CLAIMS

1. A chimeric protein having the formula:

Ht1-Ht2-L-Casp

in which Casp is a caspase domain;

Ht1 is a first heterodimerization domain;

Ht2 is a second heterodimerization domain; and

L is a flexible linker

and in which, in the presence of a chemical inducer of dimerization (CID), an identical pair of the chimeric proteins interact such that Ht1 from one chimeric protein heterodimerizes with Ht2 from the other chimeric protein, causing homodimerization of the two caspase domains

in which one heterodimerization domain comprises an FK506-binding protein (FKBP) and the other heterodimerization domain comprises an FRB domain of mTOR,

in which the CID is rapamycin or a rapamycin analog.

2. A chimeric protein according to Claim 1 in which Ht1 does not heterodimerize with Ht2 within the same chimeric protein.

3. A chimeric protein according to Claim 1 or 2, in which the caspase domain comprises an initiator caspase selected from the following group: caspase-8, caspase-9 and caspase-10.

4. A chimeric protein according to Claim 1 or 2, in which the caspase domain comprises an executioner caspase selected from caspase-3 and caspase-7.

5. A chimeric protein according to Claim 1, in which Ht1 comprises FRB and Ht2 comprises FKBP.

6. A nucleic acid sequence which encodes a chimeric protein according to any preceding claim.

7. A nucleic acid construct which comprises one or more nucleic acid sequence(s) according to Claim 6 and a nucleic acid sequence encoding a T-cell receptor (TCR) or chimeric antigen receptor (CAR).

8. A vector which comprises a nucleic acid sequence according to Claim 6 or a nucleic acid construct according to Claim 7.

9. A vector according to Claim 8, which also comprises a nucleotide sequence encoding a chimeric antigen receptor or a T-cell receptor, such that when the vector is used to transduce a target cell, the target cell co-expresses a chimeric protein according to any of Claims 1 to 5 and a chimeric antigen receptor or T-cell receptor.

10. A cell which expresses a chimeric protein according to any of Claims 1 to 5.

11. A cell according to Claim 10, which is a haematopoietic stem cell, a lymphocyte or a T cell.

12. A method for making a cell according to Claim 10 or 11 which comprises the step of transducing or transfecting a cell with a vector according to Claim 8 or 9.

13. Use of a chemical inducer of dimerization (CID) in the preparation of a medicament for preventing and/or treating graft-versus-host disease; on-target, off-tumour toxicity; immune activation syndrome; or lymphoproliferative disorders in a subject caused by administration of a cell according to Claim 11 to the subject, in which the CID is rapamycin or a rapamycin analog.

14. A cell according to Claim 11 for use in a method for preventing or treating a disease in a subject.

15. A cell according to Claim 11 for use in haematopoietic stem cell transplantation, lymphocyte infusion or adoptive cell transfer.