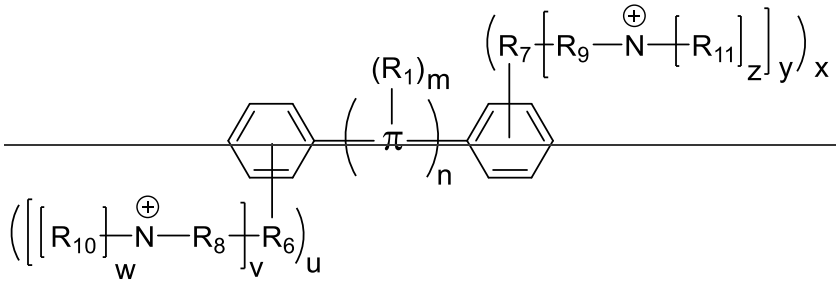
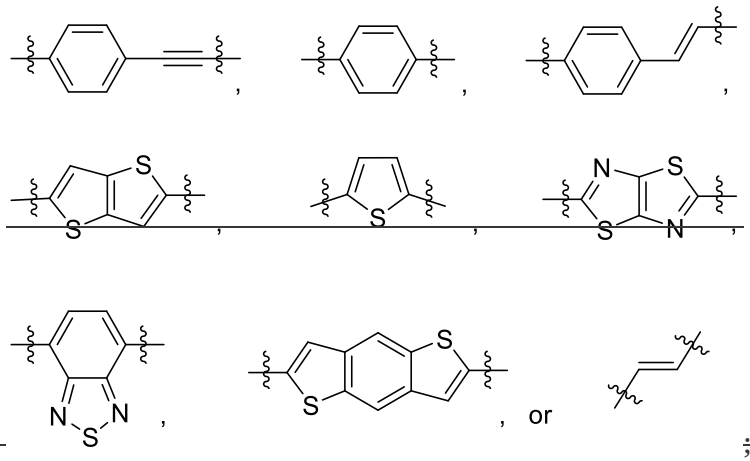
CLAIMS

1. A conjugated oligoelectrolyte (COE) having a structural Formula 4:



(Formula 4),

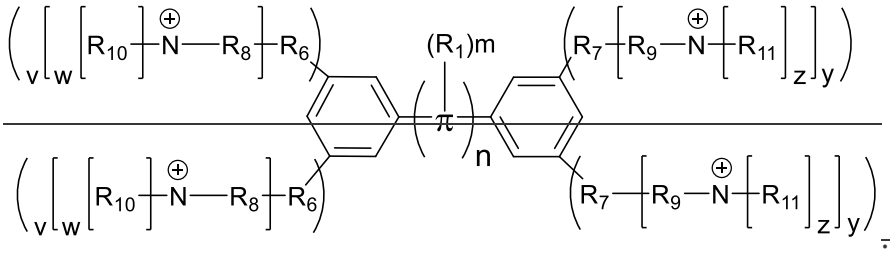
or a pharmaceutically acceptable isomer, racemate, hydrate, solvate, isotope, or salt thereof,



wherein π is , , or ; n is 0, 1, 2, 3, 4, 5 or 6; m is 0, 1, 2, 3 or 4 and in which R_1 is, independently, an electron withdrawing group or an electron donating group, optionally two or more R_1 combine to form a cyclic or aromatic group; x and u represent the numbers of substitutions on the phenyl group and are, independently, 1, 2, 3, 4, or 5; R_6 and R_7 are, independently, O or N; y and v represent the numbers of substitutions on R_7 and R_6, respectively, and are, independently, 1 for O and 1 or 2 for N; R_8 and R_9 are, independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl or aryl; $N^{\oplus}$ each represents a quaternary ammonium or a pyridinium cationic group; z and w represent the numbers of substitutions on $N^{\oplus}$ and are, independently, 0, 1, 2, 3, 4 or 5, if valences permit; R_{10} and R_{11} are,

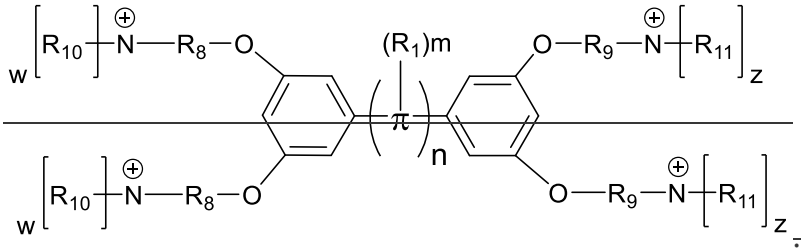
~~independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl or aryl; and the counter ions is I^-, Br^-, Cl^-, F^-, organic anion, BIm_4^- or $B(ArF)_4^-$.~~

~~2. The COE of Claim 1, wherein Formula 4 has the structure:~~

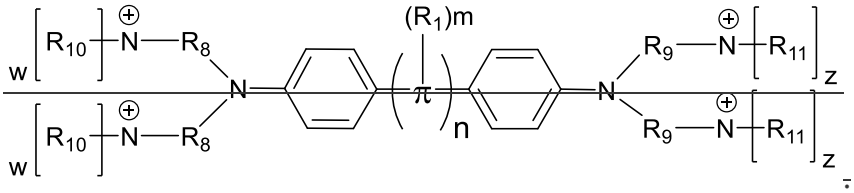


~~3. The COE of Claim 1 or 2, wherein R_6 and R_7 are independently, O or N.~~

~~4. The COE of Claim 1, wherein Formula 4 has the structure:~~



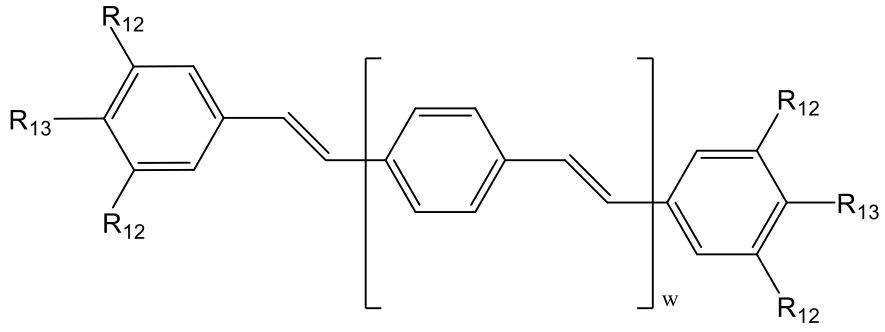
~~5. The COE of Claim 1, wherein Formula 4 has the structure:~~



