properties, for example, increased cartilage tissue penetration, reduced cartilage destruction, reduced synovial proliferation, reduced bone erosion, increased protection against the development of arthritis as measured by arthritic scores and/or histopathology scores, reduced cell infiltration, reduced proteoglycan loss, reduced chondrocyte death, and/or increased TNFα affinity, as compared to a non-low acidic species composition.

In one aspect, there is provided a composition comprising adalimumab, wherein the composition comprises between 1.4% and 6.8% total acidic species of adalimumab, wherein the acidic species of adalimumab correspond to the peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab, wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5), and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm.

In one aspect, there is provided a pre-filled syringe which contains the pharmaceutical composition as described herein.

In one aspect, there is provided a low acidic species composition comprising adalimumab, wherein the composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero C-terminal lysines (Lys 0), and wherein the acidic species of adalimumab are quantified based on the relative area percent of peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm.

In one aspect, there is provided a low acidic species composition comprising adalimumab, wherein the composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero C-terminal lysines (Lys 0), wherein the acidic species of adalimumab have a net negative charge relative to the adalimumab main species and the acidic species comprise species selected from the group consisting of charge variants, structure variants, fragmentation variants and any

combinations thereof; and wherein the acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components.

In one aspect, there is provided a pharmaceutical composition suitable for administration to a subject comprising the composition as described herein and a pharmaceutically acceptable carrier.

In one aspect, there is provided a pharmaceutical composition suitable for administration to a subject comprising 25-100 mg of a low acidic species adalimumab composition,

wherein the low acidic species adalimumab composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero C-terminal lysines (Lys 0), and wherein the acidic species of adalimumab are quantified based on the relative area percent of peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm; and a buffering agent, wherein the pH of the pharmaceutical composition is between 5.0 to 6.5.

In one aspect, there is provided a low acidic species adalimumab pharmaceutical composition suitable for administration to a human subject comprising 40 mg of adalimumab, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6.8% total acidic species of adalimumab, wherein the acidic species of adalimumab have a net negative charge relative to the adalimumab main species and the acidic species comprise species selected from the group consisting of charge variants, structure variants, fragmentation variants and any combinations thereof; wherein the acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components; and wherein said low acidic species adalimumab pharmaceutical composition demonstrates increased cartilage penetration as compared to a non-low acidic species composition of adalimumab; and a pharmaceutically acceptable carrier.

In one aspect, there is provided a pre-filled syringe which contains the pharmaceutical composition as described herein.

In one aspect, there is provided a low acidic species adalimumab pharmaceutical composition suitable for administration to a human subject comprising 40 mg of adalimumab, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6.8% total acidic species of adalimumab, and wherein the acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components and correspond to the peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10 mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10 mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm; and wherein said low acidic species adalimumab pharmaceutical composition demonstrates increased cartilage penetration as compared to a non-low acidic species composition of adalimumab; and a pharmaceutically acceptable carrier.

In one aspect, there is provided a pre-filled syringe which contains the pharmaceutical composition as described herein.

In one aspect, there is provided the use of the pharmaceutical composition as described herein in the manufacture of a medicament for the treatment of a disorder in which TNFα is detrimental, wherein the disorder in which TNFα is detrimental selected from the group consisting of: rheumatoid arthritis (RA), juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, Crohn's Disease, ulcerative colitis, plaque psoriasis, hidradenitis suppurativa (HS), uveitis, active axial spondyloarthritis (active axSpA) and non-radiographic axial spondyloarthritis (nr-axSpA).

Accordingly, in one embodiment, the present disclosure provides a low acidic species (low AR) composition comprising an antibody, or antigen-binding portion thereof, where the composition comprises about 15% or less AR. In one aspect of this embodiment, the low AR composition comprises about 14% or less AR, 13% or less AR, 12% or less AR, 11% or less AR, 10% or less AR, 9% or less AR, 8% or less AR, 7% or less AR, 6% or less AR, 5% or less AR, 4.5% or less AR, 4% or less AR, 3.5% or less AR, 3% or less AR, 2.5% or less AR, 2% or less AR, 1.9% or less AR, 1.8% or less AR, 1.7% or less AR, 1.6% or less AR, 1.5% or less AR, 1.4% or less AR, 1.3% or less AR, 1.2% or less AR, 1.1% or less AR, 1% or less AR, 0.9% or less AR,

