SEQ ID NO:529, SEQ ID NO:530, SEQ ID NO:531, SEQ ID NO:532, SEQ ID NO:533, SEQ ID NO:534, SEQ ID NO:535, SEQ ID NO:536, SEQ ID NO:537, SEQ ID NO:538, SEQ ID NO:539, SEQ ID NO:540, SEQ ID NO:541, SEQ ID NO:542, SEQ ID NO:543, SEQ ID NO:544, SEQ ID NO:545, SEQ ID NO:546, SEQ ID NO:547, SEQ ID NO:548, SEQ ID NO:549, SEQ ID NO:550, SEQ ID NO:551, SEQ ID NO:552, SEQ ID NO:553, SEQ ID NO:554, SEQ ID NO:555, SEQ ID NO:556, SEQ ID NO:557, SEQ ID NO:558, SEQ ID NO:559, SEQ ID NO:560, SEQ ID NO:561, SEQ ID NO:562, SEQ ID NO:563, SEQ ID NO:564, SEQ ID NO:565, SEQ ID NO:566, SEQ ID NO:567, SEQ ID NO:568, SEQ ID NO:569, SEQ ID NO:570, SEQ ID NO:571, SEQ ID NO:572, SEQ ID NO:573, SEQ ID NO:574, SEQ ID NO:575, SEQ ID NO:576, SEQ ID NO:577, SEQ ID NO:578, SEQ ID NO:579, SEQ ID NO:580, SEQ ID NO:581, SEQ ID NO:582, SEQ ID NO:583 and SEQ ID NO:584; and~~

b) ~~—— variable light domain having the amino acid sequence selected from the group consisting of SEQ ID NO:874 and SEQ ID NO: 932.~~

~~83. A composition comprising an anti-B7H3 ABD comprising:~~

- ~~a) a variable heavy domain having the amino acid sequence of SEQ ID NO:946; and~~
- ~~b) a variable light domain having the amino acid sequence of SEQ ID NO:950.~~

~~84. A composition comprising an anti B7H3 ABD comprising:~~

- ~~a) a variable heavy domain having the amino acid sequence of SEQ ID NO:956; and~~
- ~~b) a variable light domain having the amino acid sequence of SEQ ID NO:960.~~

~~85. A composition comprising an anti-B7H3 ABD comprising:~~

- ~~a) a variable heavy domain having the amino acid sequence of SEQ ID NO:964; and~~
- ~~b) a variable light domain having the amino acid sequence of SEQ ID NO:968.~~

~~86. —— A composition comprising an anti-B7H3 ABD comprising:~~

- ~~a) a variable heavy domain having the amino acid sequence of SEQ ID NO:972; and~~
- ~~b) a variable light domain having the amino acid sequence of SEQ ID NO:976.~~

~~87. A composition according any one of claims 82-86 wherein the composition is an antibody comprising:~~

- ~~a) a heavy chain comprising the VH linked to CH1 hinge CH2-CH3; and~~
- ~~b) a light chain comprising the VL linked to CL.~~

~~88. A nucleic acid composition comprising:~~

- ~~a) a first nucleic acid encoding the VH of claim 80 or 82; and~~
- ~~b) a second nucleic acid encoding the VL of claim 80 or 82, respectively.~~

~~89. An expression vector composition comprising:~~

- ~~a) a first expression vector comprising the first nucleic acid of claim 88; and~~
- ~~b) a second expression vector comprising the second nucleic acid of claim 88.~~

~~90. A host cell comprising the nucleic acid composition of claim 88 or the expression vector composition of claim 89.~~

~~91. A method of making a composition comprising culturing the host cell of claim 90 under conditions wherein the composition is expressed and recovering the composition.~~

19. A composition comprising a human CD28 binding domain comprising:

- a) a variable heavy domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:585; and
- b) a variable light domain having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:874.

20. The composition of claim 19, wherein the variable heavy domain has the amino acid sequence of SEQ ID NO:585, and the variable light domain has the amino acid sequence of SEQ ID NO:874.