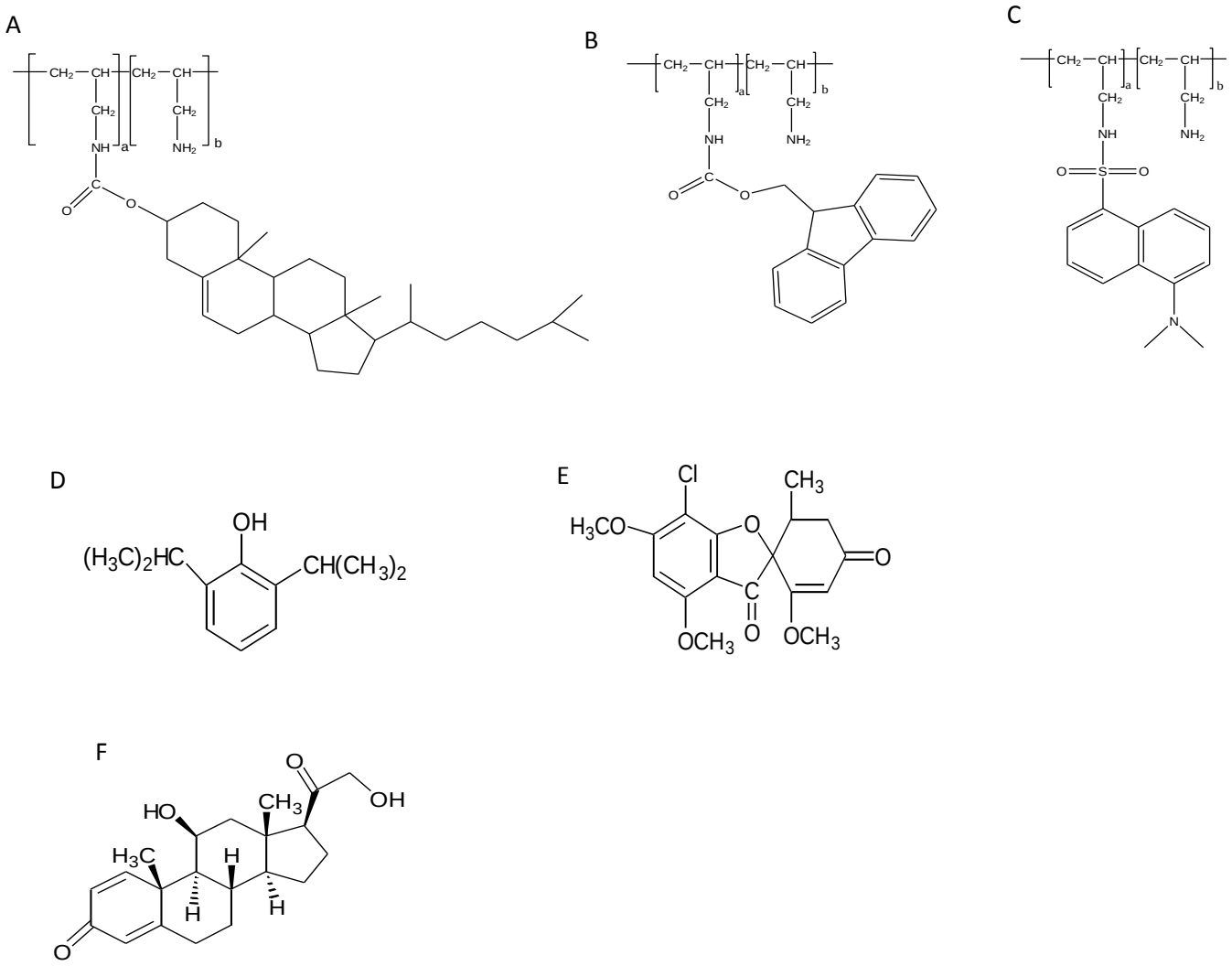

Figure 1: Chemical structure of A) cholesteryl-PAA; B) Fmoc-PAA; C) Dansyl- PAA; D) propofol; E) griseofulvin; F) prednisolone