0.8% or less AR, 0.7% or less AR, 0.6% or less AR, 0.5% or less AR, 0.4% or less AR, 0.3% or less AR, 0.2% or less AR, 0.1% or less AR, or 0.0% AR, and ranges within one or more of the preceding. In one aspect of this embodiment, the present disclosure provides a low AR composition comprising an antibody, or antigen-binding portion thereof, where the composition comprises about 0.0% to about 10% AR, about 0.0% to about 5% AR, about 0.0% to about 4% AR, about 0.0% to about 3% AR, about 0.0% to about 2% AR, about 3% to about 5% AR, about 5% to about 8% AR, or about 8% to about 10% AR, or about 10% to about 15% AR, and ranges within one or more of the preceding.

In one embodiment, the low AR composition comprises a first acidic species region (AR1) and a second acidic species region (AR2). In one aspect of this embodiment, the low AR composition comprises about 0.1% or less AR1 and about 3% or less AR2, or about 0.0% AR1 and about 1.4% or less AR2. In a related embodiment, the low AR composition comprises about 15% or less AR1, 14% or less AR1, 13% or less AR1, 12% or less AR1, 11% or less AR1, 10% or less AR1, 9% or less AR1, 8% or less AR1, 7% or less AR1, 6% or less AR1, 5% or less AR1, 4.5% or less AR1, 4% or less AR1, 3.5% or less AR1, 3% or less AR1, 2.5% or less AR1, 2% or less AR1, 1.9% or less AR1, 1.8% or less AR1, 1.7% or less AR1, 1.6% or less AR1, 1.5% or less AR1, 1.4% or less AR1, 1.3% or less AR1, 1.2% or less AR1, 1.1% or less AR1, 1% or less AR1, 0.9% or less AR1, 0.8% or less AR1, 0.7% or less AR1, 0.6% or less AR1, 0.5% or less AR1, 0.4% or less AR1, 0.3% or less AR1, 0.2% or less AR1, 0.1% or less AR1, or 0.0% AR1, and ranges within one or more of the preceding. In

CLAIMS

1. A composition comprising adalimumab, wherein the composition comprises between 1.4% and 6.8% total acidic species of adalimumab, wherein the acidic species of adalimumab correspond to the peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab, wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5), and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm.

2. The composition of claim 1, wherein the acidic species of adalimumab comprise a first acidic region (AR1) and a second acidic region (AR2).

3. The composition of claim 1, wherein the composition comprises between 1.4% and 3.8% total acidic species of adalimumab.

4. The composition of claim 2, wherein the composition comprises 0.8% AR1 and 3.0% AR2.

5. The composition of claim 1, wherein the composition comprises between 1.4% and 2.4% total acidic species of adalimumab.

6. The composition of claim 2, wherein the composition comprises 0.2% AR1 and 2.2% AR2.

7. The composition of claim 1, wherein the composition comprises between 4.7% and 6.8% total acidic species of adalimumab.

8. The composition of claim 7, wherein the composition comprises 4.7%, 5.0%, 5.8%, 6.1%, or 6.4% total acidic species of adalimumab.

9. The composition of claim 2, wherein the composition comprises between 0.8% and 1.4% AR1.

10. The composition of claim 2, wherein the composition comprises between 3% and 6.8% AR2.

11. The composition of claim 2, wherein the composition comprises 0% AR1 and 6.8% AR2.

12. The composition of claim 1, wherein the composition further comprises a pharmaceutically acceptable carrier.

13. A pharmaceutical composition comprising adalimumab, suitable for administration to a human subject,

wherein the composition comprises 1.4% and 6.8% total acidic species of adalimumab, wherein the acidic species of adalimumab correspond to the peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab, wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5), and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm;

and a pharmaceutically acceptable carrier.

14. The pharmaceutical composition of claim 13, wherein the acidic species of adalimumab comprise a first acidic region (AR1) and a second acidic region (AR2).

15. The pharmaceutical composition of claim 13, wherein the composition comprises between 1.4% and 3.8% total acidic species of adalimumab.

