Electronic Supplementary Material (ESI) for Soft Matter.
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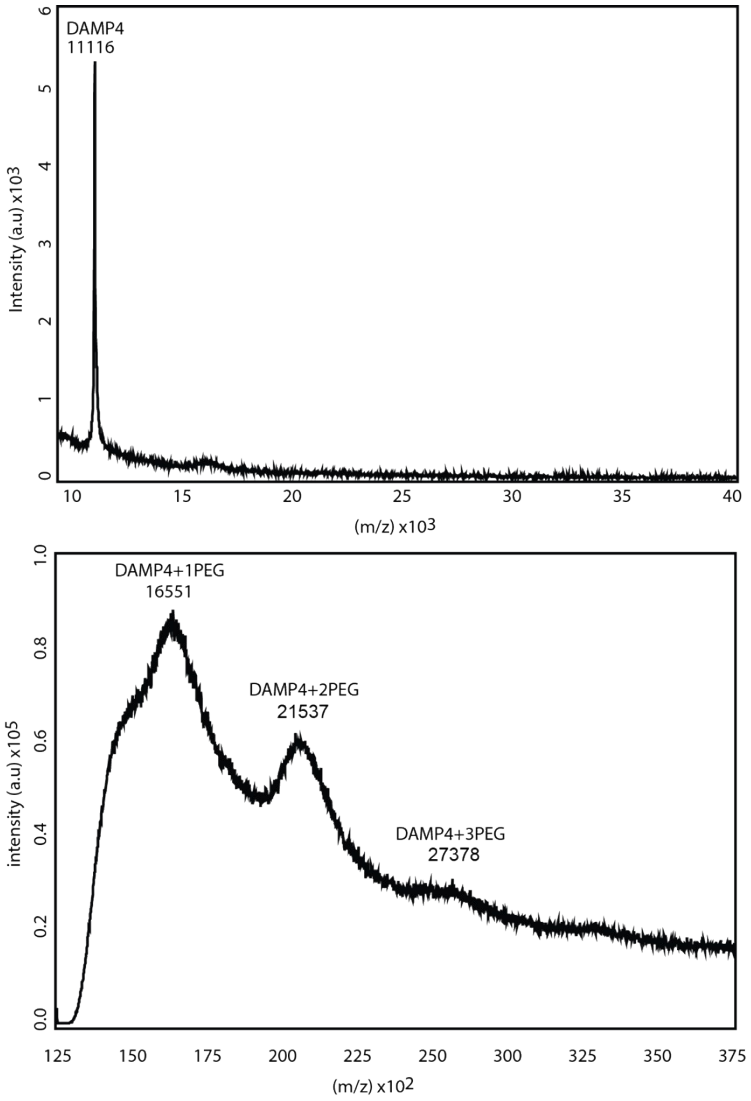
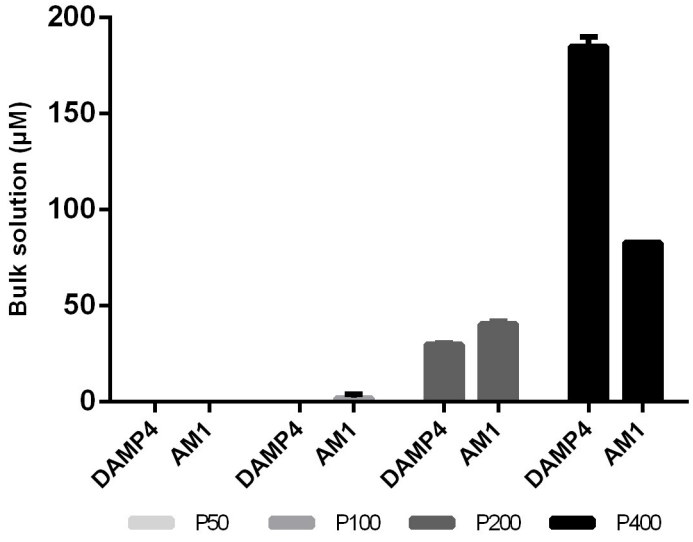
Supplementary Figure 1.



