

1

2,779,332

PROCEDURE FOR INTRACORPORAL INTRA- AND SUBCUTANEOUS TEST, THERAPY, IM- MUNIZATION, VACCINATION, AND DRUG ADMINISTRATION

Harry J. Corper and Catherine Clark, Denver, Colo.

No Drawing. Application November 25, 1953,
Serial No. 394,496

5 Claims. (Cl. 128—253)

The object of our invention is to introduce into the animal economy definite quantities of various antigenic, therapeutic and immunizing (including vaccines) materials and drugs incorporated in a non-antigenic, non-allergenic material in dry form, adhering intimately to a pin or needle or like material or instrument (with various bevels and sizes for various purposes), to prevent its removal during its insertion and yet being readily removable and soluble after contact with the tissues and remaining in situ upon removal of the pin, needle, or like instrument of insertion.

Our invention consists of simple sharp pointed non-corrosive pins or needles, varying sizes for varying purposes, the points of which have been dipped to an appropriate depth in a non-allergenic, non-antigenic, water soluble cellulose preparation which dries rapidly in a hard film, closely adhered to the tip of the pin, needle, or like instrument. This water soluble cellulose preparation contains both the quantitative amount of specific antigenic or allergenic or immunizing material or drug to be used for diagnostic test, therapy, or immunization and, when desired, a small appropriate amount of water soluble non-antigenic dye or color. This dye or color is readily discolored (reduced) by the tissues and absorbed before the biological reaction (allergic or antigenic) or drug idiosyncrasy reactions occur and is added for the convenience of the operator in determining complete removal of the material from the tip of the pin or like instrument on withdrawal. More specifically, we have produced a workable preparation of a 5 to 10 percent methyl cellulose solution in water, to which is added antigen, allergen, or drug, immunizing agent or vaccine in quantitatively appropriate amounts, and a readily absorbable or reducible dye or color, about 0.1 to 0.2 percent medicinal methylene blue for blue color, others for different desired colors, to designate agent and to indicate when the material is in the body and when solution occurs. As long as the color can be seen in situ, solution has not taken place. Under aseptic precautions the cleaned (heat, acetone, gasoline, petroleum products, ether, etc.) sterile pins or like instrument for intracorporal, intracutaneous and subcutaneous insertion are dipped into the foregoing solution and allowed to dry aseptically. After drying, the pins (or instruments) are kept or sealed in glass tubes of approximately two inches in length, 4 mm. outside diameter, sterile, scored for easy breaking to obtain pin for use, after which breakage the head of pin is grasped by operator thus eliminating chances of contamination, or other suitable receptacle ready for use.

The test or therapy or immunization or drug is administered by inserting the pin or instrument intracorporally, intracutaneously or subcutaneously after appropriate cleansing of the skin and outside of tube (alcohol, acetone, ether, etc.). The point is allowed to remain in situ for about 30 seconds, sufficient time to moisten material, when it is readily removed from the pin or instrument on withdrawal under slight pressure between the fingers during withdrawal. The test or therapy or im-

2

munization or drug is ready for the operator's application, and he needs no additional equipment. He has no need for a sterilizer, syringe, diluent, etc. Both pin and tube are discarded after single use. For larger amounts on larger animals, correspondingly larger tubes and pins, needles, or like instruments are used. These single tests, therapies, drugs, immunizations or vaccines are so compact and light-weight that thousands of them can be packed and transported in a very small container, thus making air transport feasible and convenient. The corrugated paper holders are protection against breakage and can be marked to avoid error or confusion in use. These may be put up as single, mass numbers, or sets of various combinations. In military and mass use, no salvage problem exists.

We claim:

1. The method for preparing medicinal materials in suitable form for introduction in a dry, solid state into the animal economy which includes: admixing a quantitative amount of the desired medicinal material with an aqueous methyl cellulose solution; dipping the pointed end of a sterile needle-like instrument into said admixture; removing said instrument from said admixture; and allowing the portion of the admixture which has adhered to said instrument to dry into a hard film.

2. The method of claim 1, wherein the aqueous methyl cellulose solution is about a 5-10 percent methyl cellulose solution.

3. The method of preparing medicinal materials in suitable form for introduction in a dry, solid state into the animal economy which includes: admixing a quantitative amount of the desired medicinal material, a small amount of a water soluble non-antigenic dye, and an aqueous methyl cellulose solution; dipping the pointed end of a sterile needle-like instrument into said admixture; removing said instrument from said admixture; and, allowing the portion of the admixture which has adhered to said instrument to dry into a hard film.

4. The method for introducing medicinal materials in a dry, solid state into the animal economy which includes: admixing a quantitative amount of the desired medicinal material with an aqueous methyl cellulose solution; dipping the pointed end of a sterile needle-like instrument into said admixture; removing said instrument from said admixture; allowing the portion of the admixture which has adhered to said instrument to dry into a hard film; introducing the point of said needle-like instrument into the animal body; allowing said instrument to remain in said animal body until the hard film adhering to said instrument can be dislodged; and, removing said instrument from said animal body.

5. An needle-like instrument having a dried residue of a medicinal material dispersed in a non-allergenic, non-antigenic, water-soluble carrier film intimately adhering to the pointed end of said instrument.

References Cited in the file of this patent

UNITED STATES PATENTS

652,999	Denis	July 3, 1900
1,476,233	Zell	Dec. 4, 1923
1,924,968	Weichlen	Aug. 29, 1933
2,554,241	Corper	May 22, 1951
2,602,042	Abbott	July 1, 1952

FOREIGN PATENTS

349,283	Germany	Feb. 28, 1922
378,198	Great Britain	Aug. 11, 1932

OTHER REFERENCES

Drug Trade News, vol. 27, No. 22, page 55, Oct. 27, 1952.