~~6. The COE of any one of Claims 1-5, wherein R_8 and R_9 are each C_2-C_{10} alkyl.~~

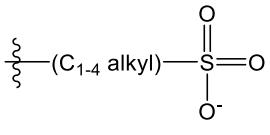
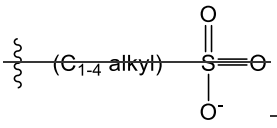
~~7. The COE of any one of Claims 1-6, wherein each z is 2; each w is 2; a R_{10} is methyl; a R_{10} is C_2-C_6 alkyl; a R_{11} is methyl; and a R_{11} is C_2-C_6 alkyl.~~

~~8.~~1. A conjugated oligoelectrolyte (COE) having a structural Formula 5:



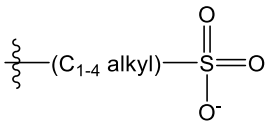
(Formula 5),

or a pharmaceutically acceptable isomer, racemate, hydrate, solvate, isotope, or salt thereof,

wherein each R_{12} is independently –O-R_{14}-N(R_{15})$_3$ or –O-R_{14}-R_{17}; each R_{13} is ~~independently H or R_{12}~~; R_{14} and R_{16} are independently C_2-C_{10} alkyl; each R_{15} is independently C_1-C_{10} alkyl, hydroxyalkyl, aminoalkyl,  or –((CH_2)$_2$–O)$_{1-4}$-CH_3, and each R_{15} cannot be methyl, or two R_{15} are taken together with the nitrogen to which they are attached to form a monocyclic N-linked heterocyclyl or a bicyclic N-linked heterocyclyl, and the remaining R_{15} is C_1-C_{10} alkyl; R_{17} is ~~an unsubstituted or substituted N-linked pyridinyl, -~~(C_2-C_3 alkyl)N(R_{18})$_3$ or –NH–(=NH)NH_2; each R_{18} is independently C_2-C_{10} alkyl~~, hydroxyalkyl, aminoalkyl,  or ((CH_2)$_2$-O)$_{1-4}$-CH_3~~; w is 0, 1 or 2; and the counter ions include I^-, Br^-, Cl^-, F^-, organic anion, BIm_4^- or $B(ArF)_4^-$.

~~9.~~2. The COE of Claim ~~8~~1, wherein R_{12} is –O-R_{14}-N(R_{15})$_3$.

~~10. The COE of Claim 8, wherein R_{14} is C_2-C_{10} alkyl.~~

~~11.~~3. The COE of ~~any one of Claims 8-10~~Claim 2, wherein a R_{15} is methyl; a R_{15} a is  methyl or C_2-C_{10} alkyl; and a R_{15} is C_2-C_{10} alkyl, hydroxyalkyl, aminoalkyl, or –((CH_2)$_2$–O)$_{1-4}$-CH_3.

~~12. The COE of any one of Claims 8-11, wherein R_{13} is H.~~

~~13.~~4. The COE of Claim ~~8-10~~2, wherein two R_{15} are taken together with the nitrogen to which they are attached to form a monocyclic N-linked heterocyclyl; and the remaining R_{15} is C_1-C_{10} alkyl.

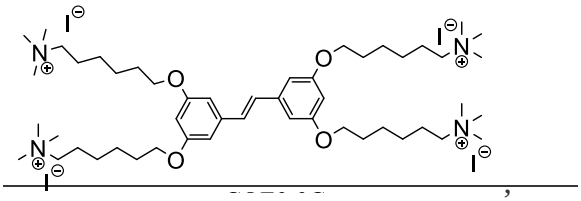
~~14.~~5. The COE of Claim ~~13~~4, wherein the monocyclic N-linked heterocyclyl is 5-membered or a 6-membered monocyclic N-linked heterocyclyl.

6. The COE of Claim 1, wherein R_{12} is–O-R_{14}-R_{17}.

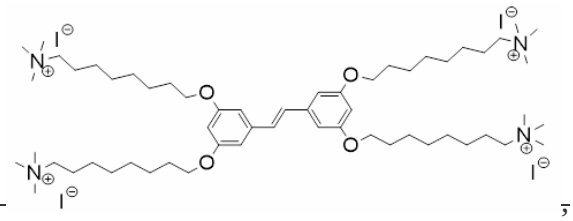
7. The COE of Claim 6, wherein R_{17} is -(C_2-C_3 alkyl)N(R_{18})$_3$.

8. The COE of Claim 6, wherein R_{17} is –NH–(=NH)NH_2.

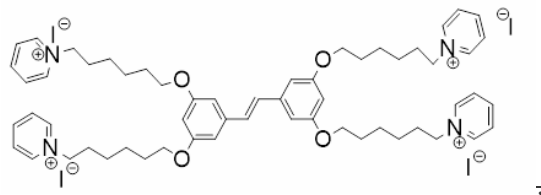
~~15.~~9. A COE a structure selected from the group consisting of:



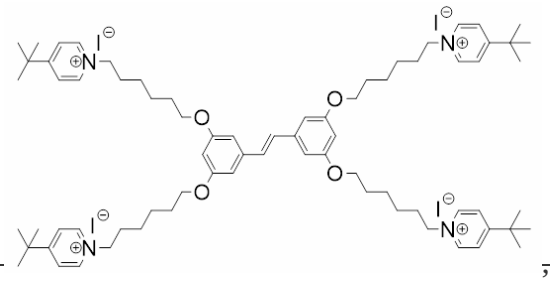
Formula A (“COE2-2C”)



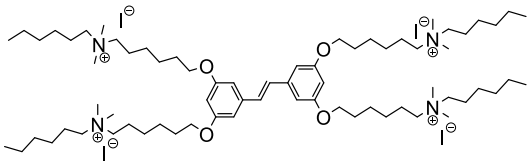
Formula B (“COE2-2C-C8”)