Supplementary Figure 2.

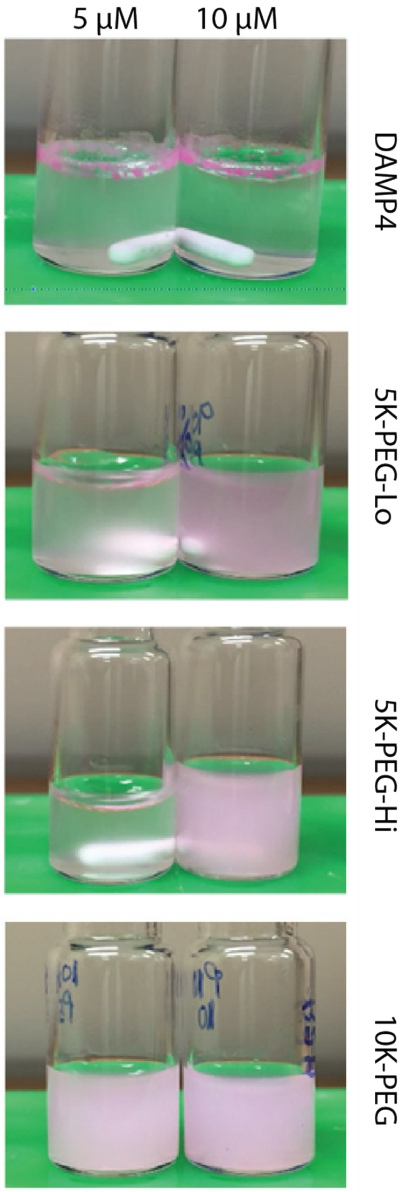
Concentrations of free AM1 and DAMP4 following the adsorption of PEG-DAMP4 onto AM1-stabilised emulsions. Triplicate emulsions, dispersed in the presence of 400 μM AM1 were mixed with PEG-DAMP4 at the indicated μM concentrations. Taking the surface area corresponding to the subsequent 1% oil-in-water emulsion, the DAMP4 surface densities were as follows: P50 = 14 pmol/cm^2, P100 = 28 pmol/cm^2, P200 = 57 pmol/cm^2, P400 = 113 pmol/cm^2.

A sample of the continuous phase was isolated using a centrifugal ultrafiltration device (100 MWCO) and peptide concentrations determined by HPLC. Values represent the mean of three emulsions ± SD.



Supplementary Figure 3.

Stability of TNEs following the addition of PEG-DAMP4. Emulsions containing DiI, dispersed in the presence of 400 µM AM1, were mixed with PEG-DAMP4 to obtain the indicated final µM concentrations (5 µM and 10 µM). Each emulsion prepared with DAMP4, 5K-PEG-Lo, 5K-PEG-Hi and 10K-PEG was mixed 1:1 with 100 mM EDTA. The unPEGylated DAMP4 addition at both concentrations shows clear aggregation. The addition of the different PEG-DAMP4 preparations at 10 µM stabilises the emulsions, making them resistant to aggregation in the presence of EDTA. While the addition of 10K-PEG also stabilises the emulsion at 5 µM, 5K-PEG-Lo and 5K-PEG-Hi did not, resulting in reduction in the colouration of the solution due to aggregation of the droplets.



Supplementary Figure 4.

(A) Schematic representation of the spontaneous integration of the scFv-DAMP4 fusion protein onto the surface pre-PEGylated TNEs. (B) Biolayer interferometry sensogram showing the association and dissociation of the scFv-DAMP4 fusion to EGFR. (C) Z-averaged size and ζ-potential of the 5K-PEG-Lo, 5K-PEG-Hi and 10K-PEG versions of scFv-functionalised TNEs. Values represent the mean of three emulsions ± SD.