Claims

What is claimed is:

1. A modified ultrafiltration membrane, wherein the modification comprises treatment of the membrane with a mixture of a fatty acid ester and a polydimethylsiloxane, wherein the modified ultrafiltration membrane comprises human skin-like permeability properties and a pore size of 0.1 microns or smaller than 0.1 microns.

2. The membrane of claim 1, wherein the fatty acid ester is isopropyl myristate and the polydimethylsiloxane is silicone oil.

~~3. A modified ultrafiltration membrane, wherein the modification comprises treatment of the membrane with a mixture of isopropyl myristate and silicone oil, wherein the modified ultrafiltration membrane comprises human skin-like permeability properties.~~

~~4.~~3. The ultrafiltration membrane of claim 1, wherein the membrane is a polyethersulfone membrane.

4. A device containing the membrane according to claim 1.

5. The modified ultrafiltration membrane of claim 1, wherein human skin-like permeability properties comprise a high degree of correlation with human skin for the diffusion of one or more compounds.

~~6. The ultrafiltration membrane of claim 1, wherein the membrane comprises a pore size of 0.1 microns or smaller than 0.1 microns.~~

~~7. A device containing the membrane according to claim 1.~~

~~8. The ultrafiltration membrane of claim 3, wherein the membrane is a polyethersulfone membrane.~~

~~9. The modified ultrafiltration membrane of claim 3, wherein human skin-like permeability properties comprise a high degree of correlation with human skin for the diffusion of one or more compounds.~~

~~10. The ultrafiltration membrane of claim 3, wherein the membrane comprises a pore size of 0.1 microns or smaller than 0.1 microns.~~

~~11. A device containing the membrane according to claim 3.~~

~~12.~~6. The device of claim ~~7~~4, wherein the device is a multiwell screening plate comprising a plurality of wells, each well comprising the membrane.

7. A modified ultrafiltration membrane, wherein the modification comprises treatment of the membrane with a mixture of isopropyl myristate and silicone oil, wherein the modified ultrafiltration membrane comprises human skin-like permeability properties and a pore size of 1.0 microns or smaller than 1.0 microns.

8. The ultrafiltration membrane of claim 7, wherein the membrane is a polyethersulfone membrane.

9. The modified ultrafiltration membrane of claim 7, wherein human skin-like permeability properties comprise a high degree of correlation with human skin for the diffusion of one or more compounds.

10. A device containing the membrane according to claim 7.

11. A modified polyethersulfone membrane, wherein the modification comprises treatment of the membrane with a mixture of a fatty acid ester and a polydimethylsiloxane, wherein the modified polyethersulfone membrane comprises human skin-like permeability properties.

~~13.~~12. A method of making a synthetic membrane which comprises human skin-like permeability properties, the method comprising the steps of:

(a) providing a polyethersulfone ultrafiltration membrane; and

(b) coating the membrane with a mixture of a fatty acid ester and a polydimethylsiloxane,

thereby resulting in a synthetic membrane which comprises human skin-like permeability properties.

13. The method of claim ~~13~~12, wherein the fatty acid ester is isopropyl myristate and the polydimethylsiloxane is silicone oil.

~~15.~~14. The method of claim ~~13~~12, wherein the synthetic membrane exhibits diffusion similar to human skin for compounds having different physico-chemical properties.