Claims

1. A device for use in disrupting tissue wherein said device comprises a first moving part in the form of an elongate shaft having attached thereto or associated therewith at least two continuous or discontinuous screw threads and a second non-moving part in the form of a casing adapted to fit over said shaft and having at least one elongate aperture aligned with the longitudinal axis of said shaft and being wider at an end remote from a tissue contact end, wherein at least one screw thread is provided on the lower part or half of said shaft and at least one screw thread is provided on the upper part or half of said shaft and the direction of rotation of one is the opposite to the other.
2. The device according to claim 1 wherein said moving part comprises a motor and a rotor.
3. The device according to claim 1 or 2 wherein said moving part comprises a handle or mounting via which the device can be held whilst in operation.
4. The device according to any preceding claim wherein said threads are continuous.
5. The device according to any preceding claim wherein said threads are discontinuous.
6. The device according to any preceding claim wherein the angular arrangement of the screw threads is selected from the ranges comprising: from 20° - 88° or 40°-80° or 40°-50° as measured from a horizontal plane.
7. The device according to any preceding claim wherein the depth of the screw threads is less than 40% or 30% of the diameter of the casing.
8. The device according to any preceding claim wherein said casing comprises a plurality of apertures.
9. The device according to claim 8 wherein there are between 2-12 apertures per casing circumference.
10. The device according to claim 8 or 9 wherein there are 4 apertures per 4.5 cm of casing.
11. The device according to claims 8-10 wherein said apertures are evenly spaced about said casing.

12. The device according to any preceding claim wherein said aperture comprises a slit whose size expands at an end remote from said tissue contact end of said device.
13. The device according to any preceding claim wherein said aperture comprises a discontinuous slit whose size expands at said end remote from said tissue contact end.
14. The device according to claim 12 or 13 wherein said expanded part of said aperture forms at least a partial circular shape.
15. The device according to claims 12-14 wherein the expanded part of said aperture(s) is aligned with the upper end of said first thread or aligned with a junction between said lower and upper threads.
16. The device according to any one of the preceding claims wherein the lower or tissue contact region of the elongate shaft is free of any attached or associated screw thread(s), and wherein the lower or tissue contact end of the shaft or casing further comprises a constraining member such that, in use, the elongate shaft is free to rotate but is laterally restrained.
17. A method for disrupting tissue comprising the use of the device according to any one of claims 1-16 and a selected tissue sample whose component parts are to be mechanically separated.
18. The method of claim 17 wherein said tissue is suspended in a biocompatible fluid with or without additives that are biocompatible / clinically approved excipients / reagents including, but not limited to, polyethylene glycol, polyvinyl alcohol, sucrose, albumin, amino acid, pyruvate, alone or in combination.
19. The method of claim 17 or 18 wherein said device rotates at a speed(s) within the range of 100 - 10,000 revolutions per minute.
20. The method according to any one of claims 17-19 wherein the duration of rotation ranges from 10 seconds - 10 minutes.