CLAIMS

1. An isolated or recombinant IL-11Rα-binding protein comprising an antigen binding domain of an antibody, in which the antigen binding domain specifically binds to IL-11Rα and neutralizes IL-11 signaling and the antigen binding domain binds to an epitope comprising residues within the first fibronectin III domain of IL-11Rα, in which the first fibronectin III domain comprises amino acids 111-215 of SEQ ID NO: 1.

2. An IL-11Rα-binding protein according to Claim 1, in which the epitope comprises residues within the immunoglobulin-like domain and the first fibronectin III domain of IL-11Rα, in which the immunoglobulin-like domain comprises amino acids 23-110 of SEQ ID NO: 1.

3. An IL-11Rα-binding protein according to Claim 1, which competitively inhibits binding of antibody 8E2 (comprising a heavy chain comprising a sequence set forth in SEQ ID NO: 83 and a light chain comprising a sequence set forth in SEQ ID NO: 84) and/or antibody 8E4 (comprising a heavy chain comprising a sequence set forth in SEQ ID NO: 92 and a light chain comprising a sequence set forth in SEQ ID NO: 91) and/or antibody 8D10 (comprising a heavy chain comprising a sequence set forth in SEQ ID NO: 94 and a light chain comprising a sequence set forth in SEQ ID NO: 93) to a polypeptide of SEQ ID NO: 3 and/or 85.

4. An IL-11Rα-binding protein according to Claim 1, in which the antigen binding domain specifically binds to IL-11Rα and neutralizes IL-11 signaling and in which the level of binding of the IL-11Rα-binding protein to a polypeptide of SEQ ID NO: 95 is lower than the level of binding of the IL-11Rα-binding protein to a polypeptide of SEQ ID NO: 85.

5. An IL-11Rα-binding protein according to Claim 4, in which the antigen binding domain cross-reacts with:

(i) a polypeptide of SEQ ID NO: 97; and/or

(ii) a polypeptide of SEQ ID NO: 98; and/or

(iii) a polypeptide of SEQ ID NO: 99.

6. An IL-11Rα-binding protein according to Claim 1, in which the antigen binding domain comprises a heavy chain variable region (V_H) and a light chain variable region (V_L), in which:

(i) the V_H comprises a complementarity determining region (CDR) 1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 37 optionally comprising three or fewer amino acid substitutions, a CDR2 comprising a sequence set forth between amino acids 50-66 of SEQ ID NO: 37 optionally comprising four or fewer amino acid substitutions and a CDR3 comprising a sequence set forth between amino acids 99-107 of SEQ ID NO: 37 optionally comprising four or fewer amino acid substitutions and the V_L comprises a CDR1 comprising a sequence set forth between amino acids 24-34 of SEQ ID NO: 5 optionally comprising 6 or fewer amino acid substitutions, a CDR2 comprising a sequence set forth between amino acids 50-56 of SEQ ID NO: 5 and a CDR3 comprising a sequence set forth between amino acids 89-97 of SEQ ID NO: 5 optionally comprising 6 or fewer amino acid substitutions;

(ii) the V_H comprises a complementarity determining region (CDR) 1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 37 optionally comprising three or fewer amino acid substitutions, a CDR2 comprising a set forth between amino acids 50-66 of SEQ ID NO: 37 optionally comprising four or fewer amino acid substitutions and a CDR3 comprising a sequence set forth between amino acids 99-107 of SEQ ID NO: 37 optionally comprising four or fewer amino acid substitutions and the V_L comprises a sequence at least about 94% identical to a sequence set forth in SEQ ID NO: 5;

(iii) the V_H comprises a sequence at least about 95% identical to a sequence set forth in SEQ ID NO: 37 and the V_L comprises a CDR1 comprising a sequence set forth between amino acids 24-34 of SEQ ID NO: 5 optionally comprising 6 or fewer amino acid substitutions, a CDR2 comprising a sequence set forth between amino acids 50-56 of SEQ ID NO: 5 and a CDR3 comprising a sequence set forth between amino acids 89-97 of SEQ ID NO: 5 optionally comprising 6 or fewer amino acid substitutions;