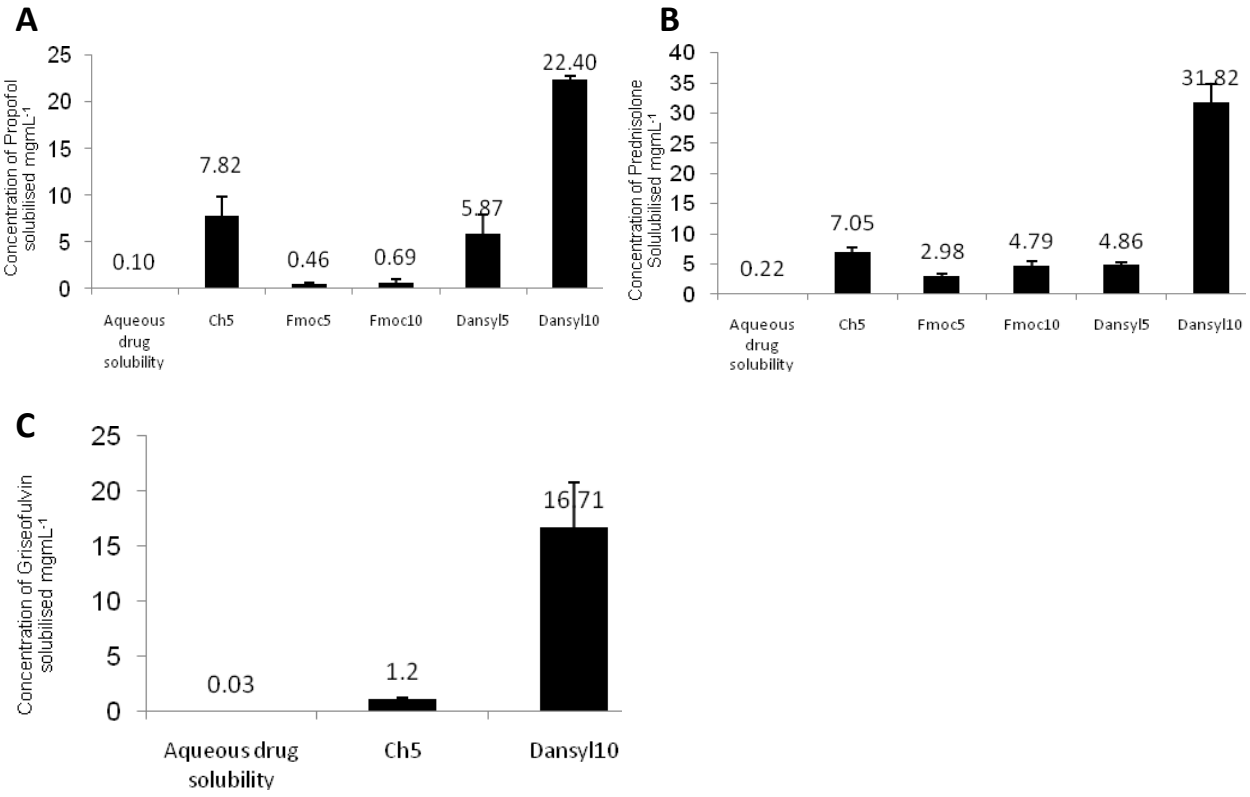

Figure 2. Maximum drug concentration solubilised by PAA amphiphilies. A) propofol, B) prednisolone and C) griseoufulvin.

