CLAIMS

WE CLAIM:

1. A pharmaceutical composition, comprising:

a plurality of microparticles, each microparticle including:

(1) one or more crystals of a local anesthetic agent; and

(2) a polyvinyl alcohol (PVA) coating fully encapsulating the one or more crystals, wherein the PVA coating is at least 85% hydrolyzed and is 1-30 wt% of the microparticle, and wherein the one or more crystals of the local anesthetic agent is 70-99 wt% of the microparticle and each has at least one dimension in a range of 35-500 μm.

2. The pharmaceutical composition of claim 1 wherein the PVA coating is at least 99% hydrolyzed.

3. The pharmaceutical composition of claim 1 or claim 2 wherein the PVA coating is crosslinked.

4. The pharmaceutical composition of any one of claims 1-3 wherein the PVA coating is thermally cured and physically crosslinked.

5. The pharmaceutical composition of claim 4 wherein the thermal curing takes place at 100-135°C for 2-8 hours.

6. The pharmaceutical composition of any one of claims 1-3 wherein the PVA coating is chemically crosslinked in the presence of a crosslinking agent.

7. The pharmaceutical composition of claim 6 wherein the PVA coating comprises less than 5% by weight of the crosslinking agent.

8. The pharmaceutical composition of claim 6 or claim 7 wherein the crosslinking agent is citric acid.

9. The pharmaceutical composition of any one of claims 1-8 wherein the PVA coating has a molecular weight of 2-200 kDa, or preferably 140-190 kDa.

10. The pharmaceutical composition of any one of claims 1-8 wherein the local anesthetic agent has a dissolution rate of at least 5 times, or 7 times, or 10 times slower than that of the local anesthetic agent, when uncoated, in a same dissolution medium.

11. The pharmaceutical composition of any one of claims 1-10 wherein the local anesthetic agent is an aminoamide drug.

12. The pharmaceutical composition of any one of claims 1-11 wherein the local anesthetic agent comprises more than one crystals bound by a therapeutically inactive agent.

13. The pharmaceutical composition of any one of claims 1-12 wherein the local anesthetic agent is ropivacaine.

14. The pharmaceutical composition of any one of claims 1-13 for use in managing postsurgical pain at a wound site.

15. The pharmaceutical composition for use of claim 14 wherein the local anesthetic agent is sustained released for 3-5 days post-surgery.