CLAIMS

What is claimed is:

1. A cryopreservation device, the cryopreservation device comprising:
   a) an elongated stick comprising an RFID section, an elongated body, and a specimen collection tip, and
   b) a cap comprising a hollow chamber, wherein the hollow chamber has a length sufficient to accommodate the specimen collection tip;

wherein the cap is capable of enclosing the specimen collection tip within the hollow chamber when the cap is removably attached to the elongated stick;

wherein the RFID section is distal to the specimen collection tip and the RFID section comprises:
   a) an RFID chamber capable of holding an RFID tag,
   b) an RFID opening through which the RFID tag can be placed into the RFID chamber, and
   c) a locking mechanism abutting a circumference of the RFID opening;

wherein a length of the RFID opening is along a longitudinal axis of the elongated stick and,

wherein the locking mechanism comprises a circumferential flap bending inward towards the RFID chamber.

2. The cryopreservation device of claim 1, further comprising a frustoconical boss extending from a first end of the elongated body, wherein the specimen collection tip extends from the frustoconical boss, and wherein the cap is capable of enclosing the specimen collection tip and the frustoconical boss within the hollow chamber when the cap is removably attached to the elongated stick.

3. The cryopreservation device of claim 1, wherein the locking mechanism further comprises an obtrusion connected to the circumferential flap.

4. The cryopreservation device of claim 1, wherein the length of the RFID opening is shorter than a RFID-chamber length.

5. The cryopreservation device of claim 1, wherein the RFID chamber has at least one dimension perpendicular to the longitudinal direction that is between 1.01% to 1.1% a same dimension of the RFID tag.

6. The cryopreservation device claim 1, wherein the elongated stick is made of one integrated piece of plastic.

7. The cryopreservation device of claim 1, wherein, when the RFID tag is placed in the RFID chamber and the cryopreservation device is placed in liquid nitrogen for 5 minutes, the RFID tag remains in the RFID chamber and the cryopreservation device shows no visible cracks.

8. The cryopreservation device of claim 1, wherein the RFID tag is cylindrical and has a length ranging from 4 mm to 12 mm long and a diameter ranging from 0.5 mm to 4 mm.

9. The cryopreservation device of claim 1, wherein the RFID section dimension in each of the x and y directions, perpendicular to the longitudinal direction, is no larger than about 3 mm.

10. The cryopreservation device of claim 1, wherein the RFID section dimension in each of the x and y directions, perpendicular to the longitudinal direction, is no larger than about 2.4 mm.

11. A cryopreservation device, the cryopreservation device comprising:

a) an elongated stick comprising an RFID section, an elongated body, and a specimen collection tip, and
b) a cap comprising a hollow chamber, wherein the hollow chamber has a length sufficient to accommodate the specimen collection tip;

wherein the cap is capable of enclosing the specimen collection tip within the hollow chamber when the cap is removably attached to the elongated stick;
wherein the RFID section is distal to the specimen collection tip and the RFID section comprises:

a) an RFID chamber capable of holding the RFID tag,
b) an RFID opening through which the RFID tag can be placed into the RFID chamber, and
c) a locking mechanism abutting a circumference of the RFID opening;

wherein a length of the RFID opening is along a longitudinal axis of the elongated stick;
wherein the locking mechanism comprises a circumferential flap bending inward towards the RFID chamber;
wherein the length of the RFID opening is shorter than a RFID-chamber length; and
wherein the RFID chamber has at least one dimension perpendicular to the longitudinal direction that is between 1.01% to 1.1% a same dimension of the RFID tag.

12. The cryopreservation device of claim 11, further comprising a frustoconical boss extending from a first end of the elongated body, wherein the specimen collection tip extends from the frustoconical boss, and wherein the cap is capable of enclosing the specimen collection tip and the frustoconical boss within the hollow chamber when the cap is removably attached to the elongated stick.

13. The cryopreservation device of claim 11, wherein the locking mechanism further comprises an obtrusion connected to the circumferential flap.

14. The cryopreservation device claim 11, wherein the elongated stick is made of one integrated piece of plastic.

15. The cryopreservation device of claim 11, wherein, when the RFID tag is placed in the RFID chamber and the cryopreservation device is placed in liquid nitrogen for 5 minutes, the RFID tag remains in the RFID chamber and the cryopreservation device shows no visible cracks.

16. The cryopreservation device of claim 11, wherein the RFID tag is cylindrical and has a length ranging from 4 mm to 12 mm long and a diameter ranging from 0.5 mm to 4 mm.

17. The cryopreservation device of claim 11, wherein the RFID section dimension in each of the x and y directions, perpendicular to the longitudinal direction, is no larger than about 3 mm.

18. The cryopreservation device of claim 11, wherein the RFID section dimension in each of the x and y directions, perpendicular to the longitudinal direction, is no larger than about 2.4 mm.

19. A cryopreservation device, the cryopreservation device comprising:

a) an elongated stick comprising an RFID section, an elongated body, a frustoconical boss extending from a first end of the elongated body, and a specimen collection tip extending from the frustoconical boss, and
b) a cap comprising a hollow chamber, wherein the hollow chamber has a length sufficient to accommodate the specimen collection tip and the frustoconical boss,

wherein the cap is capable of enclosing the specimen collection tip and the frustoconical boss within the hollow chamber when the cap is removably attached to the elongated stick;

wherein the RFID section is distal to the specimen collection tip and the RFID section comprises:

a) an RFID chamber capable of holding the RFID tag,
b) an RFID opening through which the RFID tag can be placed into the RFID chamber, and
c) a locking mechanism abutting a circumference of the RFID opening;

wherein the elongated stick is made of one integrated piece of plastic;

wherein a length of the RFID opening is along a longitudinal axis of the elongated stick, wherein the RFID-opening length is shorter than a RFID-chamber length, wherein the locking mechanism comprises a circumferential flap bending inward toward the RFID

chamber, wherein the locking mechanism further comprises an obtrusion connected to the circumferential flap and protruding over RFID opening, and wherein the RFID chamber has at least one dimension perpendicular to the longitudinal direction that is between 1.01% to 1.1% the same dimension of the RFID tag.