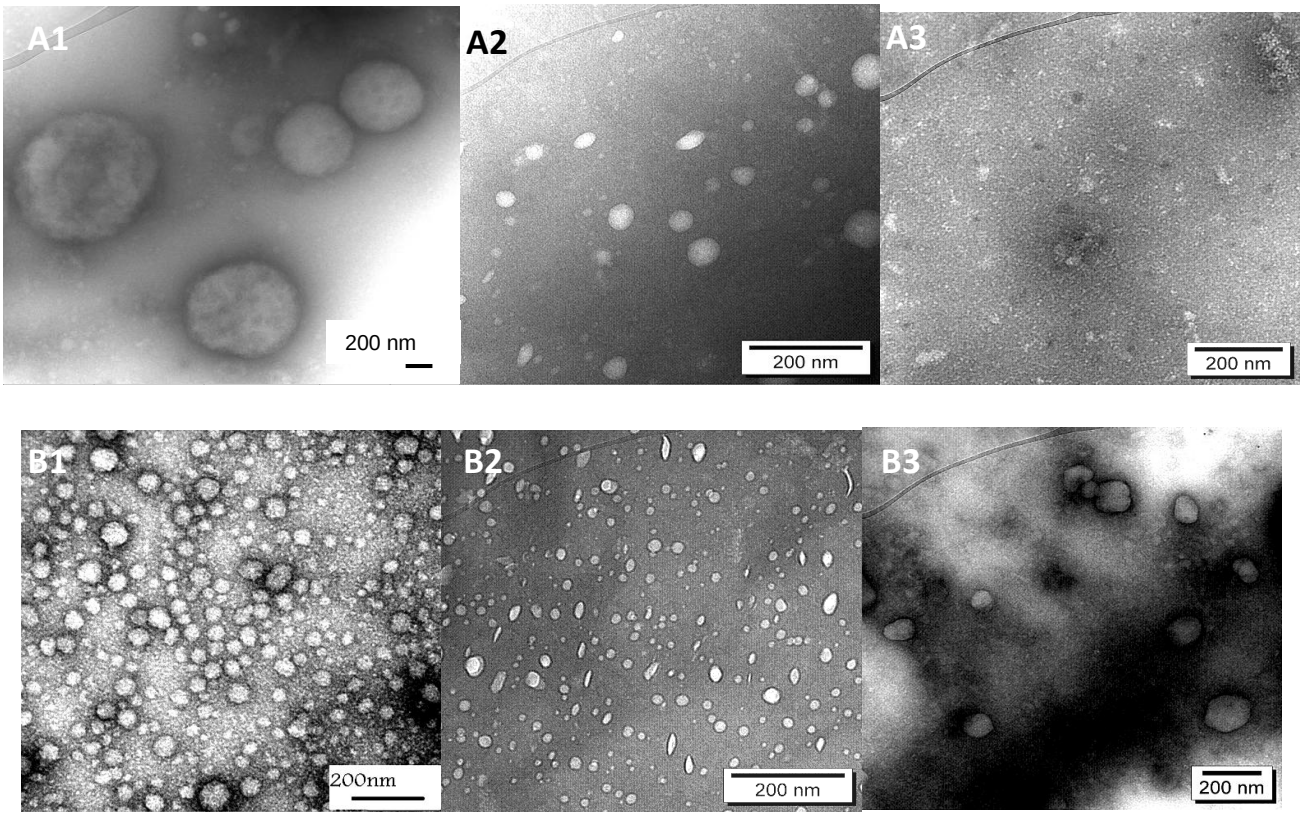

Figure 3. Negative-stained TEM of A) Ch_5 formulations with 1) propofol, 2) prednisolone and 3) griseofulvin. B) $Dansyl_{10}$, 1) propofol, 2) prednisolone and 3) griseofulvin. All the formulations consisted of 6 $mgmL^{-1}$ polymer and 10:1 initial drug: polymer mass ratio. Bar=200nm

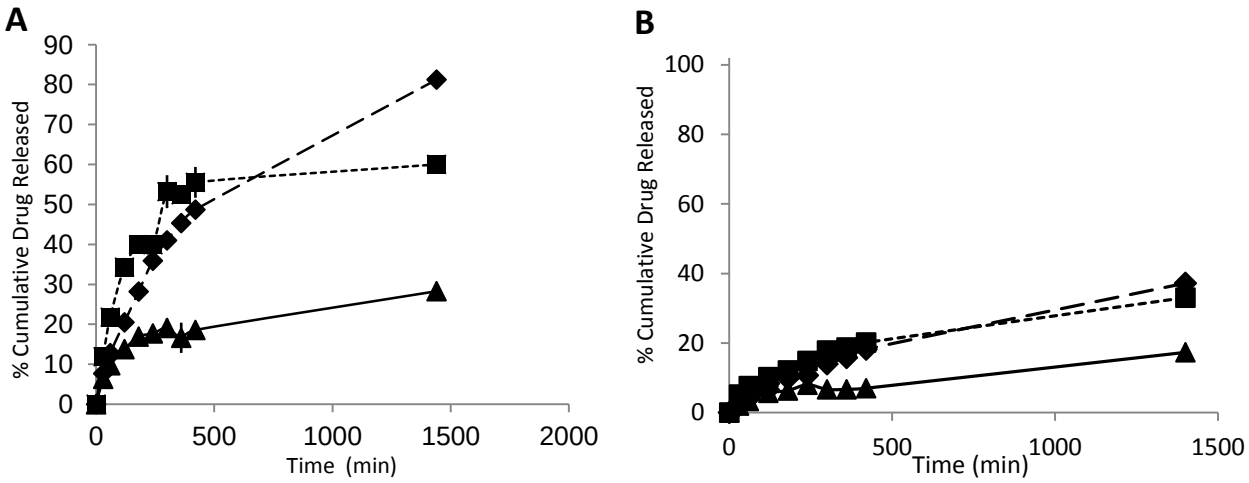

Figure 4. *In vitro* drug release of hydrophobic drugs from A) Ch5 and B) Dansyl10 formulations carried out in sink conditions. ◆ propofol ; ■ prednisolone ▲ griseofulvin. Data presented as n=3, ave ± s.d.