(iv) the V_H comprises a sequence at least about 95% identical to a sequence set forth in SEQ ID NO: 37 and the V_L comprises a sequence at least about 94% identical to a sequence set forth in SEQ ID NO: 5;

(v) the V_H comprises a CDR1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 74, a CDR2 comprising a sequence set forth between amino acids 50-66 of SEQ ID NO: 74 and a CDR3 comprising a sequence set forth between amino acids 99-115 of SEQ ID NO: 74 and the V_L comprises a CDR1 comprising a sequence

set forth between amino acids 23-36 of SEQ ID NO: 73, a CDR2 comprising a sequence set forth between amino acids 52-58 of SEQ ID NO: 73 and a CDR3 comprising a sequence set forth between amino acids 91-101 of SEQ ID NO: 73;

(vi) the V_H comprises a CDR1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 74, a CDR2 comprising a sequence set forth between amino acids 50-66 of SEQ ID NO: 74 and a CDR3 comprising a sequence set forth between amino acids 99-115 of SEQ ID NO: 74 and the V_L comprises a sequence set forth in SEQ ID NO: 73**;**

(vii) the V_H comprises a sequence set forth in SEQ ID NO: 74 and the V_L comprises a CDR1 comprising a sequence set forth between amino acids 23-36 of SEQ ID NO: 73, a CDR2 comprising a sequence set forth between amino acids 52-58 of SEQ ID NO: 73 and a CDR3 comprising a sequence set forth between amino acids 91-101 of SEQ ID NO: 73;

(viii) the V_H comprises a sequence set forth in SEQ ID NO: 74 and the V_L comprises a sequence set forth in SEQ ID NO: 73;

(ix) the V_H comprises a CDR1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 76, a CDR2 comprising a sequence set forth between amino acids 50-66 of SEQ ID NO: 76 and a CDR3 comprising a sequence set forth between amino acids 99-107 of SEQ ID NO: 76 and the V_L comprises a CDR1 comprising a sequence set forth between amino acids 24-34 of SEQ ID NO: 75, a CDR2 comprising a sequence set forth between amino acids 50-57 of SEQ ID NO: 75 and a CDR3 comprising a sequence set forth between amino acids 89-97 of SEQ ID NO: 75;

(x) the V_H comprises a CDR1 comprising a sequence set forth between amino acids 31-35 of SEQ ID NO: 76, a CDR2 comprising a sequence set forth between amino acids 50-66 of SEQ ID NO: 76 and a CDR3 comprising a sequence set forth between amino acids 99-107 of SEQ ID NO: 76 and the V_L comprises a sequence set forth in SEQ ID NO: 75;

(xi) the V_H comprises a sequence set forth in SEQ ID NO: 76 and the V_L comprises a CDR1 comprising a sequence set forth between amino acids 24-34 of SEQ ID NO: 75, a CDR2 comprising a sequence set forth between amino acids 50-57 of SEQ ID NO: 75

and a CDR3 comprising a sequence set forth between amino acids 89-97 of SEQ ID NO: 75; or

(xii) the V_H comprises a sequence set forth in SEQ ID NO: 76 and the V_L comprises a sequence set forth in SEQ ID NO: 75.

7. An IL-11Rα-binding protein according to Claim 6, in which the amino acid substitution(s) in CDR2 of the V_H are between amino acids 54 and 57 of SEQ ID NO: 37 and/or the amino acid substitution(s) of the V_H are within the six N-terminal or the six C-terminal residues of the CDR3 and/or the amino acid substitution(s) in CDR1 of the V_L are within the six C-terminal amino acids of the CDR1 and/or the amino acid substitutions in CDR3 of the V_L are within the the five N-terminal of the CDR3.

8. An IL-11Rα-binding protein according to Claim 6, in which the antigen binding domain comprises a V_H comprising a sequence set forth in SEQ ID NO: 71 and a V_L comprising a sequence set forth in SEQ ID NO: 35.

9. An IL-11Rα-binding protein according to Claim 8, in which the antigen binding domain comprises a V_H comprising a sequence set forth in SEQ ID NO: 72 and a V_L comprising a sequence set forth in SEQ ID NO: 36.

