

**CLAIMS**

1. Use of an antibody that is capable of binding a soluble extracellular domain human CD39 (NTPDase1) protein and inhibiting the ATPase activity thereof in the preparation of a medicament for the treatment of cancer, in which the antibody is to be administered in  
5 combination with a platinum agent.
2. Use according to Claim 1, in which the antibody is capable of causing a decrease in the ATPase activity of the human extracellular domain CD39 protein in solution by more than 70%, in which the antibody inhibits the ATPase activity of the soluble extracellular domain human CD39 protein in the presence of exogenously added ATP, optionally in which added  
10 ATP is at a concentration of 20  $\mu$ M.
3. Use according to Claim 1 or 2, in which the antibody is capable of causing an increase in expression of a cell surface marker of activation in monocyte-derived dendritic cells, when such moDC are incubated *in vitro* with the antibody and ATP, optionally in which exogenously added ATP is provided at 0.125 mM, 0.25 mM or 0.5mM.
- 15 4. Use according to Claim 1, 2 or 3, in which the platinum agent is oxaliplatin, cisplatin, carboplatin, nedaplatin, phenanthriplatin, picoplatin or satraplatin.
5. Use according to any preceding claim, in which the platinum agent is to be administered 1 to 48 hours after the administration of the antibody that is capable of binding and inhibiting the ATPase activity of CD39.
- 20 6. Use according to any preceding claim, in which the cancer is an ovarian cancer.
7. Use according to any preceding claim, in which the cancer is a gastric or esophageal cancer.
8. Use according to any preceding claim, in which the cancer is a lung cancer.
9. Use according to any preceding claim in which the cancer is a colon cancer.
- 25 10. Use according to any preceding claim, in which the cancer is a head and neck cancer.
11. Use according to any preceding claim, in which the cancer is a platinum-resistant cancer.

12. Use according to any preceding claim, in which the antibody substantially lacks binding to human CD16, CD32a, CD32b and/or CD64 polypeptides.

13. Use according to any preceding claim, in which the antibody has reduced binding to:

(a) a mutant CD39 polypeptide comprising the mutations Q96A, N99A, E143A and R147E (with reference to SEQ ID NO: 1);

(b) a mutant CD39 polypeptide comprising the mutations R138A, M139A and E142K (with reference to SEQ ID NO: 1);

(c) a mutant CD39 polypeptide comprising the mutations K87A, E100A and D107A (with reference to SEQ ID NO: 1); and/or

(d) a mutant CD39 polypeptide comprising the mutations N371K, L372K, E375A, K376G and V377S, and an insertion of a valine between residues 376 and 377 (with reference to SEQ ID NO: 1);

in each case, relative to binding between the antibody and a wild-type CD39 polypeptide comprising the amino acid sequence of SEQ ID NO: 1.

14. Use according to any preceding claim, in which the antibody comprises a HCDR1 comprising an amino acid sequence DYNMH (SEQ ID NO: 5); a HCDR2 comprising an amino acid sequence YIVPLNGGSTFNQKFKG (SEQ ID NO: 6); a HCDR3 comprising an amino acid sequence GGTRFAY (SEQ ID NO: 7); a LCDR1 comprising an amino acid sequence RASESVDNFGVSEFMY (SEQ ID NO: 8); a LCDR2 region comprising an amino acid sequence GASNQGS (SEQ ID NO: 9); and a LCDR3 region comprising an amino acid sequence QQTKEVPYT (SEQ ID NO: 10).

15. Use according to any preceding claim, in which the platinum agent is to be administered in a combination regimen comprising a platinum agent, in which the combination regimen comprising a platinum agent comprises folinic acid, 5-Fu and oxaliplatin.

**CLAIMS**

1. Use of an antibody that is capable of binding a soluble extracellular domain human CD39 (NTPDase1) protein and inhibiting the ATPase activity thereof in the preparation of a medicament for the treatment of cancer, in which the antibody is to be administered in  
5 combination with a platinum agent and in which the antibody is to be administered before the platinum agent.
2. Use according to Claim 1, in which the antibody is capable of causing a decrease in the ATPase activity of the human extracellular domain CD39 protein in solution by more than 70%, in which the antibody inhibits the ATPase activity of the soluble extracellular domain  
10 human CD39 protein in the presence of exogenously added ATP, optionally in which added ATP is at a concentration of 20  $\mu$ M.
3. Use according to Claim 1 or 2, in which the antibody is capable of causing an increase in expression of a cell surface marker of activation in monocyte-derived dendritic cells, when such moDC are incubated *in vitro* with the antibody and ATP, optionally in which  
15 exogenously added ATP is provided at 0.125 mM, 0.25 mM or 0.5mM.
4. Use according to Claim 1, 2 or 3, in which the platinum agent is oxaliplatin, cisplatin, carboplatin, nedaplatin, phenanthriplatin, picoplatin or satraplatin.
5. Use according to any preceding claim, in which the platinum agent is to be administered 1 to 48 hours after the administration of the antibody that is capable of binding and inhibiting  
20 the ATPase activity of CD39.
6. Use according to any preceding claim, in which the treatment comprises at least one administration cycle in which at least one dose of the antibody is to be administered and two doses of platinum agent are to be administered, in which the two doses of platinum agent are to be administered at an interval of two weeks or less.
- 25 7. Use according to any preceding claim, in which the cancer is an ovarian cancer.
8. Use according to any preceding claim, in which the cancer is a gastric or esophageal cancer.

9. Use according to any preceding claim, in which the cancer is a lung cancer.
10. Use according to any preceding claim in which the cancer is a colon cancer.
11. Use according to any preceding claim, in which the cancer is a head and neck cancer.
12. Use according to any preceding claim, in which the cancer is a platinum-resistant  
5 cancer.
13. Use according to any preceding claim, in which the antibody lacks binding to human CD16, CD32a, CD32b and/or CD64 polypeptides.
14. Use according to any preceding claim, in which the antibody has reduced binding to:
  - (a) a mutant CD39 polypeptide comprising the mutations Q96A, N99A, E143A and  
10 R147E (with reference to SEQ ID NO: 1);
  - (b) a mutant CD39 polypeptide comprising the mutations R138A, M139A and E142K (with reference to SEQ ID NO: 1);
  - (c) a mutant CD39 polypeptide comprising the mutations K87A, E100A and D107A (with reference to SEQ ID NO: 1); and/or
  - 15 (d) a mutant CD39 polypeptide comprising the mutations N371K, L372K, E375A, K376G and V377S, and an insertion of a valine between residues 376 and 377 (with reference to SEQ ID NO: 1);

in each case, relative to binding between the antibody and a wild-type CD39 polypeptide comprising the amino acid sequence of SEQ ID NO: 1.
- 20 15. Use according to any preceding claim, in which the antibody comprises a HCDR1 comprising an amino acid sequence DYNMH (SEQ ID NO: 5); a HCDR2 comprising an amino acid sequence YIVPLNGGSTFNQKFKG (SEQ ID NO: 6); a HCDR3 comprising an amino acid sequence GGTRFAY (SEQ ID NO: 7); a LCDR1 comprising an amino acid  
25 acid sequence RASESVDNFGVSFMY (SEQ ID NO: 8); a LCDR2 region comprising an amino acid sequence GASNQGS (SEQ ID NO: 9); and a LCDR3 region comprising an amino acid sequence QQTKEVPYT (SEQ ID NO: 10).

16. Use according to any preceding claim, in which the platinum agent is to be administered in a combination regimen comprising a platinum agent, in which the combination regimen comprising a platinum agent comprises folinic acid, 5-Fu and oxaliplatin.