

Q9A,N11E,N43A; Q9A,N11E,N28A,N43A; Q9A,N11E,Q40V,A42K,N43E,L44I;
Q9A,N11E,Q40V,A42K,N43A,L44I; Q9A,N11E,N28A,Q40V,A42K,N43A,L44I;
N11K,H18K,S33K,D37E,A42R,N43A,L44I,K50R,L51Y;
Q9A,N11K,H18K,S33K,D37E,A42R,N43A,L44I,K50R,L51Y; N11K, H18K, D37E, A42R,
5 N43A, L44I; Q9A, N11K, H18K, D37E, A42R, N43A, L44I and Q9A, N11K, H18K, D37E,
A42R, N43A, L44I, K50R.

25. The polypeptide according to any preceding claim, comprising or consisting essentially of a
sequence selected from the group consisting of: SEQ ID NO 8, SEQ ID NO 9, SEQ ID NO 10,
10 SEQ ID NO 11, SEQ ID NO 12, SEQ ID NO 13, SEQ ID NO 14, SEQ ID NO 15, SEQ ID NO
16, SEQ ID NO 24, SEQ ID NO 29, SEQ ID NO 36, SEQ ID NO 37, and SEQ ID NO 49.

26. The polypeptide according to any preceding claim, comprising or consisting essentially of a
sequence selected from the group consisting of: SEQ ID NO 8, SEQ ID NO 9, SEQ ID NO 10,
15 SEQ ID NO 11, SEQ ID NO 16, SEQ ID NO 24, and SEQ ID NO 29.

27. The polypeptide according to any preceding claim, comprising or consisting essentially of a
sequence selected from the group consisting of: SEQ ID NO 8, SEQ ID NO 9, SEQ ID NO 10,
SEQ ID NO 11, SEQ ID NO 16, and SEQ ID NO 24.

20
28. The polypeptide according to any preceding claim, which polypeptide has an improved
alkaline stability compared to a polypeptide as defined by SEQ ID NO 1, SEQ ID NO 2, SEQ
ID NO 3, SEQ ID NO 4, SEQ ID NO 5, SEQ ID NO 6 or SEQ ID NO 7, such as by SEQ ID NO
7.

25

29. The polypeptide according to claim 28, wherein the alkaline stability is improved as measured by the remaining IgG-binding capacity after 24 or 25 h incubation in 0.5 M or 1.0 M aqueous NaOH at 22 +/- 2 °C.

- 5 30. An Fc-binding polypeptide which comprises a sequence as defined by, or having at least 95% or 98% identity to SEQ ID NO 53.

KEX₁Q X₂AFYEILX₃LP NLTEEQRX₄X₅F IX₆X₇LKDX₈PSX₉ SX₁₀X₁₁X₁₂LAEAKX₁₃
X₁₄NDAQAPK (SEQ ID NO 53)

- 10 wherein individually of each other:

X₁=A or Q

X₂=E, or K

X₃=H or K

X₄=A or N

- 15 X₅=A or G

X₆=Q or E

X₇=S or K

X₈=E or D

X₉=Q or V

- 20 X₁₀=K, R or A

X₁₁=A, E or N

X₁₂=I or L

X₁₃=K or R

X₁₄=L or Y

25

31. A multimer comprising or consisting essentially of a plurality of polypeptides as defined by any preceding claim.

32. The multimer according to claim 31, wherein the polypeptides are linked by linkers

- 30 comprising up to 15 amino acids.

33. The multimer according to claim 31 or 32, which is a dimer, trimer, tetramer, pentamer, hexamer, heptamer, octamer or nonamer.

34. The multimer according to any one of claims 31-33, which comprises or consists essentially
5 of a sequence selected from the group of sequences defined by SEQ ID NO 17, SEQ ID NO 18, SEQ ID NO 19, SEQ ID NO 20, SEQ ID NO 32, SEQ ID NO 33, SEQ ID NO 34 and SEQ ID NO 35.

35. The polypeptide or multimer according to any preceding claim, further comprising at, or
10 within 1-5 amino acid residues from, the C-terminal or N-terminal one or more coupling element, selected from the group consisting of one or more cysteine residues, a plurality of lysine residues and a plurality of histidine residues.

36. A nucleic acid or a vector encoding a polypeptide or multimer according to any preceding
15 claim.

37. An expression system, which comprises a nucleic acid or vector according to claim 36.

38. A separation matrix, wherein a plurality of polypeptides or multimers according to any one
20 of claims 1 – 35 have been coupled to a solid support.

39. The separation matrix according to claim 38, wherein the polypeptides or multimers have been coupled to the solid support via thioether bonds.

25 40. The separation matrix according to claim 38 or 39, wherein the solid support is a polysaccharide.

41. The separation matrix according to any one of claims 38-40, wherein the IgG capacity of the matrix after 24 incubation in 0.5 M NaOH at 22 +/- 2 °C is at least 80, such as at least 85, at
30 least 90 or at least 95% of the IgG capacity before the incubation.

42. The separation matrix according to any one of claims 38-41, wherein the IgG capacity of the matrix after 24 incubation in 1.0 M NaOH at 22 +/- 2 °C is at least 70, such as at least 80 or at least 90% of the IgG capacity before the incubation.

43. A method of isolating an immunoglobulin, wherein a separation matrix according to any one of claims 38-42 is used.

44. The method of claim 43, comprising the steps of:

- 5 a) contacting a liquid sample comprising an immunoglobulin with a separation matrix according to any one of claims 38-42,
- b) washing said separation matrix with a washing liquid,
- c) eluting the immunoglobulin from the separation matrix with an elution liquid, and
- d) cleaning the separation matrix with a cleaning liquid.

10

45. The method of claim 44, wherein the cleaning liquid is alkaline, such as with a pH of 13 – 14.

46. The method of claim 44 or 45, wherein the cleaning liquid comprises 0.1 – 1.0 M NaOH or
15 KOH, such as 0.5 – 1.0 M NaOH or KOH.

47. The method of any one of claims 44 – 46, wherein steps a) – d) are repeated at least 10 times, such as at least 50 times or 50 – 200 times.

20 48. The method of any one of claims 44 – 47, wherein steps a) – c) are repeated at least 10 times, such as at least 50 times or 50 – 200 times and wherein step d) is performed after a plurality of instances of step c), such as at least 10 or at least 50 times.