Claims

1. A blotting membrane holder for conducting immunoassays, comprising a frame and a porous support, wherein the frame has a perimeter edge configured to support a blotting membrane, and a flow distributor is attached to the frame, and wherein the porous support comprises a polypropylene mesh and a sheet of paper is laminated to one side of said polypropylene mesh, wherein the polypropylene mesh is bound to the frame along one edge.

2. The blotting membrane holder of claim 1, wherein said frame is made of plastic or paper.

3. The blotting membrane holder of claim 1, wherein said flow distributor is a membrane laminated to said frame.

4. The blotting membrane holder of claim 1, wherein said blotting membrane is sandwiched between said flow distributor and said porous support.

5. The blotting membrane holder of claim 1, wherein more than one blotting membrane is sandwiched between said flow distributor and said porous support.

6. A method of carrying out an immunoassay, comprising:

providing a device comprising a holder and a carrier for the holder, the holder being formed of a material selected from the group consisting of plastic and paper, the holder comprising a frame having a perimeter edge, the frame configured to support a flow distributor; said flow distributor comprising a membrane attached to said frame and over which a blotting membrane can be positioned; a porous support comprising polypropylene mesh bound to said frame along a portion of said perimeter edge; and a sheet of paper laminated to said polypropylene mesh; and a carrier for the holder comprised of a top plate and a bottom plate, each having a width and a length, a top and bottom surface and a thickness between the top and bottom surfaces, an outer edge and at least one opening, the plates being of a length and width greater than the length and width of the holder, the top plate of the carrier having at least one well and an opening substantially equal in width and length to the holder, the bottom surface of the top plate and the top surface of the

bottom plate each having one or more seals in alignment with each other when the two plates are adjacent each other and the seals being arranged on each surface at a width and length greater than that of the opening of the top plate, but less than the outer dimensions of the holder, at least one of the plates has a seal formed adjacent the outer edge of the plate and outward of the seal of that plate;

placing a blotting membrane on one of the surfaces of an open holder such that the lower surface of the blotting membrane faces the porous support and the upper surface of the blotting membrane faces the flow distributor when the device is closed around the membrane;

placing the blot holder inside the carrier which is then securely closed;

placing the carrier on or in a manifold;

applying a driving force to said manifold;

placing a liquid in the at least one well of the top plate of the carrier; and

continuing the application of said driving force until the liquid has been moved through the device and blotting membrane.

7. The method of claim 6, further comprising prewetting said blotting membrane prior to placing it in the open holder.

8. The method of claim 6, further comprising analyzing blots on said blotting membrane.

9. The method of claim 6, further comprising collecting a portion of said liquid and recycling the same for future use.

10. The method of claim 6, further comprising placing a second blotting membrane in the holder prior to placing the blot holder inside the carrier.

11. The method of claim 6, wherein said driving force is vacuum.

12. The method of claim 6, wherein said driving force is positive pressure.

13. The method of claim 6, wherein said manifold has first and second carrier receiving regions for respectively receiving first and second carriers to carry out two immunoassays in parallel.