antigens. In most cases when antigen is provided exogenously, it is not routed to the cytoplasm from where it could be transported to the MHC I pathway.

One methodology to improve the IC50 value for immunoconjugates including peptides that can be presented via MHC I upon processing is suggested in EP 0659439 A1. Here, it is recommended to include a translocation domain in the immunoconjugate in order to rout the immunoconjugate to the cytoplasm via retrotranslocation. However EP 0659439 A1 does not demonstrate results regarding this methodology.

Therefore there is still a need for improved approaches to induce the killing of target cells by inducing cell-mediated immunity.

SUMMARY

The present disclosure relates to an immunoconjugate comprising at least one T cell response eliciting peptide that is presentable via MHC class I coupled to a target cell binding moiety via a cleavable bond. Within the immunoconjugate, the cleavable bond is arranged such that upon cleavage said T cell response eliciting peptide, which is directly presentable via a MHC class I molecule, is released from the immunoconjugate.

The disclosure relates to an immunoconjugate, wherein the T cell response eliciting peptide is a naturally occurring T cell response eliciting peptide.

The disclosure relates to an immunoconjugate, wherein the T cell response eliciting peptide is a naturally occurring T cell response eliciting peptide comprising at least one cysteine residue.

The disclosure relates to an immunoconjugate, wherein the cleavable bond is cleavable within the endosomal compartment of the target cell.

The disclosure relates to an immunoconjugate, wherein the immunoconjugate does not comprise a translocation domain.

The disclosure relates to an immunoconjugate, wherein in less than 12 hours after internalization of the immunoconjugate into the target

cell the T cell response eliciting peptide is presented on the surface of the target cell via an MHC class I molecule.

One aspect of the disclosure is an immunoconjugate comprising at least one naturally occurring T cell response eliciting peptide that is presentable via MHC class I coupled to a target cell binding antibody via a cleavable bond, wherein the cleavable bond is arranged such that upon cleavage said T cell response eliciting peptide, which is directly presentable via a MHC class I molecule, is released from the immunoconjugate, characterized in that the naturally occurring T cell response eliciting peptide comprises at least one cysteine residue and in that the unmodified T cell response eliciting peptide is covalently coupled to the target cell binding antibody via a disulfide bond.

Another aspect of the disclosure is a pharmaceutical composition comprising an immunoconjugate according to the disclosure in combination with a pharmaceutically acceptable carrier.

Another aspect of the disclosure is use of a T cell response eliciting peptide that is presentable via MHC class I for the generation of an immunoconjugate according to the disclosure.

The disclosure relates to the use of an immunoconjugate according to the disclosure for specifically inducing T cell cytotoxicity against the target cell. Another aspect of the disclosure is use of an immunoconjugate according to the disclosure in the manufacture of a medicament for specifically inducing T cell cytotoxicity against the target cell.

Another aspect of the disclosure is a method for the generation of an immunoconjugate according to the disclosure, comprising the steps of

a) providing the recombinant target cell binding moiety,

b) providing the T cell response eliciting peptide, and

c) coupling of at least one of said T cell response eliciting peptide to said target cell binding moiety via the cleavable bond.

One embodiment of the disclosure relates to a method for the generation of an immunoconjugate, wherein an unmodified T cell response eliciting peptide is coupled to the target cell binding moiety.

Another aspect of the disclosure is the immunoconjugate according to the disclosure for use as a medicament.

The disclosure relates to the immunoconjugate according to the disclosure comprising a cancer cell binding moiety, for the treatment of cancer.

The disclosure relates to the immunoconjugate according to the disclosure for use in the treatment of infectious diseases, autoimmune diseases, diabetes or allergy.

The disclosure relates to a method of treatment of a patient suffering from a disease by administering an immunoconjugate according to the disclosure to the patient in the need of such treatment.

Another aspect of the disclosure is use of an immunoconjugate according to the disclosure in the manufacture of a medicament for the treatment of a patient suffering from a disease.

According to the disclosure the T cell response eliciting peptide cleaved from the immunoconjugate can be directly presented via MHC class I molecules without further processing or trimming within the target cell. The T cell response eliciting peptide is cleaved from the immunoconjugate within the endosomal compartment of the target cell upon internalization of the immunoconjugate, and

8. Use of an immunoconjugate according to one of claims 1 to 5 in the manufacture of a medicament for specifically inducing T cell cytotoxicity against the target cell.

9. A method for the generation of an immunoconjugate according to any one of claims 1 to 5, comprising the steps of

a) providing the recombinant target cell binding antibody,
b) providing the T cell response eliciting peptide,
c) coupling of at least one of said T cell response eliciting peptide to said target cell binding antibody via the cleavable bond.

10. The method according to claim 13, wherein an unmodified T cell response eliciting peptide is coupled to the target cell binding antibody.

11. The immunoconjugate according to one of claims 1 to 9 for use as a medicament.

12. Use of an immunoconjugate according to any one of claims 1 to 9 in the manufacture of a medicament for the treatment of a patient suffering from a disease.

13. The use of claim 12, wherein the disease is selected from the group consisting of cancer, infectious diseases, autoimmune diseases, diabetes and allergy.