What is Claimed:

1. A method for applying writings, graphics and/or other markings to frozen vials or ampoules, while maintaining the integrity of the biological material contained therein, comprising the following steps:

    a. providing a plurality of biological material-filled vials, which are held at about
    -70 °C to about -196 °C, and to which blank laser-ablatable labels had previously been applied;

    b. loading the plurality of vials into a temperature-controlled marking enclosure, which is substantially filled with dry nitrogen gas to reduce or eliminate the presence of moisture inside the enclosure;

    c. conveying the vials beneath marking lasers;

    d. applying laser light to the laser-ablatable labels;

    e. determining whether the vials have been marked to within required specifications, thereby applying writings, graphics and/or other markings to frozen vials, while maintaining the integrity of the biological material contained therein.

2. The method of claim 1, wherein the integrity of the biological material is confirmed as having been maintained if the biological material is capable of eliciting an immune response in a target animal.

3. The method of claim 2, wherein the elicited response is statistically similar to the response elicited by the biological material contained within the plurality of vials prior to being subjected to the laser-marking method.

4. The method of claim 1, wherein the integrity of the biological material is confirmed as having been maintained if the biological material is determined by ELISA, virus neutralization antibody (VNA), or any other suitable immunological measuring test, to be within the specifications required by the product specifications for the biological material.

5. The method of claim 1, wherein the vials are conveyed along conveyor belts.

6. The method of claim 1, wherein two or more rows of vials are conveyed beneath the lasers to increase the speed at which the vials are marked.

7. The method of claim 1, further comprising the step of transferring the marked vials to a liquid nitrogen-containing shipping Dewar.

8. The method of claim 7, wherein the Dewar containing a means for reversibly connecting to the marking enclosure, such that the marked vials may be transferred via a means for transferring the vials to the storage/shipping Dewar, without exposing the vials to the air outside of the enclosure.

9. A method for applying writings, graphics and/or other markings to vials held at a temperature from about -70 °C to about -196 °C, while maintaining the integrity of the biological material contained therein, comprising the following steps:

   a. applying blank laser-ablatable labels to a plurality of cryogenic storage vials;

   b. depyrogenating/sterilizing the vials;

   c. filling the vials with biological material;

   d. placing the filled vials into a storage means;

   e. transferring the vials to a means for marking the vials with lasers;

   f. using a laser to apply writings, graphics and/or other markings to the vials, thereby applying writings, graphics and/or other markings to the frozen vials, while maintaining the integrity of the biological material contained within the vials.

10. The method of claim 9, further comprising the steps of:

   a. freezing the vials at a controlled rate of cooling, prior to placing the vials into the storage means;

b. transferring the frozen vials to long-term and/or permanent storage at a temperature as low as the gaseous or liquid phase of N_2 (about -196 °C);

c. testing the frozen material for activity;

d. determining the dose presentation/product specifications based upon the activity test; wherein after satisfactory testing and release, the containers which meet required specifications will be retrieved from the long-term or permanent controlled storage area and placed into intermediate storage area to facilitate the steps recited in (j), all of which are conducted in the gaseous phase of N_2 to ensure product integrity;

e. counting the containers to ensure adequate reconciliation for customer requests/orders;

f. using a laser to apply writings, graphics and/or other markings to the ampoules or vials, based upon product specifications/information/approved label as defined by the testing, the customer specifications, and regulatory governance.

11. The method of claim 10, wherein the applying comprises the step of removing laser light-blocking vapor, if present, by applying a short burst of dry air prior to applying the laser light to the previously affixed blank label.

12. The method of claim 1, wherein the applying is carried out in a temperature-controlled enclosure containing dry nitrogen gas, which gas is held at temperatures below about -70 °C or below about -80 °C.

13. The method of claim 9, wherein the applying is carried out in a temperature-controlled enclosure containing dry nitrogen gas, which gas is held at temperatures below about -70 °C or below about -80 °C.

14. The method of claim 1, further comprising the step of placing the marked vials into one or more cryogenic shipping vessel.

15. The method of claim 2, wherein the material in the vial is a vaccine.

16. The method of claim 15, wherein the vaccine is a cell-associated live vaccine.

17. The method of claim 15, wherein the vaccine loses less than about 0.2 log of titer during the labeling procedure.

18. The method of claim 17, wherein the vaccine loses less than about 0.1 log of titer during the labeling procedure.

19. The method of claim 3, wherein the material in the vial is a vaccine.

20. The method of claim 4, wherein the material in the vial is a vaccine.

21. The method of claim 5, wherein the material in the vial is a vaccine.

22. The method of claim 6, wherein the material in the vial is a vaccine.

23. The method of claim 7, wherein the material in the vial is a vaccine.

24. The method of claim 8, wherein the material in the vial is a vaccine.

25. The method of claim 9, wherein the material in the vial is a vaccine.

26. The method of claim 10, wherein the material in the vial is a vaccine.

27. The method of claim 11, wherein the material in the vial is a vaccine.

28. The method of claim 12, wherein the material in the vial is a vaccine.

29. The method of claim 13, wherein the material in the vial is a vaccine.

30. The method of claim 14, wherein the material in the vial is a vaccine.