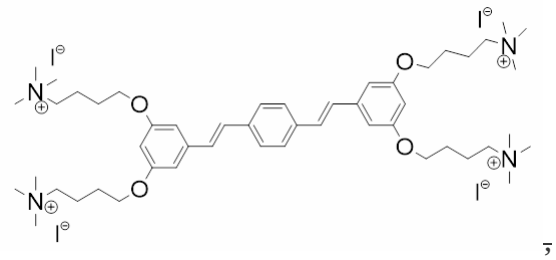
Formula C (“COE2-2py”)



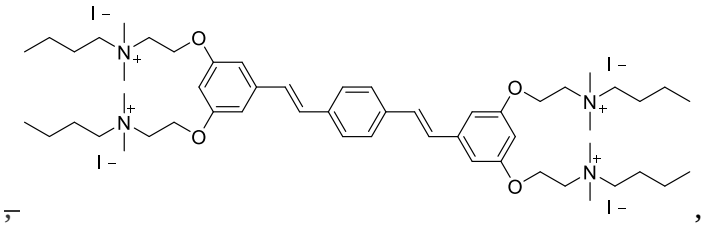
Formula D (“COE2-2B”)



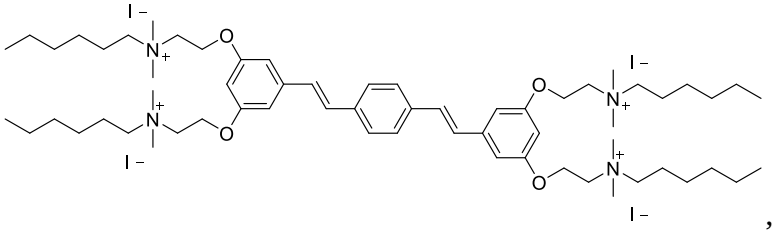
Formula E (“COE2-2hexyl”)



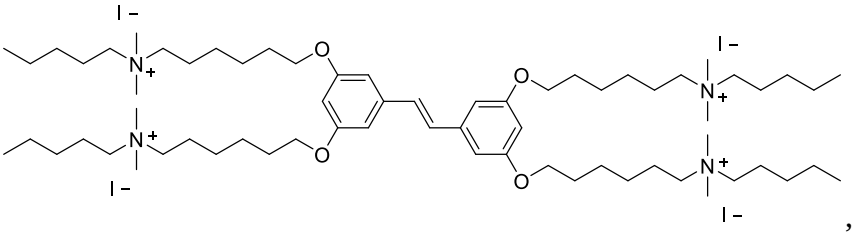
Formula F (“COE2-3C-C4”)



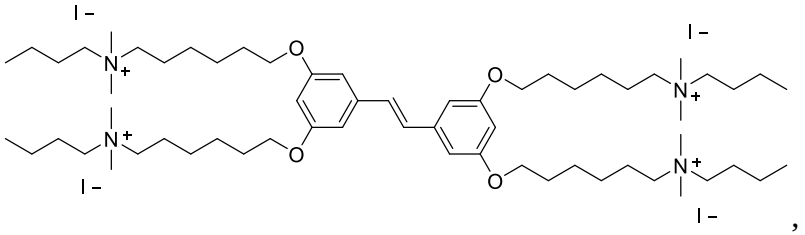
Formula G (“COE2-3C-C2butyl”)



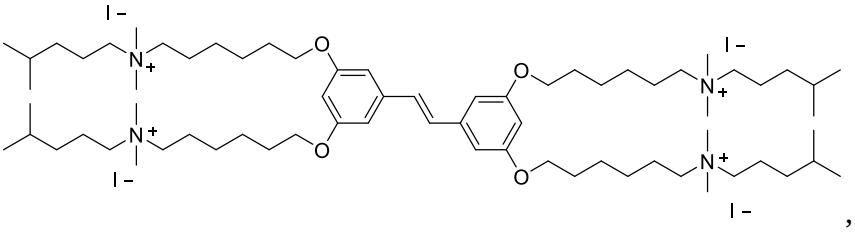
Formula H (“COE2-3C-C2hexyl”)



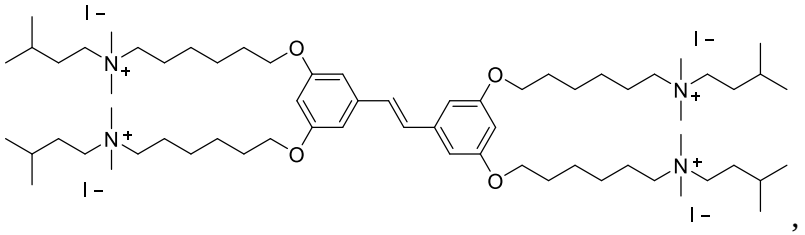
Formula J (“COE2-2pentyl”)



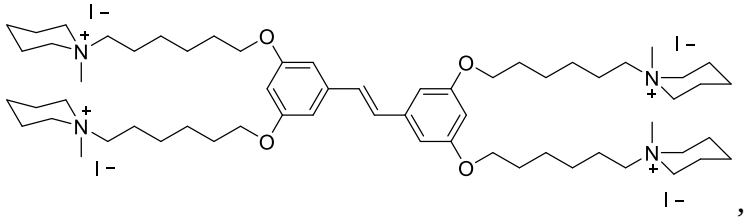
Formula K (“COE2-2butyl”)



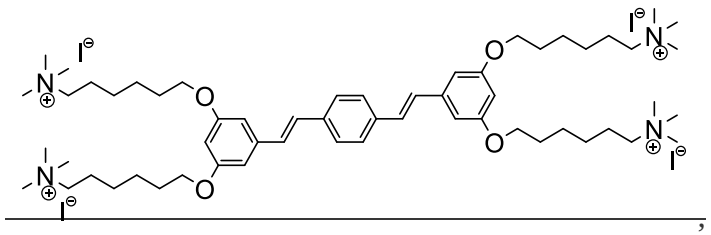
Formula L (“COE2-2isohexyl”)