10. An IL-11Rα-binding protein according to Claim 1 in which the antigen binding domain comprises:

(i) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(ii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(iii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 38 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(iv) a V_H comprising a sequence set forth in SEQ ID NO: 38 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(v) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 39 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(vi) a V_H comprising a sequence set forth in SEQ ID NO: 39 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(vii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 40 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(viii) a V_H comprising a sequence set forth in SEQ ID NO: 40 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(ix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 41 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(x) a V_H comprising a sequence set forth in SEQ ID NO: 41 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 42 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xii) a V_H comprising a sequence set forth in SEQ ID NO: 42 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 43 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xiv) a V_H comprising a sequence set forth in SEQ ID NO: 43 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 44 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xvi) a V_H comprising a sequence set forth in SEQ ID NO: 44 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 45 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xviii) a V_H comprising a sequence set forth in SEQ ID NO: 45 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 46 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xx) a V_H comprising a sequence set forth in SEQ ID NO: 46 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 47 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxii) a V_H comprising a sequence set forth in SEQ ID NO: 47 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 48 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxiv) a V_H comprising a sequence set forth in SEQ ID NO: 48 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 49 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxvi) a V_H comprising a sequence set forth in SEQ ID NO: 49 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 50 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxviii) a V_H comprising a sequence set forth in SEQ ID NO: 50 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 51 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxx) a V_H comprising a sequence set forth in SEQ ID NO: 51 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 52 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxxii) a V_H comprising a sequence set forth in SEQ ID NO: 52 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 53 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxxiv) a V_H comprising a sequence set forth in SEQ ID NO: 53 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 54 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxxvi) a V_H comprising a sequence set forth in SEQ ID NO: 54 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 55 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xxxviii) a V_H comprising a sequence set forth in SEQ ID NO: 55 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xxxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 56 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xl) a V_H comprising a sequence set forth in SEQ ID NO: 56 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xli) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 57 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xlii) a V_H comprising a sequence set forth in SEQ ID NO: 57 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xliii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 58 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xliv) a V_H comprising a sequence set forth in SEQ ID NO: 58 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xlv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 59 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xlvi) a V_H comprising a sequence set forth in SEQ ID NO: 59 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xlvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 60 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(xlviii) a V_H comprising a sequence set forth in SEQ ID NO: 60 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(xlix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 61 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(l) a V_H comprising a sequence set forth in SEQ ID NO: 61 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(li) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 62 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lii) a V_H comprising a sequence set forth in SEQ ID NO: 62 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(liii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 63 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(liv) a V_H comprising a sequence set forth in SEQ ID NO: 63 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 64 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lvi) a V_H comprising a sequence set forth in SEQ ID NO: 64 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 65 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lviii) a V_H comprising a sequence set forth in SEQ ID NO: 65 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 66 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lx) a V_H comprising a sequence set forth in SEQ ID NO: 66 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 67 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lxii) a V_H comprising a sequence set forth in SEQ ID NO: 67 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 68 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lxiv) a V_H comprising a sequence set forth in SEQ ID NO: 68 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 69 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lxvi) a V_H comprising a sequence set forth in SEQ ID NO: 69 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 70 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lxviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 70 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(lxx) a V_H comprising a sequence set forth in SEQ ID NO: 70 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(lxxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 6;

(lxxii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 6;

(lxxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 7;

(lxxiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 7;

(lxxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 8;

(lxxvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 8;

(lxxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 9;

(lxxviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 9;

(lxxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 10;

(lxxx) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 10;

(lxxxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 11;

(lxxxii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 11;

(lxxxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 12;

(lxxxiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 12;

(lxxxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 13;

(lxxxvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 13;

(lxxxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 14;

(lxxxviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 14;

(lxxxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 15;

(xc) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 15;

(xci) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 16;

(xcii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 16;

(xciii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 17;

(xciv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 17;

(xcv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 18;

(xcvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 18;

(xcvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 19;

(xcviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 19;

(xcix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 20;

(c) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 20;

(ci) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 21;

(cii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 21;

(ciii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 22;

(civ) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 22;

(cv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 23;

(cvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 23;

(cvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 24;

(cviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 24;

(cix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 25;

(cx) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 25;

(cxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 26;

(cxii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 26;

(cxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 27;

(cxiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 27;

(cxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 28;

(cxvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 28;

(cxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 29;

(cxviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 29;

(cxix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 30;

(cxx) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 30;

(cxxi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 31;

(cxxii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 31;

(cxxiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 32;

(cxxiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 32;

(cxxv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 33;

(cxxvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 33;

(cxxvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 34; or

(cxxviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 34.

