Membrane Selection: A Quick Comparison of PVDF and Nitrocellulose

The two most commonly used membranes in Western blotting applications are Polyvinylidene fluoride (PVDF) and nitrocellulose. When looking at a new target, it is a good idea to test each type of membrane to determine optimal conditions. In general, nitrocellulose is used for low molecular weight proteins and nucleic acid analysis. Alternatively, PVDF is suitable for higher molecular weight proteins and more durable if strip and re-probing the membrane is necessary. Here are is a comparison of PVDF and nitrocellulose.

Membrane Type	Polyvinylidene difluoride (PVDF)	Nitrocellulose
Protein Binding Capacity	100-300 µg/cm^2	80-100 µg/cm^2
Solvent Resistant	Yes	No
Physical Characteristics	Durable	Fragile
Background Noise	Higher sensitivity and background	Lower sensitivity and background
Total Protein Stain Compatibility	Amido black Ponceau S Colloidal gold Colloidal silver India ink Coomassie blue	Amido black Ponceau S Colloidal gold Colloidal silver India ink
Double-blotting Method	Yes	No
Strip and Re-probe	Yes	Possible, but may lose sensitivity
Detection Methods	Chromogenic Chemiluminescent Fluorescent Radioactive Chemifluorescent	Chromogenic Chemiluminescent Fluorescent Radioactive
Other Applications	Amino Acid Analysis Protein Sequencing Solid Phase Assay Systems	Amino Acid Analysis