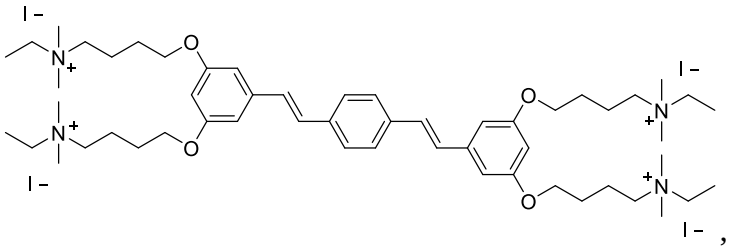
Formula M (“COE2-2isopentyl”)



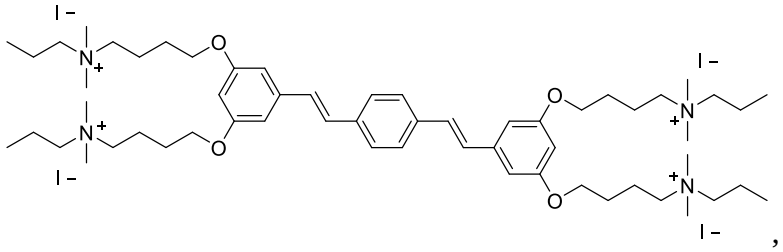
Formula N (“COE2-2pip”)



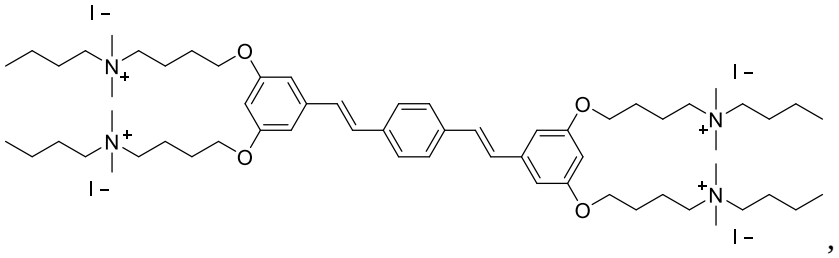
~~Formula O ("COE2-3C")~~



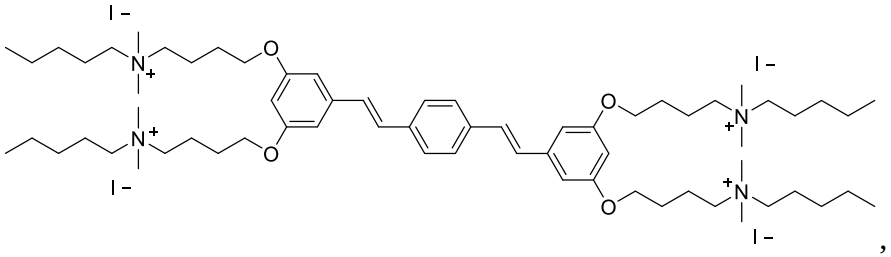
Formula P ("COE2-3C-C4ethyl")



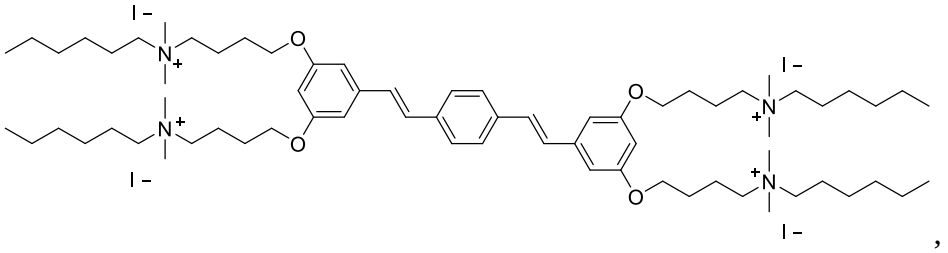
Formula Q ("COE2-3C-C4propyl")



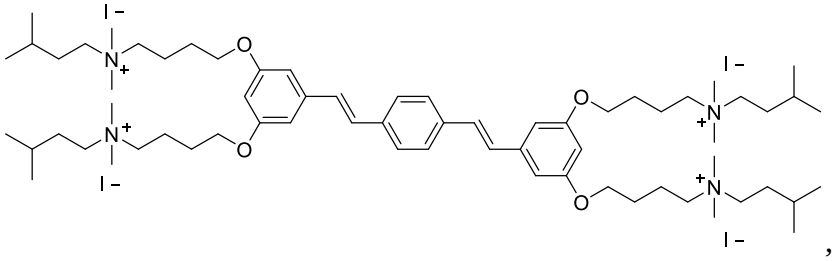
Formula R ("COE2-3C-C4butyl")



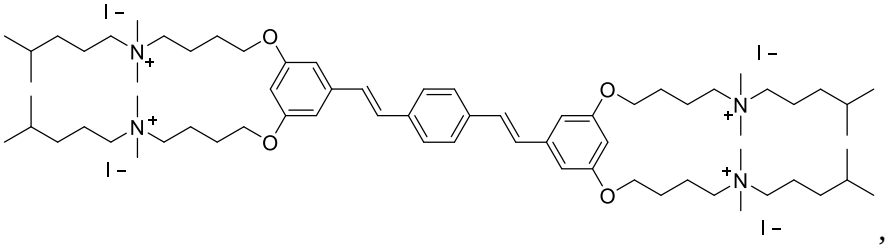
Formula S ("COE2-3C-C4pentyl")



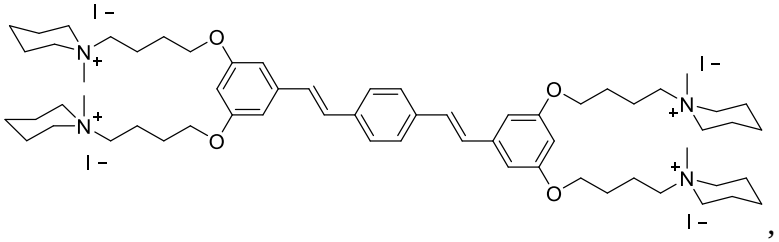
Formula T (“COE2-3C-C4hexyl”)



