CLAIMS

1. A method of controlling pain comprising transdermally administering to a canine in need thereof a therapeutically effective amount of a composition comprising fentanyl, a penetration enhancer, and a volatile liquid,

wherein the composition is a solution.

2. The method of claim 1 wherein the transdermal administration is applied to a dorsal location of the canine.

3. The method of claim 1 wherein the transdermal administration is applied to a ventral location of the canine.

4. A method of controlling pain comprising transdermally administering to a canine in need thereof a therapeutically effective amount of a composition comprising fentanyl, a penetration enhancer, and a volatile liquid,

wherein the composition is in a solution, and

wherein the transdermal administration is applied to a dorsal location of the canine.

5. The method of claim 1 wherein the composition is administered as a single dose.

6. The method of claim 1 wherein the pain is controlled for an effective period of time.

7. The method of claim 6 wherein the effective period of time is about 96 hours.

8. A method of treating pain comprising transdermally administering to a canine in need of treatment a therapeutically effective amount of a composition comprising fentanyl, a penetration enhancer, and a volatile liquid,

wherein the composition is administered as a single dose, and

wherein the single dose is effective for the treatment of pain for about 96 hours.

9. The method of claim 8 wherein the transdermal administration is applied to a dorsal location of the canine.

10. The method of claim 8 wherein the transdermal administration is applied to a ventral location of the canine.

11. The method of claim 1 wherein the penetration enhancer is octyl salicylate.

12. The method of claim 1 wherein the volatile liquid is isopropanol.

13. The method of claim 1 wherein the pain is associated with a surgery performed or to be performed on the canine.

14. The method of claim 13 wherein the surgery is an orthopedic surgery.

15. The method of claim 13 wherein the surgery is a soft tissue surgery.

16. The method of claim 13 wherein the composition is administered to the canine about 2 to about 4 hours prior to the surgery.

17. The method of claim 16 wherein the composition is administered as a single dose.

18. The method of claim 1 wherein the composition is administered as a single unit dose.

19. The method of claim 1 wherein the composition comprises about 0.1 to about 10% (w/v) of fentanyl, about 0.1 to about 10% (w/v) of the penetration enhancer, and about 80 to about 99.8% (w/v) of the volatile liquid.

20. The method of claim 1 wherein the composition comprises about 3 to about 7% (w/v) of fentanyl, about 3 to about 7% (w/v) of the penetration enhancer, and about 86 to about 94% (w/v) of the volatile liquid.

21. The method of claim 1 wherein the composition comprises about 5% (w/v) of fentanyl, about 5% (w/v) of the penetration enhancer, and about 90% (w/v) of the volatile liquid.

22. The method of claim 21 wherein the penetration enhancer is octyl salicylate and the volatile liquid is isopropanol.

23. The method of claim 1 wherein the fentanyl is at a dose of about 0.1 to about 10 mg/kg of weight of the canine.

24. The method of claim 1 wherein the fentanyl is at a dose of about 1 to about 5 mg/kg of weight of the canine.

25. The method of claim 1 wherein the fentanyl is at a dose of about 2.7 mg/kg of weight of the canine.

26. The method of claim 1 wherein the composition is administered with one or more other therapeutic ingredients.

27. The method of claim 1 wherein the composition is administered using a transdermal dispensing apparatus.

28. A single dose transdermal formulation comprising a therapeutically effective amount of a composition in solution, wherein the composition comprises

fentanyl,

a penetration enhancer selected from the group consisting of long chain alkyl para-aminobenzoate, long chain alkyl dimethyl-para-aminobenzoate, long chain alkyl cinnamate, long chain alkyl methoxycinnamate, long chain alkyl salicylate, octyl dimethyl-para-aminobenzoate, octyl para-methoxycinnamate, octyl salicylate, or mixtures thereof, and

a volatile liquid selected from the group consisting of ethanol, ethyl acetate, isopropanol, acetone, ethyl formate, methanol, methyl acetate, methyl ethyl ketone, pentan, chloroform, or mixtures thereof.

