

Claims

1. A single chain antibody construct comprising in an amino to carboxyl order:
 - a first domain which binds to PSMA,
 - a second domain which binds to an extracellular epitope of the human and the *Macaca* CD3ε chain; and
 - a third domain which comprises two Fc monomers, each Fc monomer comprising a hinge, a CH2 domain and a CH3 domain, wherein said two Fc monomers are fused to each other via a peptide linker, wherein said third domain comprises in an amino to carboxyl order:

hinge-CH2-CH3-linker-hinge-CH2-CH3.
2. The antibody construct of claim 1, wherein each of said Fc monomers of the third domain has an amino acid sequence that is at least 90% identical to a sequence selected from the group consisting of SEQ ID NOs: 17-24.
3. The antibody construct of claim 2, wherein each of said Fc monomers of the third domain has an amino acid sequence selected from SEQ ID NOs: 17-24.
4. The antibody construct of claim 3, wherein each of said Fc monomers of the third domain comprises the amino acid sequence of SEQ ID NO: 17.
5. The antibody construct of any one of the preceding claims, wherein the CH2 domain comprises an intra domain cysteine disulfide bridge.
6. The antibody construct of any one of the preceding claims, wherein:
 - (i) the first domain comprises two antibody variable domains and the second domain comprises two antibody variable domains;

(ii) the first domain comprises one antibody variable domain and the second domain comprises two antibody variable domains;

(iii) the first domain comprises two antibody variable domains and the second domain comprises one antibody variable domain; or

(iv) the first domain comprises one antibody variable domain and the second domain comprises one antibody variable domain.

7. The antibody construct of any one of the preceding claims, wherein the first and second domain are fused to the third domain via a peptide linker.

8. The antibody construct of any one of the preceding claims, wherein the antibody construct comprises in an amino to carboxyl order:

(a) the first domain;

(b) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-3;

(c) the second domain;

(d) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, 3, 9, 10, 11 and 12;

(e) the first Fc monomer of the third domain;

(f) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 5, 6, 7 and 8; and

(g) the second Fc monomer of the third domain.

9. The antibody construct according to any one of the preceding claims, wherein the first domain of the antibody construct comprises a VL region comprising CDR-L1, CDR-L2 and CDR-L3, and a VH region comprising CDR-H1, CDR-H2 and CDR-H3 selected from the group consisting of:

- (a) CDR-L1 as depicted in SEQ ID NO: 45, CDR-L2 as depicted in SEQ ID NO: 46, CDR-L3 as depicted in SEQ ID NO: 47, CDR-H1 as depicted in SEQ ID NO: 42, CDR-H2 as depicted in SEQ ID NO: 43, and CDR-H3 as depicted in SEQ ID NO: 44;
- (b) CDR-L1 as depicted in SEQ ID NO: 63, CDR-L2 as depicted in SEQ ID NO: 64, CDR-L3 as depicted in SEQ ID NO: 65, CDR-H1 as depicted in SEQ ID NO: 60, CDR-H2 as depicted in SEQ ID NO: 61, and CDR-H3 as depicted in SEQ ID NO: 62;
- (c) CDR-L1 as depicted in SEQ ID NO: 81, CDR-L2 as depicted in SEQ ID NO: 82, CDR-L3 as depicted in SEQ ID NO: 83, CDR-H1 as depicted in SEQ ID NO: 78, CDR-H2 as depicted in SEQ ID NO: 79, and CDR-H3 as depicted in SEQ ID NO: 80;
- (d) CDR-L1 as depicted in SEQ ID NO: 99, CDR-L2 as depicted in SEQ ID NO: 100, CDR-L3 as depicted in SEQ ID NO: 101, CDR-H1 as depicted in SEQ ID NO: 96, CDR-H2 as depicted in SEQ ID NO: 97, and CDR-H3 as depicted in SEQ ID NO: 98;
- (e) CDR-L1 as depicted in SEQ ID NO: 117, CDR-L2 as depicted in SEQ ID NO: 118, CDR-L3 as depicted in SEQ ID NO: 119, CDR-H1 as depicted in SEQ ID NO: 114, CDR-H2 as depicted in SEQ ID NO: 115, and CDR-H3 as depicted in SEQ ID NO: 116;
- (f) CDR-L1 as depicted in SEQ ID NO: 135, CDR-L2 as depicted in SEQ ID NO: 136, CDR-L3 as depicted in SEQ ID NO: 137, CDR-H1 as depicted in SEQ ID NO: 132, CDR-H2 as depicted in SEQ ID NO: 133, and CDR-H3 as depicted in SEQ ID NO: 134;
- (g) CDR-L1 as depicted in SEQ ID NO: 153, CDR-L2 as depicted in SEQ ID NO: 154, CDR-L3 as depicted in SEQ ID NO: 155, CDR-H1 as depicted in SEQ ID NO: 150, CDR-H2 as depicted in SEQ ID NO: 151, and CDR-H3 as depicted in SEQ ID NO: 152;
- (h) CDR-L1 as depicted in SEQ ID NO: 171, CDR-L2 as depicted in SEQ ID NO: 172, CDR-L3 as depicted in SEQ ID NO: 173, CDR-H1 as depicted in SEQ ID NO: 168, CDR-H2 as depicted in SEQ ID NO: 169, and CDR-H3 as depicted in SEQ ID NO: 170;
- (i) CDR-L1 as depicted in SEQ ID NO: 189, CDR-L2 as depicted in SEQ ID NO: 190, CDR-L3 as depicted in SEQ ID NO: 191, CDR-H1 as depicted in SEQ ID NO: 186, CDR-H2 as depicted in SEQ ID NO: 187, and CDR-H3 as depicted in SEQ ID NO: 188;

