25. An antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23 for use in the prevention, prophylaxis and/or treatment of mammals, including humans, against atherosclerosis, an atherosclerotic related disease or ischemic cardiovascular disease.

26. An antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23 for use in the prophylaxis, prevention and/or treatment of Alzheimer's disease.

27. An antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23 for use in the immunization or prophylaxis against, or the prevention or treatment of, metabolic diseases in mammals, including humans.

~~28. A method for prevention, prophylaxis and/or treatment of a mammal, including a human, against atherosclerosis, an atherosclerotic related disease, or ischemic cardiovascular disease, the method comprising the step of administering to the mammal an antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23.~~

~~29. A method for immunization and prophylaxis, prevention and/or treatment of a subject against Alzheimer's disease, the method comprising the step of administering to the subject an antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23.~~

~~30. A method for the immunization or prophylaxis against, or the treatment of, metabolic diseases in a mammal, such as a human, the method comprising the step of administering to the mammal an antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23.~~

~~31.~~28. The antibody or antibody fragment according to any of Claims 1 to 22, or a pharmaceutical composition according to Claim 23 for use according to Claim 27, ~~or the method according to Claim 30,~~ wherein the metabolic disease is a condition selected from the group consisting of metabolic syndrome, insulin resistance, glucose intolerance, hyperglycemia, type I diabetes, type II diabetes, hyperlipidemia,

hypertriglyceridemia, hypercholesterolemia, dyslipidemia, and polycystic ovary syndrome (PCOS).

~~32.~~29. A nucleic acid sequences encoding an antibody or an antibody fragment according to any of Claims 1 to 22.

~~33.~~30. A vector or plasmid comprising the nucleic acid sequence of Claim ~~32~~29.

~~34.~~31. A host cell comprising the nucleic acid sequence of Claim ~~32~~29 and/or a vector or plasmid according to Claim ~~33~~30.

~~35.~~32. The host cell of Claim ~~34~~31 wherein the cell is a prokaryotic cell, such as an *Escherichia coli* cell, or a eukaryotic cell, such as animal, plant, or fungal cell.

~~36.~~33. The host cell of Claims ~~34~~31 or ~~35~~32 which expresses the nucleic acid sequence of Claim ~~32~~29 and thereby produces an antibody or an antibody fragment according to any of Claims 1 to 22.

~~37.~~34. A method of producing an antibody or an antibody fragment according to any of Claims 1 to 22 comprising culturing a host cell according to Claim ~~36~~33, and recovering therefrom an antibody or an antibody fragment according to any of Claims 1 to 22.

~~38.~~35. A method of preparing a variant of the antibody or antibody fragments of according to any of Claims 1 to 22, which variant retains the ability to bind to phosphorylcholine and/or a phosphorylcholine conjugate, the method comprising –

(i) providing a nucleic acid according to Claim ~~32~~29 encoding a parent antibody or antibody fragment;

(ii) introducing one ore more nucleotide mutations into the amino acid coding regions of the nucleic acid sequence, optionally within the regions encoding the VH and/or VL domain(s), such that the mutated nucleic acid encodes a variant antibody or antibody fragment having a different amino acid sequence compared to the parent antibody or antibody fragment;

(iii) expressing the variant antibody or antibody fragment that is encoded by the mutated nucleic acid sequence; and

(iv) comparing the ability of the variant antibody or antibody fragment and the parent antibody or antibody fragment to bind to phosphorylcholine and/or a phosphorylcholine conjugate.

~~39.~~36. The method of Claim ~~38~~35 wherein the step of assessing the ability of the variant antibody or antibody fragment to bind to phosphorylcholine and/or a phosphorylcholine conjugate further comprises selecting those variants that have substantially equal or enhanced ability to bind to phosphorylcholine and/or a phosphorylcholine conjugate compared to the parent.

~~40.~~37. The method of Claim ~~38~~35 or ~~39~~36 further comprising recovering a nucleic acid molecule that comprises the mutated nucleic acid sequence that encodes the variant antibody or antibody fragment, and optionally transforming a host cell with a composition comprising the recovered nucleic acid molecule and further optionally expressing the variant antibody or antibody fragment from the host cell, and yet further optionally recovering the thus-expressed variant antibody or antibody fragment from the host cell.

~~41.~~38. The method of Claim ~~40~~37 that comprises the step of recovering the thus-expressed variant antibody or antibody fragment from the host cell, and further comprises the step of formulating the recovered variant antibody or antibody fragment into a pharmaceutically acceptable composition.

~~42.~~39. A variant antibody or antibody fragment obtained or obtainable by the method of Claim ~~38~~35-~~40~~37, or a pharmaceutically acceptable obtained or obtainable by the method of Claim ~~41~~38 for use in medicine and/or for use in accordance with Claims 25, 26 and/or 27~~ or for use in a method according to any of Claims 29, 30 and/or 31~~.