



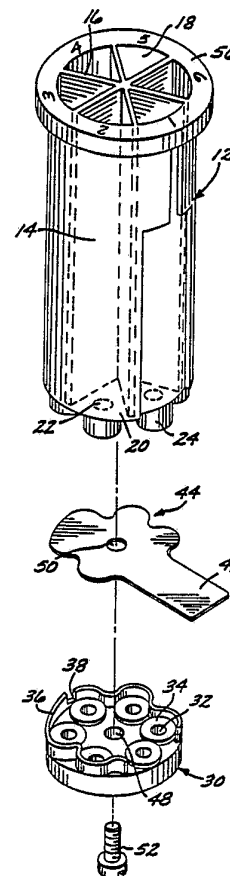
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(54) Title: METHOD AND APPARATUS FOR FIXATION OF BIOPOLYMERS TO A SOLID SUPPORT BY CENTRIFUGATION

(57) Abstract

The invention provides an apparatus and method for affixing charged biopolymers to porous supports. The invention permits standardization between separate samples and relieves the inefficiency and contamination attendant to conventional vacuum methods. The apparatus (10) includes a sample tube (12) having a plurality of sample chambers (14) with tubular exit ports (22), for receiving multiple samples, and a transverse porous support (44) at the base of exit ports (22). The support (44) is held in tight contact with the sample by a removable head (30) with exit ports (22) which effects a liquid, tight seal surrounding each exit port so as to reduce cross mixing of sample. The sample tube may be inserted into an elutant reservoir such as a centrifuge tube and centrifuged so as to effect flow of the sample through the support (44) resulting in the fixation of the biopolymer onto the support.



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AMENDED CLAIMS

[received by the International Bureau on 9 June 1989 (09.06.89);
original claim 8 amended; other claims unchanged (1 page)]

7. A method to detect nucleic acids comprising the steps of:

- a) applying a fluid sample suspected of containing target nucleic acids to a porous solid support;
- 5 b) centrifuging said sample and solid support to fix the nucleic acids to said support;
- c) contacting said fixed nucleic acids with labeled nucleic acid probe complementary to nucleic sequences in said nucleic acids fixed to said support; and
- 10 d) detecting hybridized probe.

8. An apparatus for affixing material contained in each of a liquid sample on a porous support by centrifugation of the liquid, said apparatus comprising:

- a) a tube having an axially extending chamber for 15 holding a liquid sample, the chamber having an upper and lower ends, which are open at the upper end and are bound at the lower end by a lower floor at the bottom of the tube;
- b) means for positioning a porous membrane over 20 the lower end, said means comprising a cap defining an opening, the cap being mountable on the lower end of the chamber with the orifice providing a continuing liquid passageway for the chamber, the porous support being secured between the chamber and the cap to prevent liquid 25 flow other than through the opening.

9. A multi-sample apparatus for affixing material contained in each of a plurality of liquid samples on separate regions of a porous support by centrifugation of the liquid, said apparatus comprising:

- 30 a) a tube having a plurality of axially extending chambers for holding liquid samples, which are open at the upper end and are bound at the lower end by a lower floor at the bottom of the tube;