- (j) CDR-L1 as depicted in SEQ ID NO: 207, CDR-L2 as depicted in SEQ ID NO: 208 CDR-L3 as depicted in SEQ ID NO: 209, CDR-H1 as depicted in SEQ ID NO: 204, CDR-H2 as depicted in SEQ ID NO: 205, and CDR-H3 as depicted in SEQ ID NO: 206;
- (k) CDR-L1 as depicted in SEQ ID NO: 225, CDR-L2 as depicted in SEQ ID NO: 226 CDR-L3 as depicted in SEQ ID NO: 227, CDR-H1 as depicted in SEQ ID NO: 222, CDR-H2 as depicted in SEQ ID NO: 223, and CDR-H3 as depicted in SEQ ID NO: 224;
- (l) CDR-L1 as depicted in SEQ ID NO: 243, CDR-L2 as depicted in SEQ ID NO: 244 CDR-L3 as depicted in SEQ ID NO: 245, CDR-H1 as depicted in SEQ ID NO: 240, CDR-H2 as depicted in SEQ ID NO: 241, and CDR-H3 as depicted in SEQ ID NO: 242;
- (m) CDR-L1 as depicted in SEQ ID NO: 261, CDR-L2 as depicted in SEQ ID NO: 262 CDR-L3 as depicted in SEQ ID NO: 263, CDR-H1 as depicted in SEQ ID NO: 258, CDR-H2 as depicted in SEQ ID NO: 259, and CDR-H3 as depicted in SEQ ID NO: 260;
- (n) CDR-L1 as depicted in SEQ ID NO: 279, CDR-L2 as depicted in SEQ ID NO: 280 CDR-L3 as depicted in SEQ ID NO: 281, CDR-H1 as depicted in SEQ ID NO: 276, CDR-H2 as depicted in SEQ ID NO: 277, and CDR-H3 as depicted in SEQ ID NO: 278;
- (o) CDR-L1 as depicted in SEQ ID NO: 297, CDR-L2 as depicted in SEQ ID NO: 298, CDR-L3 as depicted in SEQ ID NO: 299, CDR-H1 as depicted in SEQ ID NO: 294, CDR-H2 as depicted in SEQ ID NO: 295, and CDR-H3 as depicted in SEQ ID NO: 296;
- (p) CDR-L1 as depicted in SEQ ID NO: 315, CDR-L2 as depicted in SEQ ID NO: 316, CDR-L3 as depicted in SEQ ID NO: 317, CDR-H1 as depicted in SEQ ID NO: 312, CDR-H2 as depicted in SEQ ID NO: 313, and CDR-H3 as depicted in SEQ ID NO: 314;
- (q) CDR-L1 as depicted in SEQ ID NO: 330, CDR-L2 as depicted in SEQ ID NO: 331, CDR-L3 as depicted in SEQ ID NO: 332, CDR-H1 as depicted in SEQ ID NO: 327, CDR-H2 as depicted in SEQ ID NO: 328, and CDR-H3 as depicted in SEQ ID NO: 329;
- (r) CDR-L1 as depicted in SEQ ID NO: 345, CDR-L2 as depicted in SEQ ID NO: 346, CDR-L3 as depicted in SEQ ID NO: 347, CDR-H1 as depicted in SEQ ID NO: 342, CDR-H2 as depicted in SEQ ID NO: 343, and CDR-H3 as depicted in SEQ ID NO: 344;

