CLAIMS

1. A polypeptide comprising a FimH lectin domain, wherein the FimH lectin domain comprises an amino acid selected from the group consisting of valine (V), isoleucine (I), leucine (L), glycine (G), methionine (M), and alanine (A) at the position that corresponds to position 144 in SEQ ID NO: 1.

2. A polypeptide according to claim 1, wherein the polypeptide comprises a mutation and wherein the mutation is a F144V substitution.

3. A polypeptide according to claim 1 or 2, wherein the FimH lectin domain has an amino acid sequence having at least 90% sequence identity with SEQ ID NO: 1, preferably wherein the FimH lectin domain comprises SEQ ID NO: 1 wherein the phenylalanine residue at position 144 is substituted by valine.

4. A polypeptide according to any one the preceding claims, wherein the polypeptide further comprises a FimH pilin domain.

5. A polypeptide according to any one of the preceding claims, wherein the polypeptide is a full length FimH having at least 90% sequence identity with SEQ ID NO: 2, preferably wherein the FimH comprises SEQ ID NO: 2 wherein the phenylalanine residue at position 144 is substituted by valine.

6. A complex comprising a polypeptide according to claim 4 or 5 and FimC (FimCH).

7. A polynucleotide encoding the polypeptide of any one of claims 1-5.

8. A pharmaceutical composition comprising a polypeptide according to any one of claims 1-5, a complex according to claim 6, or a polynucleotide according to claim 7.

9. A pharmaceutical composition according to claim 8, wherein the composition further comprises an adjuvant.

10. A polypeptide according to claims 1-5, a complex according to claim 6, a polynucleotide according to claim 7 or a pharmaceutical composition according to claim 8 or 9, for use as a medicament.

11. A polypeptide according to claims 1-5, a complex according to claim 6, a polynucleotide according to claim 7 or a pharmaceutical composition according to claim 8 or 9, for use in inducing an immune response against a bacterium of the family of Enterobacteriaceae.

12. The polypeptide, polynucleotide, complex or pharmaceutical composition for a use according to claim 11, wherein the bacterium is *E.coli* or *Klebsiella*, preferably *E.coli*.

13. A polypeptide according to claims 1-5, a complex according to claim 6, a polynucleotide according to claim 7 or a pharmaceutical composition according to claim 8 or 9, for use in the prevention or treatment of a urinary tract infection caused by *E. coli* in a subject.

14. The polypeptide according to any one of claims 1-5, the complex according to claim 6, the polynucleotide according to claim 7 or the pharmaceutical composition according to claim 8 or 9 for use in the treatment or prevention of an enterobacillus-related condition, wherein an effective amount of the polypeptide, the complex, the polynucleotide or the pharmaceutical composition is to be administered to a subject in need thereof.

15. A vector comprising a polynucleotide according to claim 7.

16. A method for producing a polypeptide comprising a FimH lectin domain, comprising expressing the polypeptide from a recombinant cell containing the polynucleotide of claim 7 and/or the vector of claim 15, optionally the method further comprising recovering and purifying the polypeptide which is optionally followed by formulation into a pharmaceutical composition of the polypeptide.