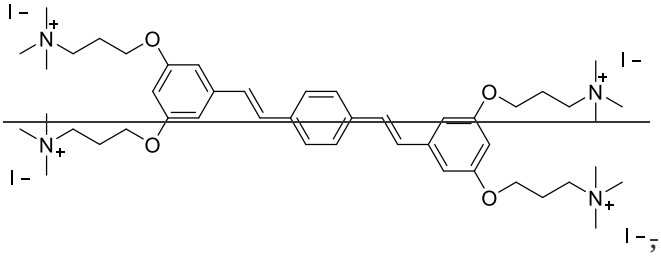
Formula U (“COE2-3C-C4isopentyl”)



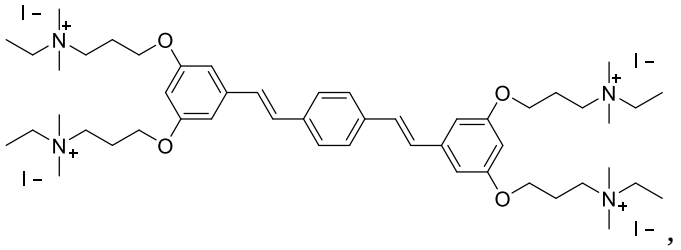
Formula V (“COE2-3C-C4isohexyl”)



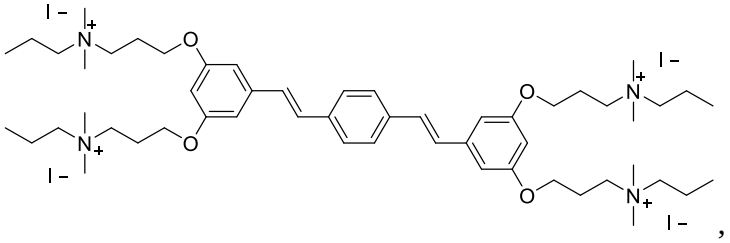
Formula W (“COE2-3C-C4pip”)



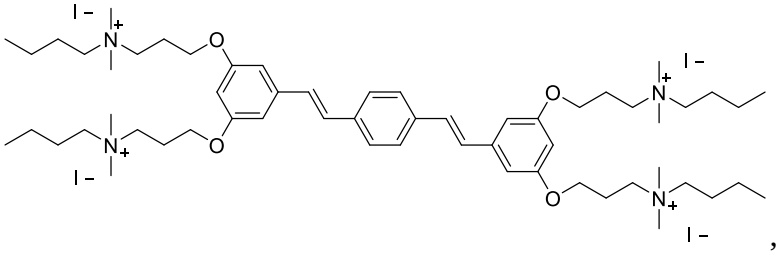
~~Formula X (“COE2-3C-C3”)~~



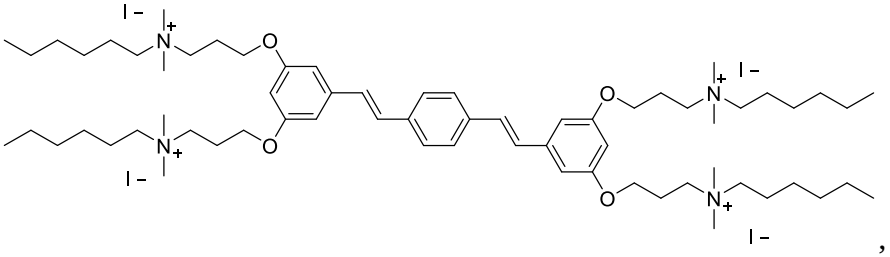
Formula Y (“COE2-3C-C3ethyl”)



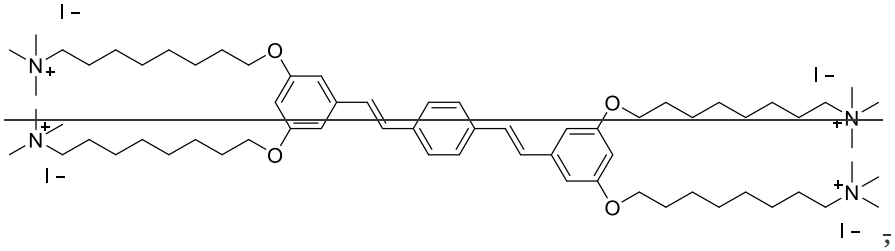
Formula Z (“COE2-3C-C3propyl”)



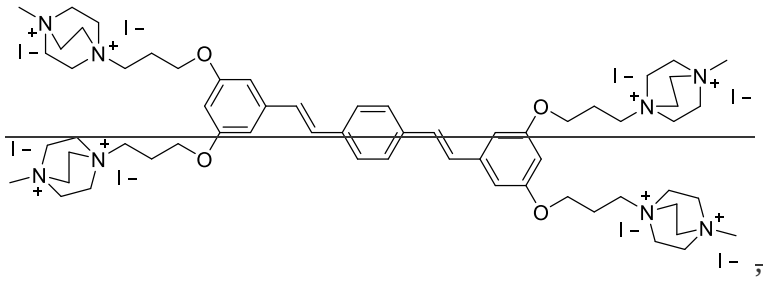
Formula AA (“COE2-3C-C3butyl”)



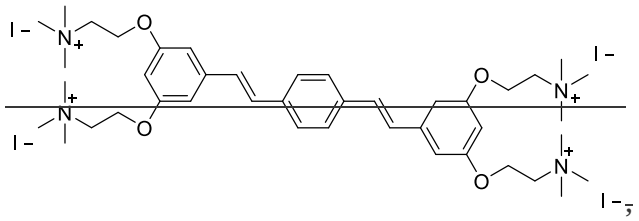
Formula BB (“COE2-3C-C3hexyl”)