- (s) CDR-L1 as depicted in SEQ ID NO: 360, CDR-L2 as depicted in SEQ ID NO: 361, CDR-L3 as depicted in SEQ ID NO: 362, CDR-H1 as depicted in SEQ ID NO: 357, CDR-H2 as depicted in SEQ ID NO: 358, and CDR-H3 as depicted in SEQ ID NO: 359;
 - (t) CDR-L1 as depicted in SEQ ID NO: 375, CDR-L2 as depicted in SEQ ID NO: 376, CDR-L3 as depicted in SEQ ID NO: 377, CDR-H1 as depicted in SEQ ID NO: 372, CDR-H2 as depicted in SEQ ID NO: 373, and CDR-H3 as depicted in SEQ ID NO: 374;
 - (u) CDR-L1 as depicted in SEQ ID NO: 390, CDR-L2 as depicted in SEQ ID NO: 391, CDR-L3 as depicted in SEQ ID NO: 392, CDR-H1 as depicted in SEQ ID NO: 387, CDR-H2 as depicted in SEQ ID NO: 388, and CDR-H3 as depicted in SEQ ID NO: 389;
 - (v) CDR-L1 as depicted in SEQ ID NO: 405, CDR-L2 as depicted in SEQ ID NO: 406, CDR-L3 as depicted in SEQ ID NO: 407, CDR-H1 as depicted in SEQ ID NO: 402, CDR-H2 as depicted in SEQ ID NO: 403, and CDR-H3 as depicted in SEQ ID NO: 404;
 - (w) CDR-L1 as depicted in SEQ ID NO: 420, CDR-L2 as depicted in SEQ ID NO: 421, CDR-L3 as depicted in SEQ ID NO: 422, CDR-H1 as depicted in SEQ ID NO: 417, CDR-H2 as depicted in SEQ ID NO: 418, and CDR-H3 as depicted in SEQ ID NO: 419;
 - (x) CDR-L1 as depicted in SEQ ID NO: 435, CDR-L2 as depicted in SEQ ID NO: 436, CDR-L3 as depicted in SEQ ID NO: 437, CDR-H1 as depicted in SEQ ID NO: 432, CDR-H2 as depicted in SEQ ID NO: 433, and CDR-H3 as depicted in SEQ ID NO: 434;
 - (y) CDR-L1 as depicted in SEQ ID NO: 450, CDR-L2 as depicted in SEQ ID NO: 451, CDR-L3 as depicted in SEQ ID NO: 452, CDR-H1 as depicted in SEQ ID NO: 447, CDR-H2 as depicted in SEQ ID NO: 448, and CDR-H3 as depicted in SEQ ID NO: 449; and
 - (z) CDR-L1 as depicted in SEQ ID NO: 465, CDR-L2 as depicted in SEQ ID NO: 466, CDR-L3 as depicted in SEQ ID NO: 467, CDR-H1 as depicted in SEQ ID NO: 462, CDR-H2 as depicted in SEQ ID NO: 463 and CDR-H3 as depicted in SEQ ID NO: 464.
10. The antibody construct according to any one of the preceding claims, wherein the first domain of the antibody construct comprises a VH region and a VL region selected from the group consisting of:

