

List of Abbreviations and Symbols:

Alkyl chain length	m
Avogadro's number	N_A
Butanediyl-1,4-bis(N,N-dimethyl-N-decyl-ammonium) dibromide	10-4-10
Butanediyl-1,4-bis(N,N-dimethyl-N-dodecyl-ammonium) dibromide	12-4-12
Butanediyl-1,4-bis(N,N-dimethyl-N-tetradecyl-ammonium) dibromide	14-4-14
Chemical shift value in NMR	δ
Chloroform	CHCl_3
Chloroacetyl chloride	CAC
Concentration	[]
Critical micelle concentration	CMC
Deuterium oxide	D_2O
Dichloromethane	DCM
D-isosorbate-1,4-diyl bis(N,N-dimethyl-N-decyl-ammonium acetoxo) dichloride	10-Isb-10
D-isosorbate-1,4-diyl bis(N,N-dimethyl-N-dodecyl-ammonium acetoxo) dichloride	12-Isb-12
D-isosorbate-1,4-diyl bis(N,N-dimethyl-N-tetradecyl-ammonium acetoxo) dichloride	14-Isb-14
Dodecyl dihydrogenphosphate	DDPH
Ethane-1,2-diyl bis(N,N-dimethyl-N-decyl-ammonium acetamide) dichloride	10-Eda-10
Ethane-1,2-diyl bis(N,N-dimethyl-N-decyl-ammonium acetoxo) dichloride	10-Eg-10
Ethane-1,2-diyl bis(N,N-dimethyl-N-dodecyl-ammonium acetamide) dichloride	12-Eda-12
Ethane-1,2-diyl bis(N,N-dimethyl-N-dodecyl-ammonium acetoxo) dichloride	12-Eg-12
Ethane-1,2-diyl bis(N,N-dimethyl-N-tetradecyl-ammonium acetamide) dichloride	14-Eda-14
Ethane-1,2-diyl bis(N,N-dimethyl-N-tetradecyl-ammonium acetoxo) dichloride	14-Eg-14

acetoamide) dichloride	12-Eda-12
Ethane-1,2-diyl bis(N,N-dimethyl-N-dodecyl-ammonium acetoxy)	
Dichloride	12-Eg-12
Ethane-1,2-diyl bis(N,N-dimethyl-N-tetradecyl-ammonium	
acetoamide) dichloride	14-Eda-14
Ethane-1,2-diyl bis(N,N-dimethyl-N-tetradecyl-ammonium acetoxy)	
Dichloride	14-Eg-14
Fourier transform infrared spectroscopy	FT-IR
Half maximal inhibitory concentration value	IC_{50}
Hydrodynamic diameter	D_h
Ideal gas constant	R
Micelle-water partition coefficient	K_m
Molar extinction coefficient	ε
Molar solubilization ratio	MSR
Molar volume of water	V_m
Nitrogen	N_2
Nuclear magnetic resonance	NMR
Onset degradation temperature	T_o
Phosphoric acid, <i>P,P'</i> -1,4-butanediyl <i>P,P'</i> -ditetradecyl ester, disodium	
Salt	12-4-12A
Phosphate buffer saline	PBS
Polycyclic aromatic hydrocarbon	PAH
Pyrophosphoric acid	PPA
Ratio of first and third vibrational peak of fluorescence spectra of	
Pyrene	I_1/I_3

Spacer	s
Specific conductance	κ
Standard Gibbs free energy of solubilization	ΔG_s^0
Start to onset degradation temperature ratio	$T_{s/o}$
Starting degradation temperature	T_s
Temperature	T
Tetramethylammonium hydroxide	TMAOH
Thin layer chromatography	TLC
Thermal gravimetric analyzer	TGA
Transition electron microscope	TEM
Wavelength of maximum absorbance	$\lambda_{\max}$
Zeta-potential	ζ
3-(4, 5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide	MTT
2,2-diphenyl-1-picrylhydrazyl	DPPH