16. The pharmaceutical composition of claim 14, wherein the composition comprises between 0.8% AR1 and 3.0% AR2.

17. The pharmaceutical composition of claim 13, wherein the composition comprises between 1.4% and 2.4% total acidic species of adalimumab.

18. The pharmaceutical composition of claim 14, wherein the composition comprises 0.2% AR1 and 2.2% AR2.

19. The pharmaceutical composition of claim 13, wherein the composition comprises between 4.7% and 6.8% total acidic species of adalimumab.

20. The pharmaceutical composition of claim 19, wherein the composition comprises 4.7%, 5.0%, 5.8%, 6.1%, or 6.4% total acidic species of adalimumab.

21. The pharmaceutical composition of claim 14, wherein the composition comprises between 0.8% and 1.4% AR1.

22. The pharmaceutical composition of claim 14, wherein the composition comprises between 3% and 9% AR2.

23. The composition of claim 14, wherein the composition comprises 0% AR1 and 6.8% AR2.

24. The composition of any one of claims 1-12, wherein the composition is a lyophilized composition.

25. The pharmaceutical composition of any one of claims 13-24, wherein the composition is a lyophilized composition.

26. The composition of any one of claims 1-2, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

27. The composition of claim 26, wherein the mammalian host cell is selected from the group consisting of a CHO cell, an NSO cell, a COS cell, and an SP2 cell.

28. The composition of claim 27, wherein the mammalian host cell is a CHO cell.

29. The pharmaceutical composition of any one of claims 13-24, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

30. The pharmaceutical composition of claim 29, wherein the mammalian host cell is selected from the group consisting of a CHO cell, an NSO cell, a COS cell, and an SP2 cell.

31. The pharmaceutical composition of claim 30, wherein the mammalian host cell is a CHO cell.

32. The pharmaceutical composition of any one of claims 13-24, wherein adalimumab is present in the pharmaceutical composition at a concentration of 0.1-250 mg/mL.

33. The pharmaceutical composition of any one of claims 13-24, wherein the pharmaceutically acceptable carrier comprises one or more of mannitol, sodium chloride, and polysorbate 80.

34. The pharmaceutical composition of any one of claims 13-24, wherein the pharmaceutically acceptable carrier comprises a buffer.

35. The pharmaceutical composition of claim 34, wherein the buffer is sodium citrate or histidine, or both.

36. A pre-filled syringe which contains the pharmaceutical composition of any one of claims 13-24.

37. A low acidic species composition comprising adalimumab, wherein the composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero C-terminal lysines (Lys 0), and wherein the acidic species of adalimumab are quantified based on the relative area percent of peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm.

38. The composition of claim 37, wherein the acidic species of adalimumab comprise a first acidic region (AR1) and a second acidic region (AR2).

39. The composition of claim 37, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

40. The composition of claim 39, wherein the mammalian host cell is selected from the group consisting of a CHO cell, an NSO cell, a COS cell, and an SP2 cell.

41. The composition of claim 39, wherein the composition comprises 1.4% to 9% acidic species of adalimumab.

42. The composition of claim 39, wherein the composition comprises between 1.4% and 9% or less, between 1.4% and 8%, between 1.4% and 7%, between 1.4% and 6%, between 1.4% and 5%, between 1.4% and 4%, between 1.4% and 3.5%, between 1.4% and 3%, between 1.4% and 2.5%, or between 1.4% and 2% acidic species of adalimumab.

43. A pharmaceutical composition suitable for administration to a subject comprising the composition of claim 64 and a pharmaceutically acceptable carrier.

44. The pharmaceutical composition of claim 43, wherein adalimumab is present in the pharmaceutical composition at a concentration of 25-100 mg/ml.

45. The pharmaceutical composition of claim 43, wherein the pH of the pharmaceutical composition is between 5.0 to 6.5.

46. The pharmaceutical composition of claim 43, wherein the pharmaceutical composition comprises one or more excipient.

47. The pharmaceutical composition of claim 46, wherein the one or more excipient is a buffering agent or a surfactant or a polyol, or a combination thereof.

48. The pharmaceutical composition of claim 47, wherein the pharmaceutical composition comprises the surfactant polysorbate 80.

