Box Behnken Design Expert Equations

The equations below constitute the polynomial model's actual equation for the response (vesicle size, dispersity index, EE%, and zeta potential) used to evaluate the variable's influence. The positive and negative coefficients refer to the variables' positive and negative impact on the response. where X1 is soya lecithin w/w%, X2 is ethanol w/w%, and X3 is propylene glycol w/w%.

Vesicle Size = +210.69583 -12.85833 X1 -8.43472 X2 -6.81958 X3 +0.352778 X1X2 +0.724167 X1X3 +0.278556 X2X3 -0.750000 $X1^2$ +0.249519 $X2^2$ +0.094083 $X3^2$

Dispersity Index = +1.07281-0.205833 X1-0.041751 X2 -0.011191 X3 +0.001058 X1X2 -0.000057 X1X3 + 0.000425 X2X3 +0.030775 $X1^2$ +0.000657 $X2^2$ +0.000142 $X3^2$

EE% = -341.83208+184.42865 X1+ 10.42293 X2- 0.649142 X3- 0.953147X1X2+ 1.16953X1X3 - 0.033977X2X3 - 27.38734$X1^2$- 0.126967$X2^2$- 0.112661X^2

Zeta Potential = -65.01792+9.78542 X1+0.965694 X2-0.836250 X3-0.383000 X1X2 +0.107917 X1X3+0.008261 X2X3

