Claims

1. A complex of

a) bi-specific antibody specific against digoxigenin and a target protein, comprising a first antigen-binding site that binds to digoxigenin and a second antigen-binding site that binds to a target protein, and

b) digoxigenin wherein the digoxigenin is conjugated to a therapeutic or diagnostic agent selected from the group consisting of a peptide, a small ~~compound~~molecule, a radioactively labeled small ~~compound~~molecule, and an imaging reagent, wherein said antigen-binding site specifically binding to digoxigenin comprises as heavy chain variable domain SEQ ID NO 3 with the mutations S49A, I57A and A60P and as light chain variable domain SEQ ID NO 5.

2. The complex according to claim 1, wherein said antigen binding site specifically binding to digoxigenin comprises (i) a humanized heavy chain comprising a heavy chain Fd fragment of SEQ ID NO 36; and (ii) a humanized light chain of SEQ ID NO 37.

~~2.~~3. The complex according to claim 1 or 2 wherein the bispecific antibody comprises

a) a monospecific bivalent antibody consisting of two full length antibody heavy chains and two full length antibody light chains whereby each chain is comprising only one variable domain,

b) two peptide-linkers,

c) two monospecific monovalent single chain antibodies each consisting of an antibody heavy chain variable domain, an antibody light chain variable domain, and a single-chain-linker between said antibody heavy chain variable domain and said antibody light chain variable domain~~;~~.

~~3. The complex according to claim 1 or 2 wherein said antigen-binding site specifically binding to DIG comprises as heavy chain variable domain SEQ ID NO. 3, SEQ ID NO 3 with the mutations S49A, I57A and A60P, or SEQ. ID NO. 2 and as light chain variable domain SEQ ID NO 5 , or SEQ. ID NO. 1.~~

~~4. The complex according to claim 1 to 3 wherein said antigen-binding site specifically binding to DIG comprises as heavy chain Fd-Fragment (VH~~

~~and CH_1) SEQ. ID NO. 4 or SEQ. ID NO. 36, and as L-chain SEQ. ID NO. 6.~~

~~5. The complex according to claim 1 to 4 wherein the antibody is humanized.~~

~~6.~~4. The complex according to claim 1 to ~~5~~ 3 wherein the target protein is a cell surface antigen.

~~7.~~5. The complex according to claim ~~6~~ 4 wherein the cell surface antigen is a tumor antigen.

~~8.~~6. The complex according to claim ~~6~~ 4 wherein the target protein is Her2.

~~9.~~7. The complex according to claim ~~6~~ 4 wherein the target protein is IGF1R.

~~10.~~8. The complex according to claim ~~6~~ 4 wherein the target protein is CD22.

~~11.~~9. The complex according to claim 1 to ~~10~~ 8 wherein the therapeutic or diagnostic agent is a peptide.

~~12.~~10. The complex according to claim 1 to ~~10~~ 8 wherein the therapeutic or diagnostic agent is a ~~is a~~ small ~~compound~~molecule.

~~13.~~11. The complex according to claim ~~12~~ 10 wherein the small ~~compound~~ molecule is radioactively labeled.

~~14.~~12. The complex according to claim 1 to ~~10~~ 8 wherein the therapeutic or diagnostic agent is a imaging reagent.

~~15.~~13. The complex of any of claims 1-~~14~~ 12 for use in the delivery of a therapeutic or diagnostic agent to a target cell or tissue.

~~16.~~14. The complex of any of claims 1-~~14~~12 for targeted cancer therapy.

~~17.~~15. The complex of any of claims 1-~~14~~12 for targeted radiotherapy.

~~18.~~16. Use of the complex of any of claims 1-~~14~~12 for the manufacture of a medicament for targeted cancer therapy.

~~19.~~17. Use of the complex of any of claims 1-~~14~~12 for the manufacture of a medicament for targeted radiotherapy.

~~20.~~18. The complex of any of claims 1-~~14~~12 for use in the imaging of cells or tissues.

~~21.~~19. A composition comprising the complex of any of claims 1-~~14~~12.

~~22.~~20. The composition of claim ~~21~~19 wherein the composition is a diagnostic composition.

~~23.~~21. The composition of claim ~~21~~19 wherein the composition is a pharmaceutical composition.