[0018a] In one example, there is disclosed use of a composition comprising:

a botulinum toxin, and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups,

wherein the botulinum toxin is not covalently modified and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for use in treatment of:

(a) symptoms associated with urological disorders;

(b) symptoms associated with subjective or clinical hyperhidrosis;

(c) symptoms associated with subjective or clinical dystonic contractions or dystonia;

(d) symptoms associated with muscle spasm;

(e) symptoms associated with migraine headache

(f) symptoms associated with acne;

(g) symptoms associated with mucous secretion;

(h) symptoms associated with obesity;

(i) symptoms associated with inflammation;

(j) symptoms associated with psoriasis;

(k) snoring;

(l) cutaneous symptoms associated with diabetes;

(m) wound healing;

(n) symptoms associated autonomic nerve dysfunction;

(o) symptoms associated with cerebral palsy;

(p) symptoms associated with Hashimoto's thyroiditis;

(q) symptoms associated with mammary gland disorders

(r) altering hair growth;

(s) symptoms associated with parathyroid disorders;

(t) symptoms associated with movement disorders;

(u) symptoms associated with parkinson's disease;

(v) symptoms associated with tremors;

(w) symptoms associated with epilepsy;

(x) symptoms associated with inner ear disorders;

(y) symptoms associated with cholinergic-controlled secretions;

(z) symptoms associated with neurophychiatric disorders;

(aa) symptoms associated with injured muscles;

(bb) symptoms associated with ear disorders;

(cc) symptoms associated with cancer;

(dd) symptoms associated with nerve entrapment disorders; or

(ee) symptoms associated with hypercalcemia.

[0018b] In one aspect, there is provided use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating, preventing, or reducing symptoms associated with subjective or clinical hyperhidrosis in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

[0018c] In one example, there is disclosed use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating, preventing, or reducing the severity of fine lines and/or wrinkles in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

[0018d] In one example, there is disclosed use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating urologic disorder in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

[0018e] In one example, there is disclosed use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating neurologic pain; migraine headache pain or other headache pain; or relieving muscle spasm-related pain in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

[0018f] In one example, there is disclosed use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for enhancing or reducing an immune response. In one aspect, the present invention refers to non-therapeutic use of a composition comprising: a botulinum toxin; and a positively charged carrier

comprising a positively charged polymeric backbone having attached positively charged efficiency groups; wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate; for preventing, or reducing the severity of fine lines and/or wrinkles in a subject in need thereof, wherein the composition is to be topically applied to the skin or epithelium of the subject. In another aspect, the present invention refers to use of a composition comprising: a botulinum toxin; and a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups; wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate; in the manufacture of a medicament for treating bladder dysfunction or spasm in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject. In yet another aspect, the present invention refers to use of a composition comprising: a botulinum toxin; and a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups; wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate; in the manufacture of a medicament for treating neurologic pain; or preventing or reducing migraine headache pain or other headache pain; or relieving muscle spasm-related pain in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the affected area of the subject.

WHAT IS CLAIMED IS:

1. Use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating, preventing, or reducing symptoms associated with subjective or clinical hyperhidrosis in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

2. Non-therapeutic use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

for preventing, or reducing the severity of fine lines and/or wrinkles in a subject in need thereof, wherein the composition is to be topically applied to the skin or epithelium of the subject.

3. Use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating bladder dysfunction or spasm in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the subject.

4. Use of a composition comprising:

a botulinum toxin; and

a positively charged carrier comprising a positively charged polymeric backbone having attached positively charged efficiency groups;

wherein the botulinum toxin is not covalently modified, and wherein the positively charged carrier and the botulinum toxin non-covalently and directly associate;

in the manufacture of a medicament for treating neurologic pain; or preventing or reducing migraine headache pain or other headache pain; or relieving muscle spasm-related pain in a subject in need thereof, wherein the medicament is to be topically applied to the skin or epithelium of the affected area of the subject.

5. The use of a composition according to any one of claims 1-4, wherein the one or more positively charged efficiency groups is selected from:

$-(gly)_{n1}-(arg)_{n2}$ (SEQ ID NO. 1) in which the subscript n1 is an integer of from 0 to 20, and the subscript n2 is independently an odd integer of from 5 to 25;

Antennapedia PTD and fragments thereof retaining Antennapedia PTD activity; HIV-TAT; and

fragments of HIV-TAT having the amino acid sequences $(gly)_p$-RGRDDRRQRRR-$(gly)_q$ (SEQ ID NO. 2), $(gly)_p$-YGRKKRRQRRR-$(gly)_q$ (SEQ ID NO. 3), or $(gly)_p$-RKKRRQRRR-$(gly)_q$ (SEQ ID NO. 4) wherein the subscripts p and q are each independently an integer selected from a range of 0 to 20; a range of 0 to 8; or a range of 2 to 5.