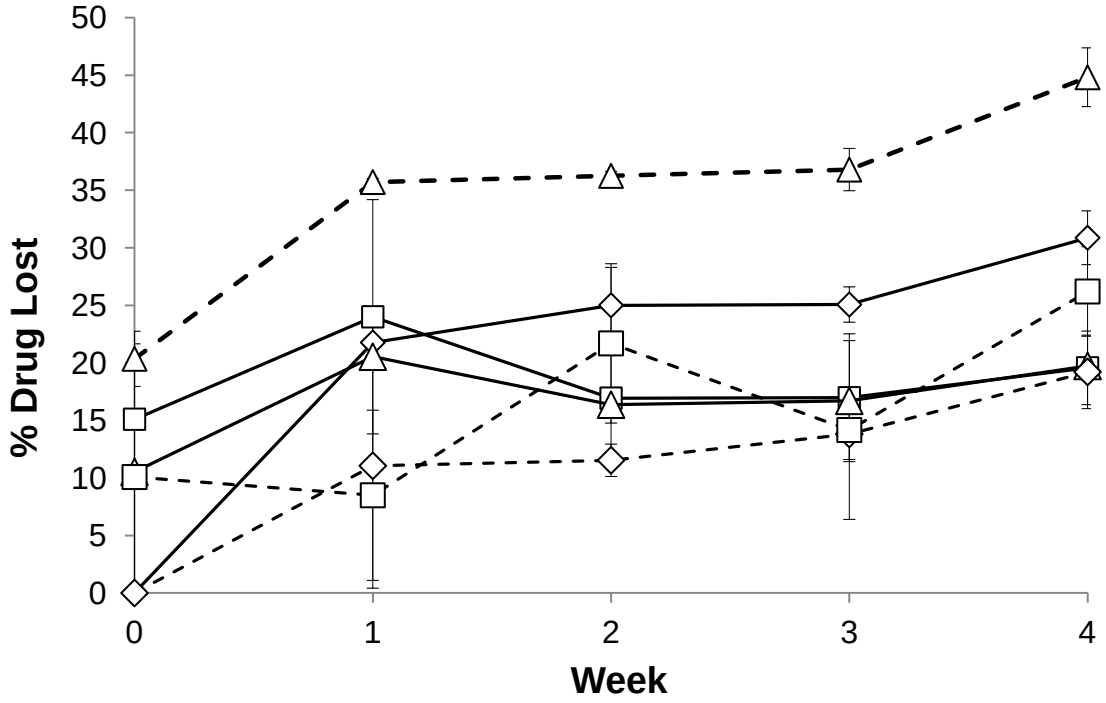

Figure 5. Percentage drug lost from Ch_5 (solid line) and $Dansyl_{10}$ (dashed line) formulations over 4 weeks stored in 55 % humidity, at room temperature and protected from light. Propofol stored in solution, prednisolone and griseofulvin formulations stored as freeze dried 'cakes'. ◇ propofol ; □ prednisolone; △ griseofulvin. Data presented as n=3, ave ± s.d.