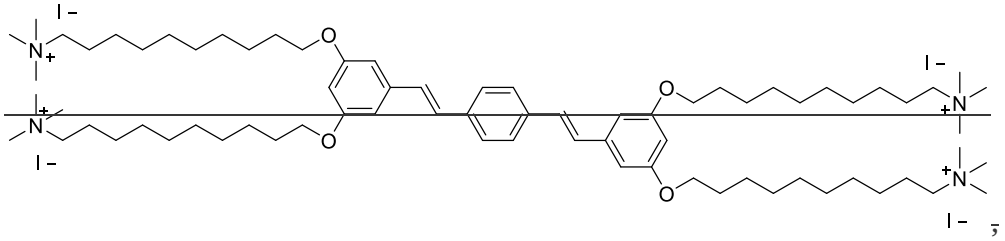
~~Formula CC (“COE2-3C-C8”)~~



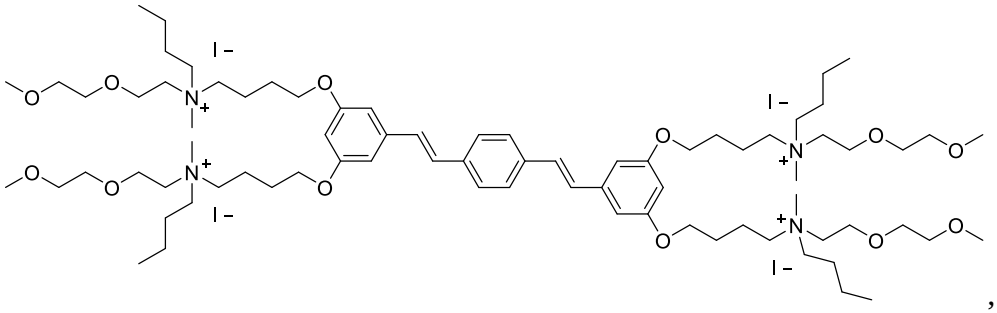
~~Formula DD ("COE2-3C-C3DABCO")~~



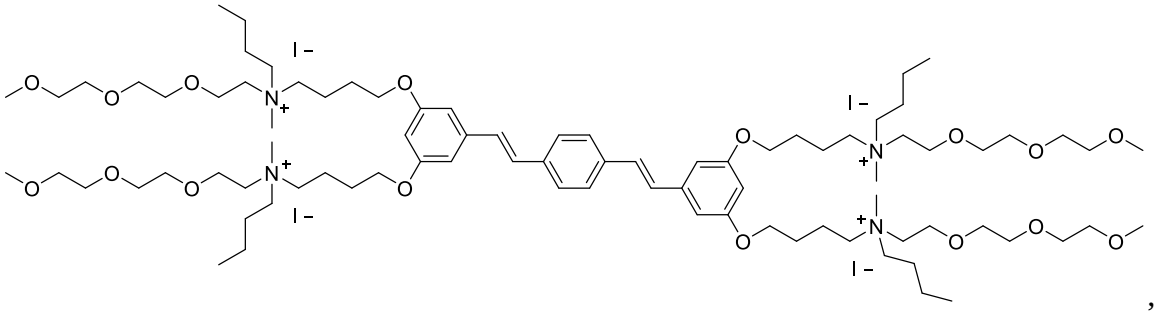
~~Formula EE ("COE2-3C-C2")~~



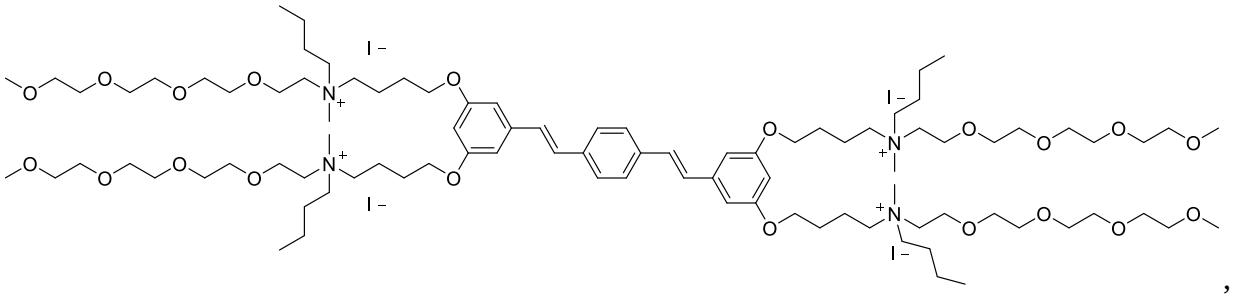
~~Formula FF ("COE2-3C-C10")~~



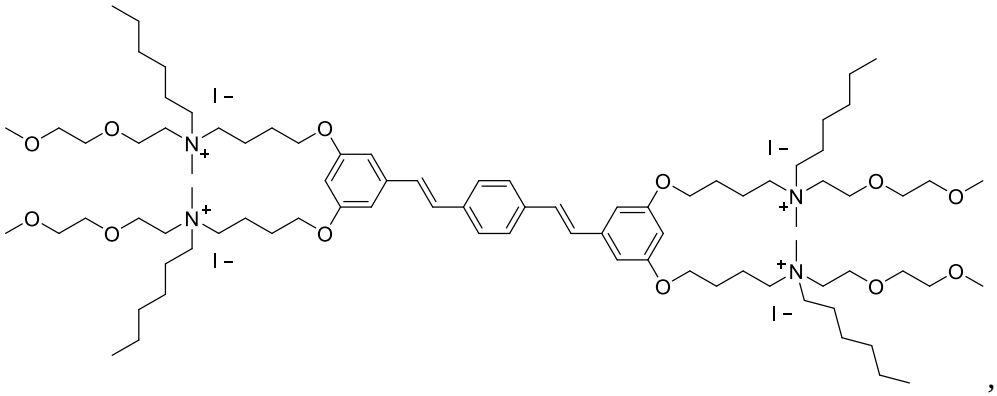
Formula GG ("COE2-3C-C4MeC4P2")