The Optimized Formula Zeta Sizer Reading

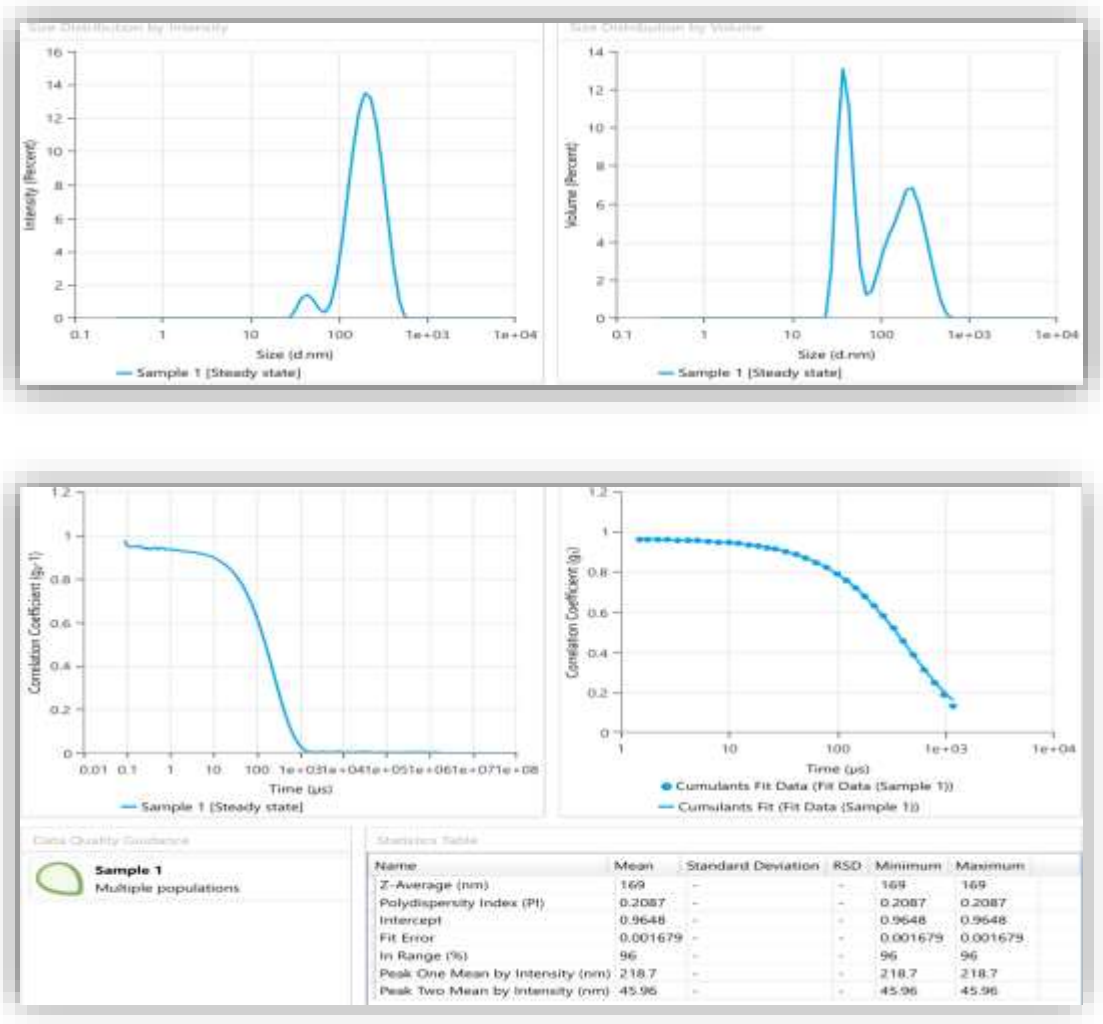


Figure S1. Vesicle size and dispersity index measurement of MLX-Ethos-OF

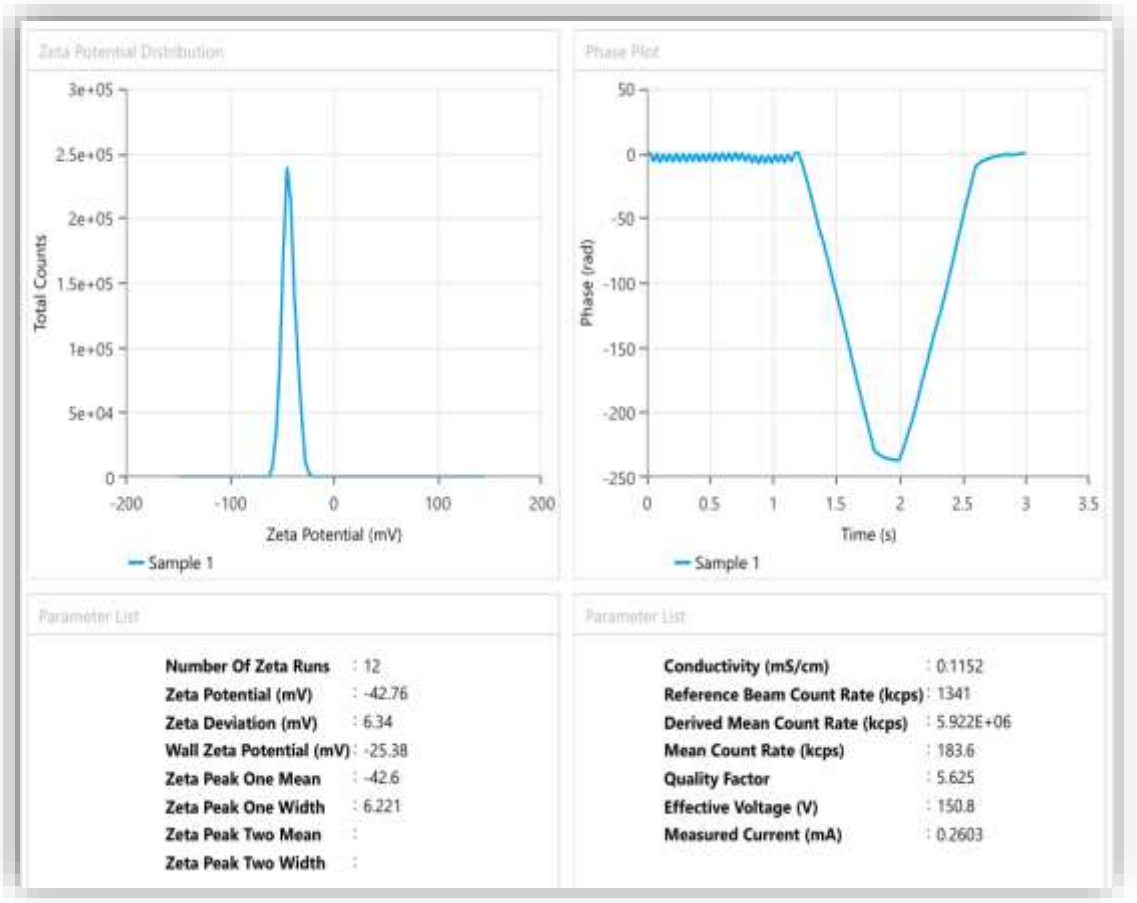


Figure S2. Zeta potential measurement peaks