49. The pharmaceutical composition of claim 47, wherein the pharmaceutical composition comprises an amino acid buffering agent.

50. The pharmaceutical composition of claim 49, wherein the amino acid is histidine.

51. The pharmaceutical composition of claim 47, wherein the pharmaceutical composition comprises the polyol mannitol.

52. A low acidic species composition comprising adalimumab, wherein the composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero C-terminal lysines (Lys 0), wherein the acidic species of adalimumab have a net negative charge relative to the adalimumab main species and the acidic species comprise species selected from the group consisting of charge variants, structure variants, fragmentation variants and any combinations thereof; and wherein the

acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components.

53. The composition of claim 52, wherein the charge variants comprise one or more of deamidation variants, glycation variants, afucosylation variants, methylglyoxal (MGO) variants or citric acid variants, the structure variants comprise one or more of glycosylation variants or acetonation variants, and the fragmentation variants comprise one or more of Fab fragment variants, C-terminal truncation variants or variants missing a heavy chain variable domain.

54. The composition of claim 52, wherein the % acidic species of adalimumab is determined using WCX-10 HPLC wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5), wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm, and wherein the acidic species of adalimumab are quantified based on the relative area percent of peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab.

55. The composition of claim 52, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

56. The composition of claim 55, wherein the composition comprises between 1.4% and 8% acidic species of adalimumab.

57. A pharmaceutical composition suitable for administration to a subject comprising the composition of claim 55 and a pharmaceutically acceptable carrier.

58. The pharmaceutical composition of claim 57, wherein the pharmaceutical composition comprises one or more excipient, wherein the one or more excipient is a buffering agent or a surfactant or a polyol, or a combination thereof.

59. A pharmaceutical composition suitable for administration to a subject comprising 25-100 mg of a low acidic species adalimumab composition,

wherein the low acidic species adalimumab composition comprises less than 10% and greater than 1.4% total acidic species of adalimumab and wherein the composition comprises lysine variant species and less than 75% of the lysine variant species of the composition have zero

C-terminal lysines (Lys 0), and wherein the acidic species of adalimumab are quantified based on the relative area percent of peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm; and a buffering agent, wherein the pH of the pharmaceutical composition is between 5.0 to 6.5.

60. The pharmaceutical composition of claim 59, wherein the low acidic species adalimumab composition comprises 1.4% to 9% acidic species of adalimumab.

61. The pharmaceutical composition of claim 59, wherein the low acidic species adalimumab composition comprises between 1.4% and 8% acidic species of adalimumab.

62. A low acidic species adalimumab pharmaceutical composition suitable for administration to a human subject comprising 40 mg of adalimumab, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6.8% total acidic species of adalimumab, wherein the acidic species of adalimumab have a net negative charge relative to the adalimumab main species and the acidic species comprise species selected from the group consisting of charge variants, structure variants, fragmentation variants and any combinations thereof; wherein the acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components; and wherein said low acidic species adalimumab pharmaceutical composition demonstrates increased cartilage penetration as compared to a non-low acidic species composition of adalimumab; and a pharmaceutically acceptable carrier.

63. The pharmaceutical composition of claim 62, wherein the charge variants comprise one or more of deamidation variants, glycation variants, afucosylation variants, methylglyoxal (MGO) variants or citric acid variants, the structure variants comprise one or more of glycosylation variants or acetonation variants, and the fragmentation variants comprise one or more of Fab fragment variants, C-terminal truncation variants or variants missing a heavy chain variable domain.

64. The pharmaceutical composition of claim 62, wherein the % acidic species of adalimumab is determined using WCX-10 HPLC wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10 mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10 mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm.

65. The pharmaceutical composition of claim 62, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

66. The pharmaceutical composition of claim 65, wherein the mammalian host cell is selected from the group consisting of a CHO cell, an NSO cell, a COS cell, and an SP2 cell.

67. The pharmaceutical composition of claim 66, wherein the mammalian host cell is a CHO cell.

68. The pharmaceutical composition of claim 62, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6.8% acidic species of adalimumab.

