CLAIMS

1. A multi component buffer system for the purification of proteins by a series of chromatography steps, where the modes of chromatography comprise affinity chromatography, and wherein the modes of chromatography are operated in either bind-elute mode or flow-through mode, where the multi component buffer system comprises an organic acid, an alkaline metal or ammonium salt of the conjugate base of the organic acid, and an organic base and wherein the modes of chromatography are performed using buffers that are made without the addition of NaCl.

2. The system of claim 1, wherein the affinity chromatography is performed using a superantigen immobilized on a solid phase.

3. The system of claim 2 wherein the superantigen is selected from the group consisting of Protein A, Protein G, and Protein L.

4. The system of any preceding claim, wherein: (a) the organic acid is selected from the group consisting of formic acid, acetic acid, lactic acid, citric acid, malic acid, maleic acid, glycine, glycylclycine, succinic acid, TES (2-{[tris(hydroxymethyl)methyl]amino}ethanesulfonic acid), MOPS (3-(N-morpholino)propanesulfonic acid), PIPES (piperazine-N,N′-bis(2-ethanesulfonic acid)), and MES (2-(N-morpholino)ethanesulfonic acid);

(b) the organic base is selected from the group consisting of tris base, Bis-Tris, Bis-Tris-Propane, Bicine (N,N-bis(2-hydroxyethyl)glycine), HEPES (4-2-hydroxyethyl-1-piperazineethanesulfonic acid), TAPS (3-{[tris(hydroxymethyl)methyl]amino}propanesulfonic acid), and Tricine (N-tris(hydroxymethyl)methylglycine); or

(c) the conjugate base of the organic acid is the sodium, potassium, or ammonium salt of the conjugate base of the organic acid.

5. The system of any preceding claim wherein:
(a) the organic acid is acetic acid;

CLAIMS

1. A multi component buffer system for the purification of proteins by a series of chromatography steps, wherein the modes of chromatography consist of affinity chromatography and further comprise anion exchange chromatography, cation exchange chromatography, and/or mixed-mode chromatography, and wherein the modes of chromatography are operated in either bind-elute mode or flow-through mode, where the multi component buffer system comprises an organic acid, an alkaline metal or ammonium salt of the conjugate base of the organic acid, and an organic base and wherein the modes of chromatography are performed using buffers that are made without the addition of NaCl.

2. The system of claim 1, wherein the affinity chromatography is performed using a superantigen immobilized on a solid phase.

3. The system of claim 2 wherein the superantigen is selected from the group consisting of Protein A, Protein G, and Protein L.

4. The system of any preceding claim, wherein: (a) the organic acid is selected from the group consisting of formic acid, acetic acid, lactic acid, citric acid, malic acid, maleic acid, glycine, glycylclycine, succinic acid, TES (2-{[tris(hydroxymethyl)methyl]amino}ethanesulfonic acid), MOPS (3-(N-morpholino)propanesulfonic acid), PIPES (piperazine-N,N′-bis(2-ethanesulfonic acid)), and MES (2-(N-morpholino)ethanesulfonic acid);

(b) the organic base is selected from the group consisting of tris base, Bis-Tris, Bis-Tris-Propane, Bicine (N,N-bis(2-hydroxyethyl)glycine), HEPES (4-2-hydroxyethyl-1-piperazineethanesulfonic acid), TAPS (3-{[tris(hydroxymethyl)methyl]amino}propanesulfonic acid), and Tricine (N-tris(hydroxymethyl)methylglycine); or

(c) the conjugate base of the organic acid is the sodium, potassium, or ammonium salt of the conjugate base of the organic acid.

5. The system of any preceding claim wherein:
(a) the organic acid is acetic acid;