- (a) a VH region as depicted in SEQ ID NO: 48 and a VL region as depicted in SEQ ID NO: 49;
- (b) a VH region as depicted in SEQ ID NO: 66 and a VL region as depicted in SEQ ID NO: 67;
- (c) a VH region as depicted in SEQ ID NO: 72 and a VL region as depicted in SEQ ID NO: 73;
- (d) a VH region as depicted in SEQ ID NO: 84 and a VL region as depicted in SEQ ID NO: 85;
- (e) a VH region as depicted in SEQ ID NO: 90 and a VL region as depicted in SEQ ID NO: 91;
- (f) a VH region as depicted in SEQ ID NO: 102 and a VL region as depicted in SEQ ID NO: 103;
- (g) a VH region as depicted in SEQ ID NO: 108 and a VL region as depicted in SEQ ID NO: 109;
- (h) a VH region as depicted in SEQ ID NO: 120 and a VL region as depicted in SEQ ID NO: 121;
- (i) a VH region as depicted in SEQ ID NO: 126 and a VL region as depicted in SEQ ID NO: 127;
- (j) a VH region as depicted in SEQ ID NO: 138 and a VL region as depicted in SEQ ID NO: 139;
- (k) a VH region as depicted in SEQ ID NO: 144 and a VL region as depicted in SEQ ID NO: 145;
- (l) a VH region as depicted in SEQ ID NO: 156 and a VL region as depicted in SEQ ID NO: 157;
- (m) a VH region as depicted in SEQ ID NO: 162 and a VL region as depicted in SEQ ID NO: 163;
- (n) a VH region as depicted in SEQ ID NO: 180 and a VL region as depicted in SEQ ID NO: 181;

- (o) a VH region as depicted in SEQ ID NO: 192 and a VL region as depicted in SEQ ID NO: 193;
- (p) a VH region as depicted in SEQ ID NO: 198 and a VL region as depicted in SEQ ID NO: 199;
- (q) a VH region as depicted in SEQ ID NO: 210 and a VL region as depicted in SEQ ID NO: 211;
- (r) a VH region as depicted in SEQ ID NO: 216 and a VL region as depicted in SEQ ID NO: 217;
- (s) a VH region as depicted in SEQ ID NO: 228 and a VL region as depicted in SEQ ID NO: 229;
- (t) a VH region as depicted in SEQ ID NO: 234 and a VL region as depicted in SEQ ID NO: 235;
- (u) a VH region as depicted in SEQ ID NO: 246 and a VL region as depicted in SEQ ID NO: 247;
- (v) a VH region as depicted in SEQ ID NO: 252 and a VL region as depicted in SEQ ID NO: 253;
- (w) a VH region as depicted in SEQ ID NO: 264 and a VL region as depicted in SEQ ID NO: 265;
- (x) a VH region as depicted in SEQ ID NO: 270 and a VL region as depicted in SEQ ID NO: 271;
- (y) a VH region as depicted in SEQ ID NO: 282 and a VL region as depicted in SEQ ID NO: 283;
- (z) a VH region as depicted in SEQ ID NO: 288 and a VL region as depicted in SEQ ID NO: 289;
- (aa) a VH region as depicted in SEQ ID NO: 300 and a VL region as depicted in SEQ ID NO: 301;
- (ab) a VH region as depicted in SEQ ID NO: 306 and a VL region as depicted in SEQ ID NO: 307;

- (ac) a VH region as depicted in SEQ ID NO: 54 and a VL region as depicted in SEQ ID NO: 55;
- (ad) a VH region as depicted in SEQ ID NO: 174 and a VL region as depicted in SEQ ID NO: 175;
- (ae) a VH region as depicted in SEQ ID NO: 318 and a VL region as depicted in SEQ ID NO: 319;
- (af) a VH region as depicted in SEQ ID NO: 333 and a VL region as depicted in SEQ ID NO: 334;
- (ag) a VH region as depicted in SEQ ID NO: 348 and a VL region as depicted in SEQ ID NO: 349;
- (ah) a VH region as depicted in SEQ ID NO: 363 and a VL region as depicted in SEQ ID NO: 364;
- (ai) a VH region as depicted in SEQ ID NO: 378 and a VL region as depicted in SEQ ID NO: 379;
- (aj) a VH region as depicted in SEQ ID NO: 393 and a VL region as depicted in SEQ ID NO: 394;
- (ak) a VH region as depicted in SEQ ID NO: 408 and a VL region as depicted in SEQ ID NO: 409;
- (al) a VH region as depicted in SEQ ID NO: 423 and a VL region as depicted in SEQ ID NO: 424;
- (am) a VH region as depicted in SEQ ID NO: 438 and a VL region as depicted in SEQ ID NO: 439;
- (an) a VH region as depicted in SEQ ID NO: 453 and a VL region as depicted in SEQ ID NO: 454; and
- (ao) a VH region as depicted in SEQ ID NO: 468 and a VL region as depicted in SEQ ID NO: 469.

