

Claims

1. A multi-unit plate for immunoblot analysis, comprising:
 - a plate having a plurality of openings; and
 - 5 a plurality of protrusive members protruding away from the plate, wherein one or more of the plurality of protrusive members comprises an elongated linking member having a first end attached to the plate and a second end that provides a support structure having a membrane affixed to the support structure,
 - 10 wherein the support structure comprises a hollow center portion and a rim surrounding the hollow center portion, and wherein the membrane is affixed to the rim of the support structure.
2. The multi-unit plate of claim 1, wherein the elongated linking member is a
15 rod and the rim in the support structure is a ring surrounding the hollow center portion and the membrane is affixed to the ring.
3. The multi-unit plate of claim 2, wherein the membrane is affixed to the side
20 of ring disposed away from the plate.
4. The multi-unit plate of claim 1, wherein the elongated linking member is a tubular member having the first end attached to the plate and the second end having the rim, wherein the rim has one or more openings therein so that the membrane is separated from the tubular member at a hollow center portion
25 of the tubular member and at the one or more openings in the rim of the second end of the tubular member.

5. The multi-unit plate of claim 1, wherein the membrane is a nitrocellulose or PVDF membrane.
- 5 6. The multi-unit plate of claim 1, wherein the support structure is made from a material selected from the group consisting of ceramics, elastomers, epoxies, glasses, glass-ceramics, plastics, polycarbonates, polydimethylsiloxane, polyethyleneterephthalate glycol, polymers, polymethyl methacrylate, polystyrene, polyurethane, polyvinyl chloride, rubber, silicon, silicon oxide,
10 and silicon rubber.
7. The multi-unit plate of claim 1, wherein the protrusive member comprises more than one elongated linking members.
- 15 8. The multi-unit plate of claim 1, wherein a number of the protrusive member is 6, 24, 96, 384, or 1536.
9. A method for immunoblot analysis, comprises:
loading a sample containing a protein into one or more protrusive members
20 of the multi-unit plate of claim 1;
inserting the multi-unit plate into a multi-well plate so that each protrusive member of the multi-unit plate is placed inside a well of the multi-well plate;
subjecting the membrane in one or more of the plurality of protrusive members successively to blocking with a blocking buffer, incubation with a
25 primary antibody, washing, incubation with a secondary antibody, and
washing to obtain one or more processed membranes;
applying a detection reagent to the one or more processed membranes; and
placing the multi-unit plate in a microplate reader.

10. The method of claim 9, wherein the sample is selected from the group consisting of a chemical molecule, a peptide molecule, a protein molecule, an RNA molecule, a DNA molecule, a traditional antibody, a recombinant antibody or fragment thereof, a cell, a virus particle, or mixtures thereof.

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11. A device for immunoblot analysis, comprises a multi-unit plate of claim 1 and a multi-well plate, wherein the multi-well plate comprises a plurality of wells that receive the plurality of protrusive members of the multi-unit plate.