69. The pharmaceutical composition of claim 62, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6%, between 1.4% and 5%, between 1.4% and 4%, between 1.4% and 3.5%, between 1.4% and 3%, between 1.4% and 2.5%, or between 1.4% and 2% acidic species of adalimumab.

70. The pharmaceutical composition of claim 62, wherein the pH of the pharmaceutical composition is between 5.0 to 6.5.

71. The pharmaceutical composition of claim 62, wherein the pharmaceutically acceptable carrier is a buffering agent or a surfactant or a polyol, or a combination thereof.

72. The pharmaceutical composition of claim 71, wherein the buffering agent is histidine.

73. The pharmaceutical composition of claim 71, wherein the surfactant is polysorbate 80.

74. The pharmaceutical composition of claim 71, wherein the polyol is mannitol.

75. A pre-filled syringe which contains the pharmaceutical composition of claim 62.

76. A low acidic species adalimumab pharmaceutical composition suitable for administration to a human subject comprising 40 mg of adalimumab, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6.8% total acidic species of adalimumab, and wherein the acidic species of adalimumab do not include process-related impurities comprising host cell proteins, host cell nucleic acids, chromatographic materials and media components and correspond to the peaks that elute earlier than the main peak in a WCX-10 HPLC chromatogram of adalimumab wherein the WCX-10 HPLC chromatogram is generated using a first mobile phase of 10 mM Sodium Phosphate dibasic (pH 7.5) and a second mobile phase of 10 mM Sodium Phosphate dibasic, 500 mM Sodium Chloride (pH 5.5) and wherein the WCX-10 HPLC chromatogram is generated using detection at 280 nm; and wherein said low acidic species adalimumab pharmaceutical composition demonstrates increased cartilage penetration as compared to a non-low acidic species composition of adalimumab; and a pharmaceutically acceptable carrier.

77. The pharmaceutical composition of claim 76, wherein the acidic species of adalimumab comprise a first acidic region (AR1) and a second acidic region (AR2).

78. The pharmaceutical composition of claim 77, wherein the first acidic region (AR1) and the second acidic region (AR2) comprise charge variants selected from the group consisting of deamidation variants, glycation variants, afucosylation variants, methylglyoxal (MGO) variants and citric acid variants; structure variants selected from the group consisting of glycosylation variants and acetonation variants; and fragmentation variants selected from the group consisting of Fab fragment variants, C-terminal truncation variants and variants missing a heavy chain variable domain.

79. The pharmaceutical composition of claim 76, wherein the adalimumab is produced in a mammalian host cell grown in cell culture.

80. The pharmaceutical composition of claim 79, wherein the mammalian host cell is selected from the group consisting of a CHO cell, an NSO cell, a COS cell, and an SP2 cell.

81. The pharmaceutical composition of claim 80, wherein the mammalian host cell is a CHO cell.

82. The pharmaceutical composition of claim 76, wherein the low acidic species adalimumab pharmaceutical composition comprises between 1.4% and 6%, between 1.4% and 5%, between 1.4% and 4%, between 1.4% and 3.5%, between 1.4% and 3%, between 1.4% and 2.5%, or between 1.4% and 2% acidic species of adalimumab.

83. The pharmaceutical composition of claim 76, wherein the pH of the pharmaceutical composition is between 5.0 to 6.5.

84. The pharmaceutical composition of claim 76, wherein the pharmaceutically acceptable carrier is a buffering agent or a surfactant or a polyol, or a combination thereof.

85. The pharmaceutical composition of claim 84, wherein the buffering agent is histidine.

86. The pharmaceutical composition of claim 84, wherein the surfactant is polysorbate 80.

87. The pharmaceutical composition of claim 84, wherein the polyol is mannitol.

88. A pre-filled syringe which contains the pharmaceutical composition of claim 76.

89. Use of the pharmaceutical composition of any one of claims 13, 43, 57, 59, 62 or 76 in the manufacture of a medicament for the treatment of a disorder in which TNFα is detrimental, wherein the disorder in which TNFα is detrimental selected from the group consisting of: rheumatoid arthritis (RA), juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, Crohn's Disease, ulcerative colitis, plaque psoriasis, hidradenitis suppurativa (HS), uveitis, active axial spondyloarthritis (active axSpA) and non-radiographic axial spondyloarthritis (nr-axSpA).