29. The formulation of claim 28 suitable for administration at a dose of about 0.1 to about 10 mg of fentanyl per kg of canine body weight.

30. The formulation of claim 28 suitable for administration at a dose of about 1 to about 5 mg of fentanyl per kg of canine body weight.

31. The formulation of claim 28 suitable for administration at a dose of about 2.7 mg of fentanyl per kg of canine body weight.

32. The formulation of claim 28 which is administered once every at least 72 hours.

33. The formulation of claim 28 which is administered once every at least 96 hours.

CLAIMS

1. Use of a composition comprising fentanyl, a penetration enhancer, and a volatile liquid in the manufacture of a medicament for controlling pain in a canine for an effective period of time, wherein the medicament is a solution and the medicament is to be administered transdermally to a dorsal interscapular or ventral location of the canine.

2. The use of claim 1, wherein the effective period of time is at least about 96 hours.

3. The use of claim 1 or claim 2, wherein the penetration enhancer is octyl salicylate and the volatile liquid is isopropanol.

4. The use of any of claims 1-3, wherein the pain is associated with a surgery performed or to be performed on the canine.

5. The use of any of claims 1-4, wherein the composition comprises about 3 to about 7% (w/v) of fentanyl, about 3 to about 7% (w/v) of the penetration enhancer, and about 86 to about 94% (w/v) of the volatile liquid.

6. The use of any of claims 1-5, wherein the fentanyl is to be administered at a dose of about 1 to about 5 mg/kg of weight of the canine.

7. A single dose transdermal solution formulation for use on a canine comprising a therapeutically effective amount of fentanyl,

a penetration enhancer selected from the group consisting of long chain alkyl para-aminobenzoate, long chain alkyl dimethyl-para-aminobenzoate, long chain alkyl cinnamate, long chain alkyl methoxycinnamate, long chain alkyl salicylate, octyl dimethyl-para-aminobenzoate, octyl para-methoxycinnamate, octyl salicylate, or mixtures thereof, and

a volatile liquid selected from the group consisting of ethanol, ethyl acetate, isopropanol, acetone, ethyl formate, methanol, methyl acetate, methyl ethyl ketone, pentan, chloroform, or mixtures thereof, wherein said formulation provides control of pain for at least 96 hours and is suitable for administrating a dose of about 1 to about 5 mg of fentanyl per kg of canine body weight.

8. The formulation of claim 7, comprising about 3 to about 7% (w/v) of fentanyl, about 3 to about 7% (w/v) of the penetration enhancer, and about 86 to about 94% (w/v) of the volatile liquid.

9. The formulation of claim 7 or claim 8, wherein said formulation comprises about 50 mg of fentanyl per ml of formulation.

10. The formulation of any of claims 7-9, wherein the single dose of formulation is set forth below based on the kilograms of body weight of the canine:

Dose (mL)	Kilograms of body weight
0.2	3.0 to 4.2
0.3	4.3 to 6.1
0.4	6.2 to 8.0
0.5	8.1 to 9.9
0.6	10.0 to 11.7
0.7	11.8 to 13.6
0.8	13.7 to 15.5
0.9	15.6 to 17.4
1.0	17.5 to 19.3
1.1	19.4 to 21.2
1.2	21.3 to 23.1
1.3	23.2 to 25.0
1.4	25.1 to 26.9
1.5	27.0 to 28.8
1.6	28.9 to 30.6

1.7	30.7 to 32.5
1.8	32.6 to 34.4
1.9	34.5 to 36.3
2.0	36.4 to 38.2
2.1	38.3 to 40.1
2.2	40.2 to 42.0
2.3	42.1 to 43.9
2.4	44.0 to 45.8
2.5	45.9 to 47.7
2.6	47.8 to 49.6
2.7	49.7 to 51.4
2.8	51.5 to 53.3
2.9	53.4 to 55.2
3.0	55.3 to 57.0