

CLAIMS

1. An antibody that is capable of binding and inhibiting the ATPase activity of human CD39 (NTPDase1) protein, for use in the treatment of cancer, in which the antibody is to be administered in combination with a platinum agent.
- 5 2. An antibody for use according to Claim 1, in which the antibody is capable of binding and inhibiting the ATPase activity of a soluble extracellular domain human CD39 protein, optionally 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
10 in the presence of exogenously added ATP, optionally in which added ATP is at a concentration of 20 μ M.
3. An antibody for use according to Claim 1 or 2, in which an antibody that is capable of binding and inhibiting the ATPase activity of CD39 in the presence of exogenously added ATP antibody is an antibody that is capable of causing an increase in expression of a cell
15 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.
4. An antibody for use according to Claim 1, 2 or 3, in which the platinum agent is oxaliplatin, cisplatin, carboplatin, nedaplatin, phenanthriplatin, picoplatin or satraplatin.
- 20 5. An antibody for 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.
6. An antibody for use according to any preceding claim, in which the cancer is an ovarian cancer.
- 25 7. An antibody for use according to any preceding claim, in which the cancer is a gastric or esophageal cancer.
8. An antibody for use according to any preceding claim, in which the cancer is a lung cancer.

9. An antibody for use according to any preceding claim in which the cancer is a colon cancer.
10. An antibody for use according to any preceding claim, in which the cancer is a head and neck cancer.
- 5 11. An antibody for use according to any preceding claim, in which the cancer is a platinum-resistant cancer.
12. An antibody for use according to any preceding claim, in which an antibody that neutralizes the ATPase activity of CD39 substantially lacks binding to human CD16, CD32a, CD32b and/or CD64 polypeptides.
- 10 13. An antibody for 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
15 (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
20 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. An antibody for 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
25 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 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).

15. An antibody for 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.