11. The antibody construct according to any one of the preceding claims, wherein the second domain comprises a VL region comprising CDR-L1, CDR-L2 and CDR-L3 selected from:

- (a) CDR-L1 as depicted in SEQ ID NO: 27 of WO 2008/119567, CDR-L2 as depicted in SEQ ID NO: 28 of WO 2008/119567 and CDR-L3 as depicted in SEQ ID NO: 29 of WO 2008/119567;
- (b) CDR-L1 as depicted in SEQ ID NO: 117 of WO 2008/119567, CDR-L2 as depicted in SEQ ID NO: 118 of WO 2008/119567 and CDR-L3 as depicted in SEQ ID NO: 119 of WO 2008/119567; and
- (c) CDR-L1 as depicted in SEQ ID NO: 153 of WO 2008/119567, CDR-L2 as depicted in SEQ ID NO: 154 of WO 2008/119567 and CDR-L3 as depicted in SEQ ID NO: 155 of WO 2008/119567; and

comprises a VH region comprising CDR-H1, CDR-H2 and CDR-H3 selected from:

- (a) CDR-H1 as depicted in SEQ ID NO: 12 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 13 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 14 of WO 2008/119567;
- (b) CDR-H1 as depicted in SEQ ID NO: 30 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 31 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 32 of WO 2008/119567;
- (c) CDR-H1 as depicted in SEQ ID NO: 48 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 49 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 50 of WO 2008/119567;
- (d) CDR-H1 as depicted in SEQ ID NO: 66 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 67 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 68 of WO 2008/119567;
- (e) CDR-H1 as depicted in SEQ ID NO: 84 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 85 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 86 of WO 2008/119567;

- (f) CDR-H1 as depicted in SEQ ID NO: 102 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 103 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 104 of WO 2008/119567;
 - (g) CDR-H1 as depicted in SEQ ID NO: 120 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 121 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 122 of WO 2008/119567;
 - (h) CDR-H1 as depicted in SEQ ID NO: 138 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 139 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 140 of WO 2008/119567;
 - (i) CDR-H1 as depicted in SEQ ID NO: 156 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 157 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 158 of WO 2008/119567; and
 - (j) CDR-H1 as depicted in SEQ ID NO: 174 of WO 2008/119567, CDR-H2 as depicted in SEQ ID NO: 175 of WO 2008/119567 and CDR-H3 as depicted in SEQ ID NO: 176 of WO 2008/119567.
12. The antibody construct according to any one of the preceding claims, wherein the second domain comprises a VL region and a VH region selected from the group consisting of:
- (a) a VL region as depicted in SEQ ID NO: 17 or 21 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 15 or 19 of WO 2008/119567;
 - (b) a VL region as depicted in SEQ ID NO: 35 or 39 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 33 or 37 of WO 2008/119567;
 - (c) a VL region as depicted in SEQ ID NO: 53 or 57 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 51 or 55 of WO 2008/119567;
 - (d) a VL region as depicted in SEQ ID NO: 71 or 75 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 69 or 73 of WO 2008/119567;
 - (e) a VL region as depicted in SEQ ID NO: 89 or 93 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 87 or 91 of WO 2008/119567;

- (f) a VL region as depicted in SEQ ID NO: 107 or 111 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 105 or 109 of WO 2008/119567;
- (g) a VL region as depicted in SEQ ID NO: 125 or 129 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 123 or 127 of WO 2008/119567;
- (h) a VL region as depicted in SEQ ID NO: 143 or 147 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 141 or 145 of WO 2008/119567;
- (i) a VL region as depicted in SEQ ID NO: 161 or 165 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 159 or 163 of WO 2008/119567; and
- (j) a VL region as depicted in SEQ ID NO: 179 or 183 of WO 2008/119567 and a VH region as depicted in SEQ ID NO: 177 or 181 of WO 2008/119567.

