

We claim:

1. An ocular injection assembly comprising a sleeve and a needle, wherein the needle can be set within the sleeve, a clamping port is provided at the end of the sleeve, and the tip portion of the needle can pass through the clamping port, and wherein when the ocular injection assembly is used, the clamping port is contacted with and pressed against ocular tissues at the site of the injection to cause the ocular tissues at the site of the injection to protrude into the sleeve, wherein the clamping port has a minimum inner diameter of 1 mm-3 mm.

2. The ocular injection assembly according to claim 1, wherein the end of the sleeve is a constricted section and the clamping port is located at the end of the constricted section; the constricted section has a cross-sectional size that is progressively larger in a direction away from the clamping port.

3. The ocular injection assembly according to claim 1, wherein the side wall of the sleeve is provided with an observation window of transparent material, or the sleeve is a transparent material sleeve, preferably the observation window or the transparent material sleeve is provided with a volume scale along the axial direction of the sleeve.

4. The ocular injection assembly according to claim 1, wherein the needle tip portion has a blade length less than or equal to 1100 micrometers, preferably less than or equal to 900 micrometers, further preferably less than or equal to 700 micrometers, further preferably less than or equal to 550 micrometers, further preferably of 250-550 micrometers, more preferably of 400-550 micrometers.

5. The ocular injection assembly according to claim 1, wherein the needle, when mated with the sleeve, extends with its tip portion outside the clamping port for 500-2000 micrometers; preferably the length of the tip portion of the needle outside the clamping port facilitates delivery of the medicament into the suprachoroidal space.

6. The ocular injection assembly according to any one of claims 1-5, wherein a needle hub is attached to the needle at an end opposite to the tip portion, and the sleeve and the needle hub are provided with an adjusting assembly for adjusting the length of the tip portion beyond the clamping port.

7. The ocular injection assembly according to any of claims 1-5, wherein a needle hub is connected to the rear end of the sleeve; the needle hub is provided with an adjustment assembly comprising a telescopic rod assembly and a drive mechanism;

the telescoping rod assembly comprises an outer tube and an inner tube, one end of the outer tube is connected to the rear end of the needle hub and the other end is sheathed on the inner tube, and the other end of the inner tube is connected to the rear end of the needle; and the outer tube, the inner tube, and the needle are sequentially connected, or, the rear end of the needle passes sequentially through the inner and the outer tubes and beyond the outer tube; and

the drive mechanism is connected to the inner tube to drive the inner tube axially relative to the outer tube, and the inner tube is capable of moving the needle.

8. The ocular injection assembly according to any one of claims 1-5, wherein a needle hub

is connected to the rear end of the sleeve, and a release assembly comprising a resilient member and a first stop member is provided between the sleeve and the needle hub; the sleeve is connected to the needle hub via the resilient member;

one end of the first stop member is detachably connected to the sleeve and/or the other end of the first stop member is detachably connected to the needle hub;

when the first stop member is connected to the sleeve and the needle hub, the resilient member is in a tensile state, capable of providing tension along the axial axis.

9. The ocular injection assembly according to any one of claims 1-8, wherein the chamber within the sleeve forms a hermetically sealed chamber when the clamping port is sealed.

10. An ocular injection device comprising a syringe, and an ocular injection assembly as claimed in any one of claims 1-8 being mountable on the syringe.

11. The ocular injection device according to claim 10, wherein the syringe comprises a medication container and a pushrod, the pushrod being capable of sliding within the medication container, the medication container being used for storing a medicinal solution, and the medication container being cooperatively connected to the needle.

12. The ocular injection device according to claim 11, wherein a thrust assembly is provided between the end of the pushrod and the medication container to apply a constant thrust at the pushrod.

13. The ocular injection device according to claim 12, wherein the thrust assembly produces a constant thrust with a threshold value of no more than 6N.

14. The ocular injection device according to claim 13, further comprising a second stop member provided between the pushrod and the medication container to limit the pushing stroke of the pushrod.