WHAT IS CLAIMED IS:

1. Use of a therapeutically effective dose of cells expressing a chimeric antigen receptor (CAR) in the manufacture of a medicament for treating a lymphoma or myeloma, wherein the therapeutically effective dose of cells is to be administered to a subject in need thereof, and wherein the CAR comprises (i) a D domain that binds to BCMA (B cell maturation antigen) and comprises amino acid residues 21 to 93 of SEQ ID NO:1166 or a sequence having at least 90% sequence to amino acid residues 21 to 93 of SEQ ID NO:1166, and (ii) amino acid residues 94 to 327 of SEQ ID NO:1166.

2. The use according to claim 1, wherein the CAR comprises amino acid residues 21 to 327 of SEQ ID NO:1166.

3. The use according to claim 2, wherein the CAR comprises the amino acid sequence of SEQ ID NO:1166.

4. The use according to any one of claims 1 to 3, wherein the lymphoma or myeloma comprises cells expressing BCMA.

5. The use according to claim 4, wherein the myeloma is multiple myeloma.

6. The use according to any one of claims 1 to 5, wherein the cells are immune effector cells.

7. The use according to claim 6, wherein the cells are T cells or NK cells.

8. The use according to any one of claims 1 to 6, wherein the cells are formulated for intravenous administration or for subcutaneous administration.

9. The use according to any one of claims 1 to 8, wherein between about $20x10^6$ and about $500x10^6$ or between about $50x10^6$ and about $200x10^6$ cells expressing the CAR is to be administered to the subject.

10. The use according to claim 9, wherein about $100x10^6$ cells expressing the CAR is to be administered to the subject.