

We claim:

1. A drug delivery device for deployment in a renal pelvis of a patient, the drug delivery device comprising:
 - an elastic body, wherein the elastic body comprises
 - (i) an outer tube comprising an elongated outer wall, and
 - (ii) an elongated, arcuate inner wall located within the outer tube and integrally connected to an inner surface of the outer wall along two opposed edges of the arcuate inner wall, the outer and inner walls together defining (a) a guidewire lumen on a concave side of the inner wall, and (b) a drug reservoir lumen on an opposed convex side of the inner wall, the drug reservoir lumen being closed off at its opposed ends; and
 - a drug payload disposed in the drug reservoir lumen, wherein the drug payload comprises at least one drug,
 - wherein the drug delivery device is elastically deformable between a deployment shape for passage of the drug delivery device through a ureter and into the renal pelvis of the patient, and a retention shape which is configured to mitigate migration of the device from the renal pelvis, such that the drug delivery device can be wholly contained within the renal pelvis, with the optional exception of a retrieval string extending at least into the patient's ureter.
2. The drug delivery device of claim 1, wherein the device is biased to be in the retention shape in the absence of a guidewire inserted into the guidewire lumen.
3. The drug delivery device of claim 1, wherein the retention shape has a helical portion.
4. The drug delivery device of claim 3, wherein the retention shape further comprises straight end portions which extend in the longitudinal direction of the device.
5. The drug delivery device of claim 3, wherein the helical portion comprises from two to ten turns.
6. The drug delivery device of claim 5, wherein at least two of the turns are separated by an intermediate straight portion.

7. The drug delivery device of any one of the claims 1 to 6, wherein one or both ends of the device body is tapered.
8. The drug delivery device of any one of claims 1 to 6, wherein the outer tube comprises two different materials of construction, of which a first material is impermeable to the drug when the drug is in solution and a second material which is permeable to the drug when the drug is in solution; and wherein the second material is adjacent to the drug payload.
9. The drug delivery device of claim 8, wherein the second material is in the form of a drug permeable stripe extending the length of the elongated outer wall.
10. The drug delivery device of claim 9, wherein the outer wall is cylindrical and the drug permeable stripe has an arc angle of 30° to 120° of the circumference of the outer wall in the cross section.
11. The drug delivery device of claim 10, wherein the drug permeable stripe has an arc angle of 55° to 120° of the circumference of the outer wall in the cross section.
12. The drug delivery device of claim 9, wherein the first material comprises a first polyurethane.
13. The drug delivery device of claim 9, wherein the first material further comprises a radio-opaque filler.
14. The drug delivery device of claim 9, wherein the second material comprises a second polyurethane.
15. The drug delivery device of any one of claims 1 to 6, wherein the drug reservoir lumen has a crescent cross-sectional shape.
16. The drug delivery device of any one of claims 1 to 6, wherein the guidewire lumen has a circular cross-sectional shape.
17. The drug delivery device of any one of claims 1 to 6, further comprising a retention frame lumen and a retention frame disposed in the retention frame lumen, the

retention frame being an elastic wire configured to bias the drug delivery device into the retention shape.

18. The drug delivery device of any one of claims 1 to 6, wherein the retention shape comprises a helical portion and the drug delivery device has a length of 5 cm to 15 cm when in the deployment shape.
19. The drug delivery device of claim 18, wherein the drug delivery device has a length of 0.8 cm to 2 cm when in the retention shape.
20. The drug delivery device of any one of claims 1 to 6, wherein each of the opposed ends of the drug reservoir lumen is sealed by a spacer.
21. The drug delivery device of claim 20, further comprising at least one middle spacer disposed in the drug reservoir lumen at a position between the opposed ends.
22. The drug delivery device of claim 20 or 21, wherein the elastic body, the end spacers, and/or the at least one middle spacer comprises a radio-opaque filler material.
23. The drug delivery device of any one of claims 1 to 20, further comprising a retrieval string attached to the drug delivery device.
24. The drug delivery device of claim 23, wherein the retrieval string has a length sufficient for an end of the retrieval string to reside in the patient's bladder when the drug delivery device is deployed in the renal pelvis.
25. The drug delivery device of any one of claims 1 to 6, wherein the drug payload is in a solid or a semi-solid form.
26. The drug delivery device of claim 25, wherein the drug payload is the form of a powder or a plurality of tablets.
27. The drug delivery device of claim 25, wherein the drug payload is the form of a plurality of tablets which have a crescent cross-sectional shape.
28. The drug delivery device of any one of claims 1 to 6, wherein the outer tube and the inner wall are formed together by a co-extrusion process.

29. The drug delivery device of any one of claims 1 to 6, wherein the elastic body is thermally shape set to have the retention shape.
30. A system for administration of a drug to a patient in need thereof, the system comprising:
- the drug delivery device of any one of claims 1 to 29; and
 - a guidewire deployment system for deploying the drug delivery device in a renal pelvis of the patient, wherein the guidewire deployment system including (i) a guidewire configured for operable association with the drug delivery device and having a distal end portion capable of extending into the renal pelvis while an opposed proximal end portion extends out of the patient's urethra, and (ii) a plunger device for pushing the drug delivery device over the guidewire and off of the distal end and into the renal pelvis,
- wherein the guidewire has a cross-sectional area dimensioned to pass through the guidewire lumen of the drug delivery device.
31. The system of claim 30, wherein the plunger device comprises:
- a plunger;
 - a handle;
 - a sheath extending between the plunger and the handle, the sheath transferring to the plunger a driving force applied to the handle; and
 - an internal bore for receiving the guidewire, such that the plunger device can travel over the guidewire.
32. The system of claim 31, wherein the plunger further comprises a stop configured to indicate that the drug delivery device has separated from the guidewire.