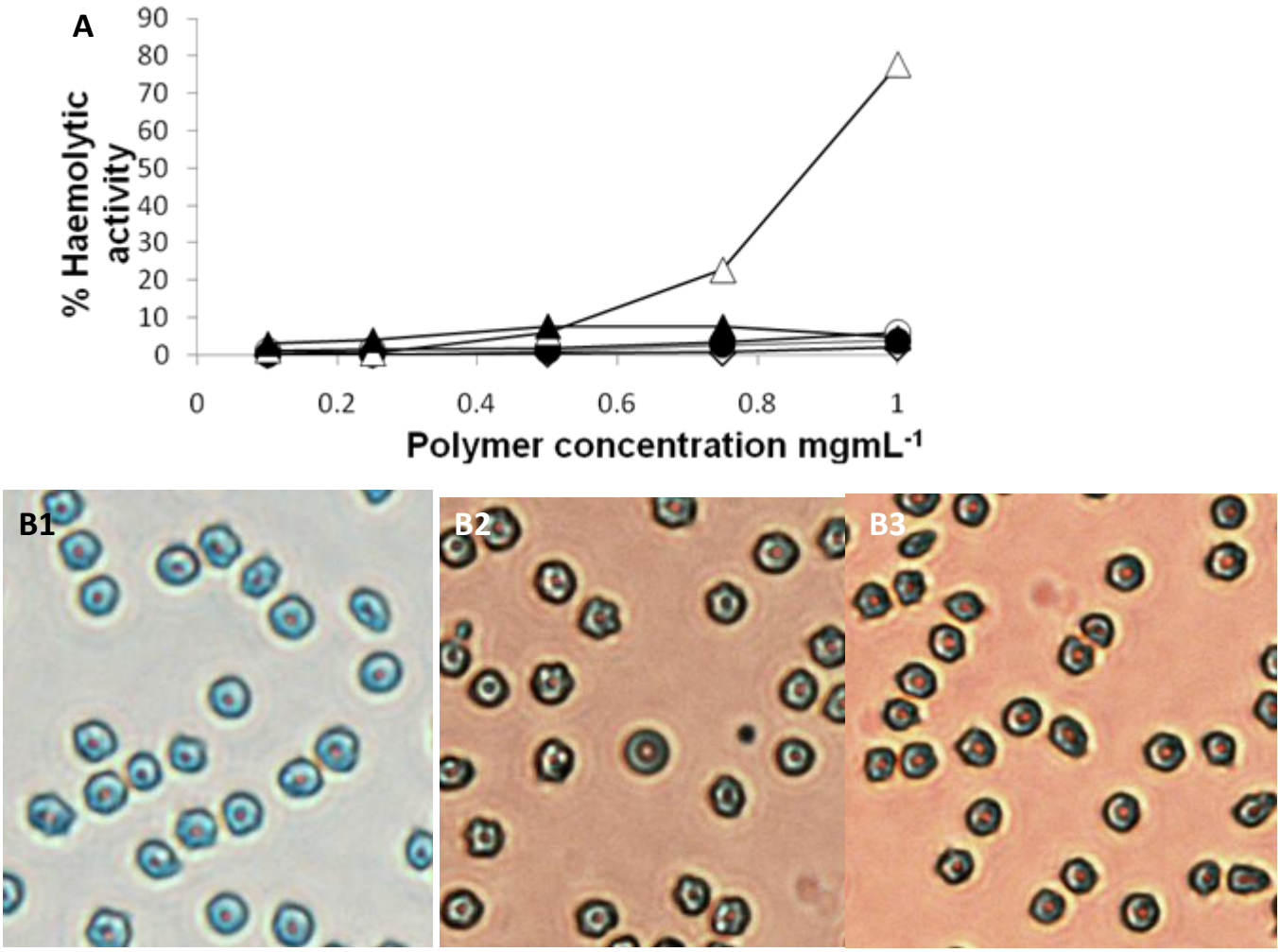

Figure 6. Effect of PAA and its amphiphilic PAA polymers on bovine red blood cells. **A)** % Haemolysis of ◇PAA; △Dansyl $_5$; ▲Dansyl$_{10}$; ○Fmoc$_5$; ● Fmoc$_{10}$. Data presented as n=3, ave ± s.d. **B)** Morphology of red blood cells upon 4h incubation with 1) PBS control; 2) Dansyl$_5$; 3) Dansyl$_{10}$ (1 mgmL^{-1}) (100x magnification)

