

CLAIMS

1. A pump device operable with a syringe having a barrel and a plunger, the pump device being operable to cause relative movement between the syringe plunger and the syringe barrel for discharging fluid from the syringe, the pump device comprising a portion adapted to engage the syringe barrel, and a drive mechanism for moving the syringe plunger relative to the barrel to discharge fluid from the syringe, the drive mechanism comprising an actuator adapted to engage the plunger and a power mechanism for moving the actuator to effect movement of the syringe plunger relative to the barrel.
2. The pump device according to claim 1, wherein the power mechanism has a first condition which it assumes when not in operation and a second condition from which it is operable to move the syringe plunger relative to the barrel.
3. The pump device according to claim 2, wherein the power mechanism is adapted to be energising upon movement from the first condition to the second condition.
4. The pump device according to claim 2 or 3, wherein the power mechanism is movable from the first condition to the second condition upon installation of the syringe on the syringe pump.
5. The pump device according to any one of the preceding claims, wherein the actuator comprises a piston movable along a path.
6. The pump device according to claim 5, wherein the piston is adapted for guided movement along the path.
7. The pump device according to any one of the preceding claims, wherein the power mechanism comprises at least one spring mechanism operable to exert a spring force on the actuator.
8. The pump device according to claim 7, wherein the power mechanism comprises two spring mechanisms.

9. The pump device according to claim 8, wherein the two spring mechanisms are disposed on opposed sides of the path along which actuator is movable.
10. The pump device according to claim 7, 8 or 9, wherein the at least one spring mechanism comprise a reel, a spring adapted to be tensioned upon winding of the reel in one direction, and a flexible link extending between the reel and the actuator, the flexible link being windable onto and from the reel, the reel being wound in said one direction to cause tensioning of the spring upon winding of the flexible link from the reel, whereby the tensioned spring biases the reel to cause rotation thereof in the opposite direction.
11. The pump device according to claim 10, wherein the spring comprise a constant force spring operable to deliver a constant spring force when under load.
12. The pump device according to claim 10 or 11, wherein there are two spring mechanisms disposed on opposed sides of the path along which actuator is movable, and wherein the two flexible links are coupled to a base portion of the actuator.
13. The pump device according to any one of the preceding claims, wherein said portion adapted to engage the syringe barrel comprises an engaging means for releasably engaging an end section of the barrel from which the plunger extends.
14. The pump device according to claim 13, wherein the engaging means comprises a receptor in which the end section of the barrel is releasably receivable.
15. The pump device according to claim 14, wherein the receptor is configured as a socket formation for operation in conjunction with the end section of the barrel to provide a connection therebetween.
16. The pump device according to claim 15, wherein the socket formation is configured to provide a bayonet connection.

17. The pump device according to claim 16, wherein the receptor is configured to define two bayonet slots adapted for engagement with two bayonet pins on the syringe barrel, the bayonet pins comprising opposed lugs against which the user can locate fingers of a hand in which the syringe is being held to restrain the syringe barrel while pushing the syringe plunger with the thumb of that hand.
18. The pump device according to any one of claims 14 to 17, further comprising a body defining a cavity in which the actuator is accommodated, the cavity defining the path along which the actuator is movable, the receptor being provided adjacent one end of the cavity whereby the syringe plunger is receivable in the cavity for engagement with the actuator when the end section of the barrel is received in the receptor.
19. The pump device according to claim 18, wherein the cavity comprises a passage configured to define a barrel portion along which the actuator is guidingly movable.
20. A pump device operable with a syringe having a syringe barrel and a syringe plunger, the pump device being operable to cause relative movement between the syringe plunger and the syringe barrel for discharging fluid from the syringe, the pump device comprising a portion adapted to engage the syringe barrel, and a drive mechanism for moving the syringe plunger relative to the barrel to discharge fluid from the syringe, said portion adapted to engage the syringe barrel comprising a receptor configured for operation in conjunction with an end section of the syringe barrel to provide a releasable connection therebetween.
21. The pump device according to claim 20, wherein the releasable connection comprises a bayonet connection.
22. The pump device according to any one of the preceding claims, further comprising one or more attachments points.
23. An infusion system comprising a pump device according to claim 1 or claim 20, and tubing.

24. The infusion system according to claim 24 or 25, wherein the tubing is calibrated to restrict the flow of fluid thereby delivering the ideal profile of antibiotic to maximise the concentration of antibiotic above the mean inhibitory concentration (MIC) of the antibiotic to a patient in need thereof.
25. A kit comprising a syringe, the pump means according to claim 1 or claim 20, and tubing calibrated for delivering a pre-determined amount of an antibiotic in a pre-determined time period.