

Claims

1. A bispecific antibody construct comprising a first binding domain which binds to human CD70 on the surface of a target cell and a second binding domain which binds to human CD3 on the surface of a T cell, wherein the first binding domain comprises a VH region comprising CDR-H1, CDR-H2 and CDR-H3 and a VL region comprising CDR-L1, CDR-L2 and CDR-L3, wherein said CDR-H1, CDR-H2, CDR-H3, CDR-L1, CDR-L2 and CDR-L3 are selected from the group consisting of those depicted in:
 - 1) SEQ: ID NOs: 1044-1049;
 - 2) SEQ: ID NOs: 1086-1091;
 - 3) SEQ: ID NOs: 1142-1147;
 - 4) SEQ: ID NOs: 1170-1175;
 - 5) SEQ: ID NOs: 1184-1189;
 - 6) SEQ: ID NOs: 1212-1217;
 - 7) SEQ: ID NOs: 1226-1231;
 - 8) SEQ: ID NOs: 1240-1245;
 - 9) SEQ: ID NOs: 1254-1259;
 - 10) SEQ: ID NOs: 1268-1273;
 - 11) SEQ: ID NOs: 1338-1343;
 - 12) SEQ: ID NOs: 1352-1357;
 - 13) SEQ: ID NOs: 1366-1371;
 - 14) SEQ: ID NOs: 1422-1427; and
 - 15) SEQ: ID NOs: 1436-1441.
2. The antibody construct according to claim 1, wherein the first binding domain comprises a VH region selected from the group consisting of those depicted in SEQ ID NO: 1050, SEQ ID NO: 1092, SEQ ID NO: 1148, SEQ ID NO: 1176, SEQ ID NO: 1190, SEQ ID NO: 1218, SEQ ID NO: 1232, SEQ ID NO: 1246, SEQ ID NO: 1260, SEQ ID NO: 1274, SEQ ID NO: 1344, SEQ ID NO: 1358, SEQ ID NO: 1372, SEQ ID NO: 1428, and SEQ ID NO: 1442.
3. The antibody construct according to claim 1 or 2, wherein the first binding domain comprises a VL region selected from the group consisting of those depicted in SEQ ID NO: 1051, SEQ ID NO: 1093, SEQ ID NO: 1149, SEQ ID NO: 1177, SEQ ID NO: 1191,

SEQ ID NO: 1219, SEQ ID NO: 1233, SEQ ID NO: 1247, SEQ ID NO: 1261, SEQ ID NO: 1275, SEQ ID NO: 1345, SEQ ID NO: 1359, SEQ ID NO: 1373, SEQ ID NO: 1429, and SEQ ID NO: 1443.

4. The antibody construct according to any one of the preceding claims, wherein the first binding domain comprises a VH region and a VL region selected from the group consisting of pairs of a VH region and a VL region as depicted in SEQ ID NOs: 1050+1051, SEQ ID NOs: 1092+1093, SEQ ID NOs: 1148+1149, SEQ ID NOs: 1176+1177, SEQ ID NOs: 1190+1191, SEQ ID NOs: 1218+1219, SEQ ID NOs: 1232+1233, SEQ ID NOs: 1246+1247, SEQ ID NOs: 1260+1261, SEQ ID NOs: 1274+1275, SEQ ID NOs: 1344+1345, SEQ ID NOs: 1358+1359, SEQ ID NOs: 1372+1373, SEQ ID NOs: 1428+1429, and SEQ ID NOs: 1442+1443.
5. The antibody construct according to any one of the preceding claims, wherein the first binding domain comprises a polypeptide selected from the group consisting of those depicted in SEQ ID NO: 1052, SEQ ID NO: 1094, SEQ ID NO: 1150, SEQ ID NO: 1178, SEQ ID NO: 1192, SEQ ID NO: 1220, SEQ ID NO: 1234, SEQ ID NO: 1248, SEQ ID NO: 1262, SEQ ID NO: 1276, SEQ ID NO: 1346, SEQ ID NO: 1360, SEQ ID NO: 1374, SEQ ID NO: 1430, and SEQ ID NO: 1444.
6. The antibody construct according to any one of the preceding claims, comprising a polypeptide selected from the group consisting of those depicted in SEQ ID NO: 1053, SEQ ID NO: 1095, SEQ ID NO: 1151, SEQ ID NO: 1179, SEQ ID NO: 1193, SEQ ID NO: 1221, SEQ ID NO: 1235, SEQ ID NO: 1249, SEQ ID NO: 1263, SEQ ID NO: 1277, SEQ ID NO: 1347, SEQ ID NO: 1361, SEQ ID NO: 1375, SEQ ID NO: 1431, and SEQ ID NO: 1445.
7. The antibody construct according to any one of the preceding claims, comprising or consisting of a polypeptide selected from the group consisting of those depicted in SEQ ID NO: 1696, SEQ ID NO: 1702, SEQ ID NO: 1710, SEQ ID NO: 1714, SEQ ID NO: 1716, SEQ ID NO: 1720, SEQ ID NO: 1722, SEQ ID NO: 1724, SEQ ID NO: 1726, SEQ ID NO: 1728, SEQ ID NO: 1738, SEQ ID NO: 1740, SEQ ID NO: 1742, SEQ ID NO: 1750, and SEQ ID NO: 1752.

8. The antibody construct according to any one of the preceding claims, wherein the first binding domain further binds to macaque CD70, preferably to *Macaca fascicularis* CD70.
9. The antibody construct according to any one of the preceding claims, wherein the second binding domain binds to human CD3 epsilon and to *Callithrix jacchus*, *Saguinus Oedipus* or *Saimiri sciureus* CD3 epsilon.
10. The antibody construct according to any one of the preceding claims, wherein the antibody construct is in a format selected from the group consisting of (scFv)₂, scFv-single domain mAb, diabodies and oligomers of the foregoing formats.
11. A polynucleotide encoding an antibody construct as defined in any one of the preceding claims.
12. A vector comprising the polynucleotide as defined in claim 11.
13. A host cell transformed or transfected with the polynucleotide as defined in claim 11 or with the vector as defined in claim 12.
14. A process for the production of an antibody construct according to any one of claims 1 to 10, said process comprising culturing a host cell as defined in claim 13 under conditions allowing the expression of said antibody construct and recovering the produced antibody construct from the culture.
15. A pharmaceutical composition comprising an antibody construct according to any one of claims 1 to 10.
16. The antibody construct according to any one of claims 1 to 10, for use in the prevention, treatment of a tumor or cancer disease or of a metastatic cancer disease.
17. The antibody construct according to claim 16, wherein the tumor or cancer disease is selected from the group consisting of renal, lung, pancreatic, ovarian, breast, colon, head and neck, stomach, rectal, thymic, and brain tumor or cancer, leukemia, lymphoma,

melanoma, Kaposi's Sarcoma, embryonal carcinoma, and a metastatic cancer disease derived from any of the foregoing.

18. A kit comprising an antibody construct according to any one of claims 1 to 10, a polynucleotide as defined in claim 11, a vector as defined in claim 12, and/or a host cell as defined in claim 13.