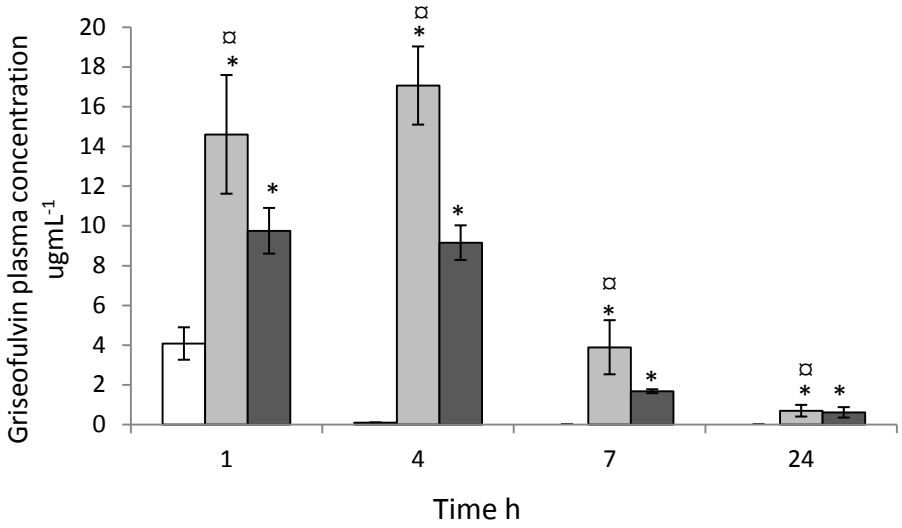

Figure 7. Mean plasma griseofulvin concentration (μgmL^{-1}) following administration of griseofulvin by oral gavage in rats. □ Griseofulvin in water; ▒ Ch5, griseofulvin and ■ $Dansyl_{10}$, griseofulvin. Data presented as n=4, ave± s.d. * $p<0.0001$ polymer formulations vs. griseofulvin in water, ¤ $p < 0.001$ $Dansyl_{10}$, vs. Ch_5.

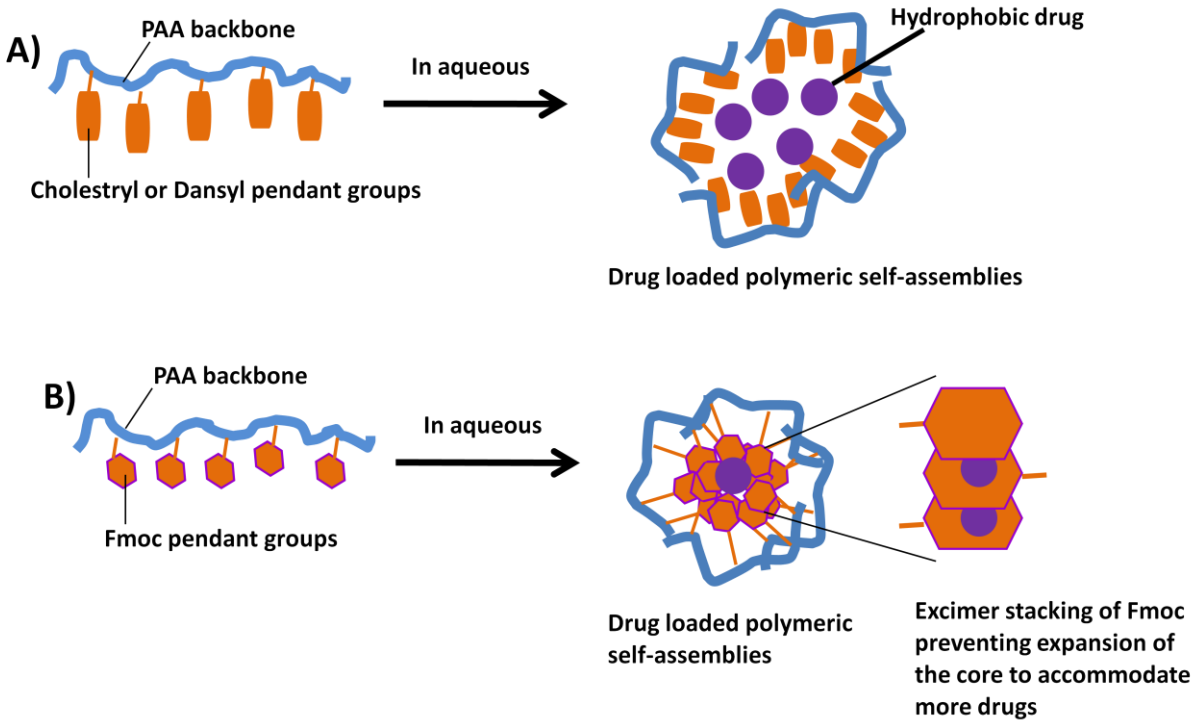

Figure 8. Proposed drug loaded polymeric self-assemblies structures in aqueous environment A) Ch and Dansyl-PAA and B) Fmoc-PAA

Legends to figures

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Figure 7. Mean plasma griseofulvin concentration (μgmL^{-1}) following administration of griseofulvin by oral gavage in rats. Griseofulvin in water; □ Ch_5, griseofulvin and ▒ $Dansyl_{10}$, griseofulvin. Data presented as n=4, ave± s.d. * $p<0.0001$ polymer formulations vs. griseofulvin in water, ¤ $p < 0.001$ $Dansyl_{10}$, vs. Ch_5

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