6. The use of a composition according to claim 5, wherein the one or more positively charged efficiency groups are $-(gly)_{n1}-(arg)_{n2}$ (SEQ ID NO. 1) in which the subscript n1 is an integer of from 0 to 20 and the subscript n2 is independently an odd integer of from 5 to 25.

7. The use of a composition according to claim 6, wherein the subscript n1 is an integer of from 0 to 8.

8. The use of a composition according to claim 6, wherein the subscript n1 is an integer of from 2 to 5.

9. The use of a composition according to claim 6, wherein the subscript n2 is an odd integer of from 7 to 17.

10. The use of a composition according to claim 6, wherein the subscript n2 is an odd integer from 7 to 13.

11. The use of a composition according to claim 5, wherein the one or more positively charged efficiency groups are selected from $(gly)_p$-RGRDDRRQRRR-$(gly)_q$ (SEQ ID NO. 2), $(gly)_p$-YGRKKRRQRRR-$(gly)_q$ (SEQ ID NO. 3), or $(gly)_p$-RKKRRQRRR-$(gly)_q$ (SEQ ID NO. 4), wherein the subscripts p and q are each independently an integer of from 0 to 20.

12. The use of a composition according to claim 11, $(gly)_p$-RKKRRQRRR-$(gly)_q$ (SEQ ID NO. 4), wherein the subscripts p and q are each independently an integer of from 0 to 20.

13. The use of a composition according to any one of claims 1-4, wherein the botulinum toxin is selected from botulinum toxin serotypes A, B, C, D, E, F and G or comprises a recombinant botulinum toxin or comprises a fusion protein.

14. The use of a composition according to claim 13, wherein the botulinum toxin is botulinum toxin A.

15. The use of a composition according to any one of claims 1-4, wherein the positively charged efficiency groups comprise at least 0.05 % by weight of the total carrier weight.

16. The use of a composition according to claim 15, wherein the positively charged efficiency groups comprise from 0.5% to 45% by weight of the total carrier weight.

17. The use of a composition according to claim 16, wherein the positively charged efficiency groups comprise from 0.1% to 30% by weight of the total carrier weight.

18. The use of a composition according to any one of claims 1-4, wherein the backbone comprises a positively charged polypeptide.

19. The use of a composition according to claim 18, wherein the positively charged polypeptide is polylysine.

20. The use of a composition according to claim 19, wherein the polylysine has a molecular weight from 10,000 to 1,500,000.

21. The use of a composition according to any one of claims 1-4, wherein the backbone comprises a positively charged nonpeptidyl carrier.

22. The use of a composition according to claim 21, wherein the positively charged nonpeptidyl carrier is a polyalkyleneimine.

23. The use of a composition according to claim 22, wherein the positively charged nonpeptidyl carrier is a polyethyleneimine.

24. The use of a composition according to claim 23, wherein the polyethyleneimine has a molecular weight from 10,000 to 2,500,000.

25. The use of a composition according to any one of claims 1-4, wherein the composition is suitable for topical application to the skin or epithelium having a pH of from 4.5 to 6.3, wherein the composition is optionally a controlled release composition, a liquid composition, cream, lotion, ointment or a gel composition, or a pharmaceutical composition or a cosmetic composition.

26. The use of a composition according to claim 25, wherein the composition is stable when stored at room temperature or under refrigerated conditions.

27. The use of a composition according to claim 25, wherein the composition is formulated to have a controlled release.

28. The use of a composition according to claim 25, wherein the composition is a liquid.

29. The use of a composition according to claim 25, wherein the composition is a gel.

30. The use of a composition according to claim 25, wherein the composition is a cream, lotion or ointment.

31. The use of a composition according to claim 25, the composition further comprising saline or saline and a pH buffer system.

32. The use of a composition according to any one of claims 1-4, wherein the one or more positively charged efficiency groups comprises $(gly)_p$-RKKRRQRRR-$(gly)_q$ (SEQ ID NO. 4), wherein the botulinum toxin is botulinum toxin A, wherein the backbone comprises a positively charged polylysine having a molecular weight from 10,000 to 1,500,000 and wherein the composition is suitable for topical application to the skin or epithelium having a pH of from 4.5 to 6.3.