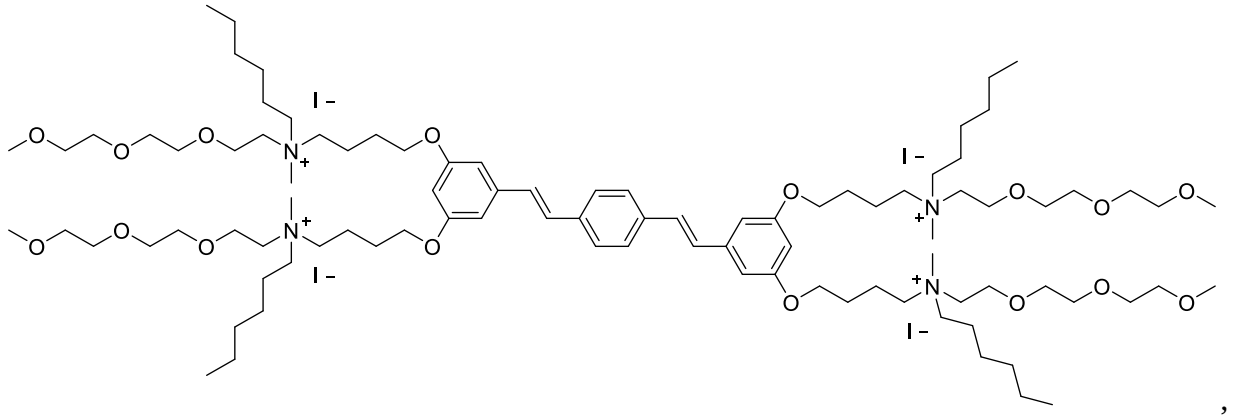
Formula HH (“COE2-3C-C4MeC4P3”)



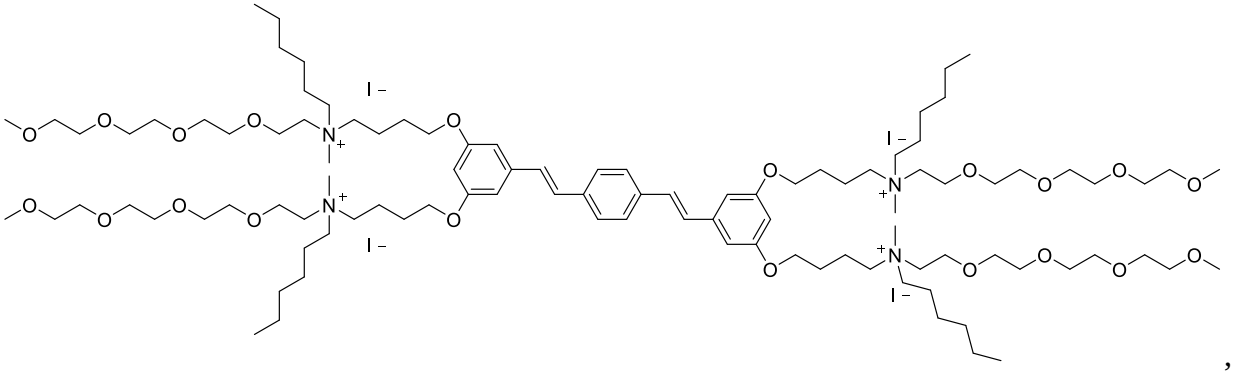
Formula II (“COE2-3C-C4MeC4P4”)



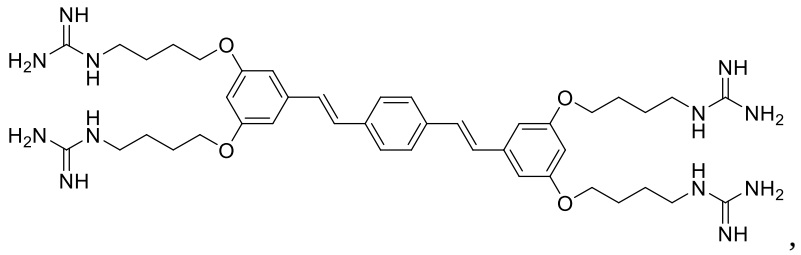
Formula JJ (“COE2-3C-C4MeC6P2”)



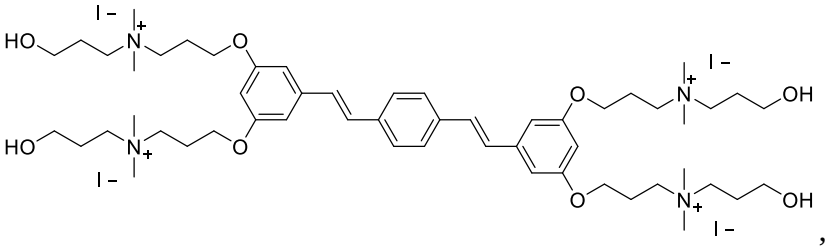
Formula KK (“COE2-3C-C4MeC6P3”)



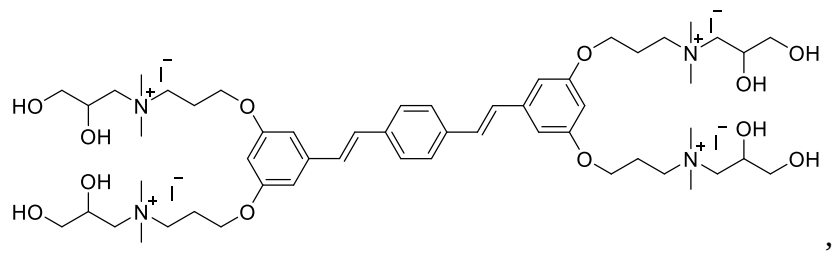
Formula LL (“COE2-3C-C4MeC6P4”)



Formula MM (“COE 2-3C-C4guanidine”)

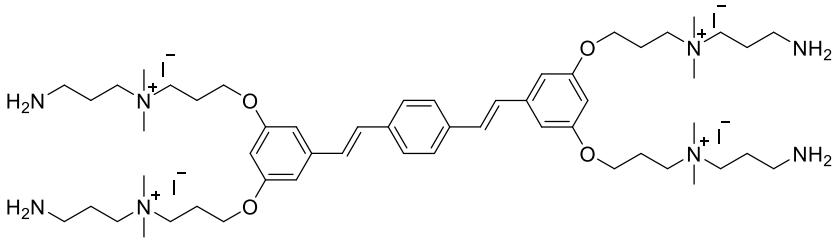


Formula NN (“COE2-3C-C3propyl-OH”)