13. The antibody construct of any one of the preceding claims, wherein the antibody construct comprises in an amino to carboxyl order:

(a) the first domain having an amino acid sequence selected from the group consisting of SEQ ID NOs: 50, 56, 68, 74, 86, 92, 104, 110, 122, 128, 140, 146, 158, 164, 176, 182, 194, 200, 212, 218, 230, 236, 248, 254, 266, 272, 284, 290, 302, 308, 320, 335, 350, 365, 380, 395, 410, 425, 440, 455, and 470;

(b) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-3;

(c) the second domain having an amino acid sequence selected from the group consisting of SEQ ID NOs: 23, 25, 41, 43, 59, 61, 77, 79, 95, 97, 113, 115, 131, 133, 149, 151, 167, 169, 185 or 187 of WO 2008/119567 or as depicted in SEQ ID NO: 15;

(d) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, 3, 9, 10, 11 and 12;

(e) the first Fc monomer of the third domain having an amino acid sequence selected from the group consisting of SEQ ID NOs: 17-24;

(f) a peptide linker having an amino acid sequence selected from the group consisting of SEQ ID NOs: 5, 6, 7 and 8; and

(g) the second Fc monomer of the third domain having an amino acid sequence selected from the group consisting of SEQ ID NOs: 17-24.

14. The antibody construct of claim 13, having an amino acid sequence selected from the group consisting of SEQ ID NOs: 52, 53, 58, 59, 70, 71, 76, 77, 88, 89, 94, 95, 106, 107, 112, 113, 124, 125, 130, 131, 142, 143, 148, 149, 160, 161, 166, 167, 178, 179, 184, 185, 196, 197, 202, 203, 214, 215, 220, 221, 232, 233, 238, 239, 250, 251, 256, 257, 268, 269, 274, 275, 286, 287, 292, 293, 304, 305, 310, 311, 322, 323, 325, 326, 337, 338, 340, 341, 352, 353, 355, 356, 367, 368, 370, 371, 382, 383, 385, 386, 397, 398, 400, 401, 412, 413, 415, 416, 427, 428, 430, 431, 442, 443, 445, 446, 457, 458, 460, 461, 472, 473, 475 and 476.

15. The antibody construct of claim 14, comprising the amino acid sequence of SEQ ID NO: 220.

16. The antibody construct of claim 14, comprising the amino acid sequence of SEQ ID NO: 304.

17. The antibody construct of claim 14, comprising the amino acid sequence of SEQ ID NO: 382.

18. A polynucleotide encoding an antibody construct as defined in any one of the preceding claims.

19. A vector comprising the polynucleotide as defined in claim 18.

20. A host cell transformed or transfected with the polynucleotide as defined in claim 18 or with the vector as defined in claim 19.

21. A process for the production of the antibody construct of any one of claims 1 to 17, said process comprising culturing the host cell as defined in claim 20 under conditions allowing the expression of the antibody construct as defined in any one of claims 1 to 17 and recovering the produced antibody construct from the culture.
22. A pharmaceutical composition comprising the antibody construct of any one of claims 1 to 17, or produced according to the process of claim 21.
23. The pharmaceutical composition of claim 22, which is stable for at least four weeks at about -20°C.
24. The antibody construct of any one of claims 1 to 17, or produced according to the process of claim 21, for use in the treatment or amelioration of a disease selected from a proliferative disease, a tumorous disease, cancer or an immunological disorder, wherein said proliferative disease, tumorous disease, cancer and immunological disorder correlate with PSMA expression.
25. The antibody construct for use according to claim 24, wherein the cancer is prostate cancer.
26. Use of the antibody construct of any one of claims 1 to 17 or produced according to the process of claim 21 in the manufacture of a medicament for the treatment or amelioration of a proliferative disease, a tumorous disease, cancer, or an immunological disorder, wherein said proliferative disease, tumorous disease, cancer, and immunological disorder correlate with PSMA expression.
27. The use of claim 26, wherein the cancer is prostate cancer.