SUMMARY

[0004a] In one aspect, provided herein is a composition comprising: a carrier molecule; and a biologically active molecule, wherein the carrier is non-covalently associated with the biologically active molecule in one of a micelle and a liposome, wherein the carrier molecule comprises one of palmitoylgly$_p$-KKRPKPG (SEQ ID NO: 5), octanoyl-gly$_p$-KKRPKPG (SEQ ID NO: 6), oleyl-gly$_p$KKRPKPG (SEQ ID NO: 7) and any combinations thereof or wherein the carrier molecule is selected from the group consisting of FFFIL VF-gly$_p$-KKRPKPG (SEQ ID NO: 1), FL VFFF-gly$_p$-KKRPKPG (SEQ ID NO: 2), KKRPKPG -gly$_p$- FL VFFF (SEQ ID NO: 3) and any combination thereof, where p is an integer from 0 to 10.

[0004b] In another aspect, provided herein is a kit for administration of a botulinum toxin to a patient, the kit comprising: a botulinum toxin; an effective amount for transdermal delivery thereof of a carrier molecule; a pH buffer system adapted to maintain pH between 4.0 to 8.3; and a device comprising the botulinum toxin, the carrier molecule, and the pH buffer system, the device adapted to administer the botulinum toxin to a patient via the patient's skin; wherein the carrier molecule is non-covalently associated with the botulinum toxin in one of a micelle and a liposome; and wherein one of the device, the carrier molecule, the pH buffer system, and any combination thereof are adapted to provide a controlled release of the botulinum toxin, and wherein the carrier molecule comprises one of palmitoylgly$_p$-KKRPKPG (SEQ ID NO: 5), octanoyl-gly$_p$-KKRPKPG (SEQ ID NO: 6), oleyl-gly$_p$KKRPKPG (SEQ ID NO: 7) and any combinations thereof or wherein the carrier molecule is selected from the group consisting of FFFIL VF-gly$_p$-KKRPKPG (SEQ ID NO: 1), FL VFFF-gly$_p$KKRPKPG (SEQ ID NO: 2),

KKRPKPG -gly$_p$- FL VFFF (SEQ ID NO: 3) and any combination thereof, where p is an integer from 0 to 10.

[0005] Implementations of compositions may include: a carrier molecule including at least one cell penetrating peptide (CPP) where the carrier molecule may include at least one hydrophobic domain where the carrier is non-covalently associated with a biologically active molecule in one of a micelle and a liposome.

[0006] Implementations of compositions may include one, all, or any of the following:

[0007] The carrier molecule may be amphiphilic.

[0008] The carrier molecule may include at least one carbohydrate moiety.

[0009] The carrier molecule may include at least one alkyl chain.

[0010] The carrier molecule may include at least three hydrophobic amino acids.

[0011] The carrier molecule may include at least one phenylalanine.

[0012] The carrier molecule may include palmitoyl-gly$_p$-KKRPKPG (SEQ ID NO: 5), octanoyl-gly$_p$-KKRPKPG (SEQ ID NO: 6), oleyl-gly$_p$-KKRPKPG (SEQ ID NO: 7) or any combination thereof, where p is an integer from 0 to 20.

[0013] The carrier molecule may be selected from the group consisting of FFFILVF-gly$_p$-KKRPKPG (SEQ ID NO: 1), FLVFFF-gly$_p$-KKRPKPG (SEQ ID NO: 2), KKRPKPG -gly$_p$- FLVFFF (SEQ ID NO: 3), or any combination thereof, where p is an integer from 0 to 10.

[0014] The at least one CPP may be selected from the group consisting of an HIV-TAT fragment selected from the group consisting of a fragment that has the formula (gly)$_p$-RGRDDRRQRRR-(gly)$_q$ (SEQ ID NO: 8), a fragment that has the formula (gly)$_p$-YGRKKRRQRRR-(gly)$_q$ (SEQ ID NO: 9), a fragment that has the formula (gly)$_p$-RKKRRQRRR-(gly)$_q$ (SEQ ID NO: 10), wherein the subscripts p and q are each