11. An IL-11Rα-binding protein according to Claim 1, in which the antigen binding domain comprises:

(i) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 49 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(ii) a V_H comprising a sequence set forth in SEQ ID NO: 49 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(iii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 53 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(iv) a V_H comprising a sequence set forth in SEQ ID NO: 53 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(v) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 57 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(vi) a V_H comprising a sequence set forth in SEQ ID NO: 57 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(vii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 58 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(viii) a V_H comprising a sequence set forth in SEQ ID NO: 58 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(ix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 8;

(x) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 8;

(xi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 15;

(xii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 15;

(xiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 16;

(xiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 16;

(xv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 18;

(xvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 18;

(xvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 29; or

(xviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 29.

12. An IL-11Rα-binding protein according to Claim 1 comprising at least a heavy chain variable region (V_H) and a light chain variable region (V_L), in which the V_H and V_L bind to

form a Fv comprising an antigen binding domain, in which the V_H and the V_L are in a single polypeptide chain or the V_L and V_H are in separate polypeptide chains.

13. An IL-11Rα-binding protein according to Claim 12, in which if the V_H and V_L are in a single polypeptide chain, the protein is:

(i) a single chain Fv fragment (scFv);

(ii) a dimeric scFv (di-scFv);

(iii) one of (i) or (ii) linked to a constant region of an antibody, Fc or a heavy chain constant domain (C_H) 2 and/or C_H3; or

(iv) one of (i) or (ii) linked to a protein that binds to an immune effector cell, or

if the V_H and V_L are in separate polypeptide chains the protein is:

(i) a diabody;

(ii) a triabody;

(iii) a tetrabody;

(iv) a Fab;

(v) a $F(ab')_2$;

(vi) a Fv;

(vii) one of (i) to (vi) linked to a constant region of an antibody, Fc or a heavy chain constant domain (C_H) 2 and/or C_H3;

(viii) one of (i) to (vi) linked to a protein that binds to an immune effector cell; or

(ix) an antibody.

14. An IL-11Rα-binding protein according to Claim 13, which is an antibody comprising:

(i) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 49 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(ii) a V_H comprising a sequence set forth in SEQ ID NO: 49 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(iii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 53 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(iv) a V_H comprising a sequence set forth in SEQ ID NO: 53 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(v) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 57 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(vi) a V_H comprising a sequence set forth in SEQ ID NO: 57 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(vii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 58 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 5;

(viii) a V_H comprising a sequence set forth in SEQ ID NO: 58 and a V_L comprising a sequence set forth in SEQ ID NO: 5;

(ix) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 8;

(x) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 8;

(xi) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 15;

(xii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 15;

(xiii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 16;

(xiv) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 16;

(xv) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 18;

(xvi) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 18;

(xvii) a V_H comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 37 (optionally, also comprising the amino acid N-terminal to CDR1) and a V_L comprising CDRs 1, 2 and 3 of a sequence set forth in SEQ ID NO: 29; or

(xviii) a V_H comprising a sequence set forth in SEQ ID NO: 37 and a V_L comprising a sequence set forth in SEQ ID NO: 29.

15. An IL-11Rα-binding protein according to Claim 1, which is conjugated to another compound.

16. A composition comprising the IL-11Rα-binding protein according to Claim 1 and a pharmaceutically acceptable carrier.

17. A method for detecting IL-11Rα or a cell expressing same in a sample, the method comprising contacting the sample with the IL-11Rα-binding protein according to Claim 1 such that a complex forms and detecting the complex, in which detection of the complex is indicative of IL-11Rα or a cell expressing same in the sample.