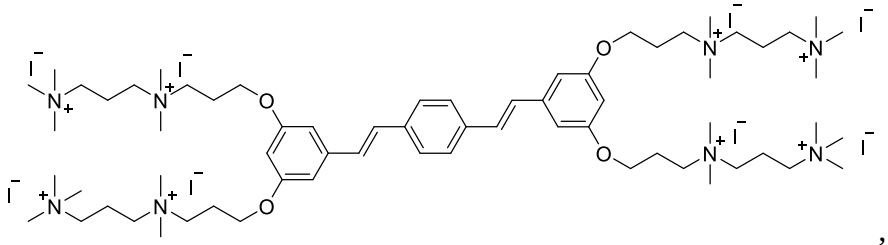
,

Formula OO (“COE2-3C-C3glycerol”)



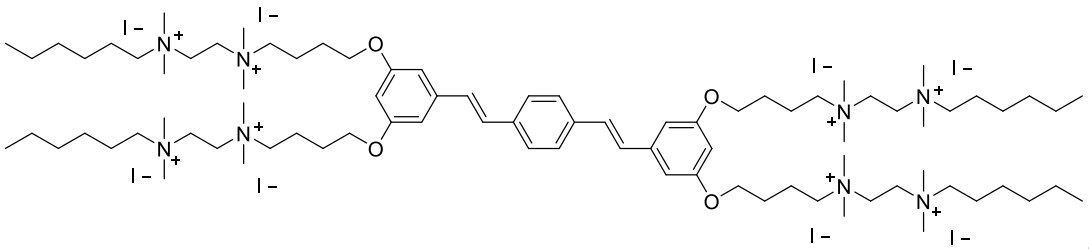
,

Formula PP (“COE2-3C-C3propyl-NH2”)



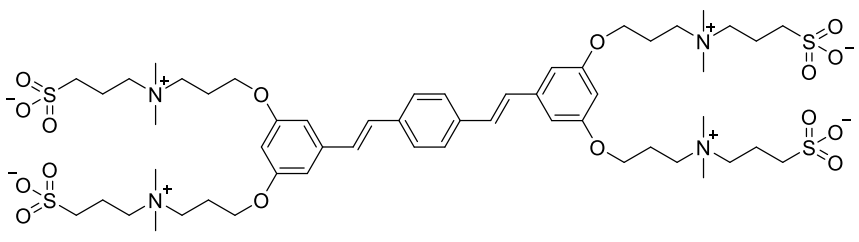
,

Formula QQ (“COE2-3C-C3propyl-NMe3”)



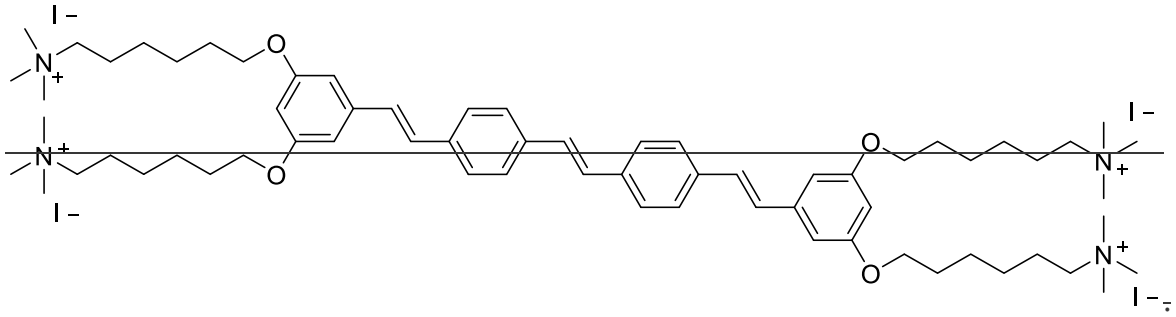
, and

Formula RR (“COE2-3C-C4-en-hexyl”)



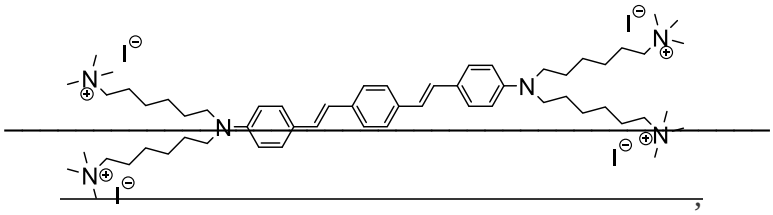
, ~~and~~

Formula SS (“COE2-3C-C3propyl-SO3”).

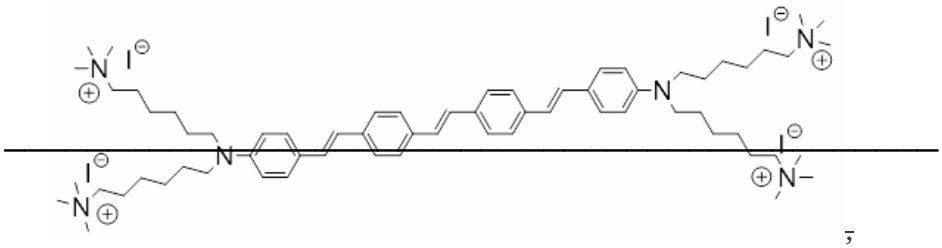


Formula TT (“COE2-4C”)

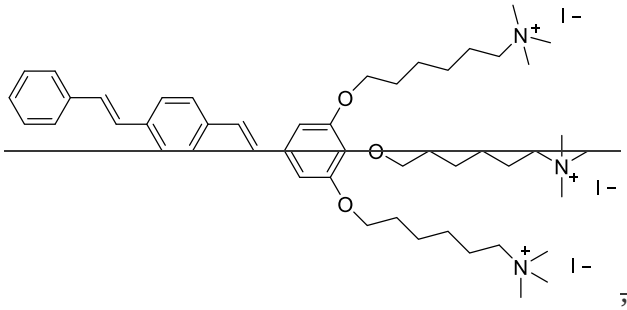
16. A COE having a structure selected from the group consisting of:



Formula UU (“DSBN”)

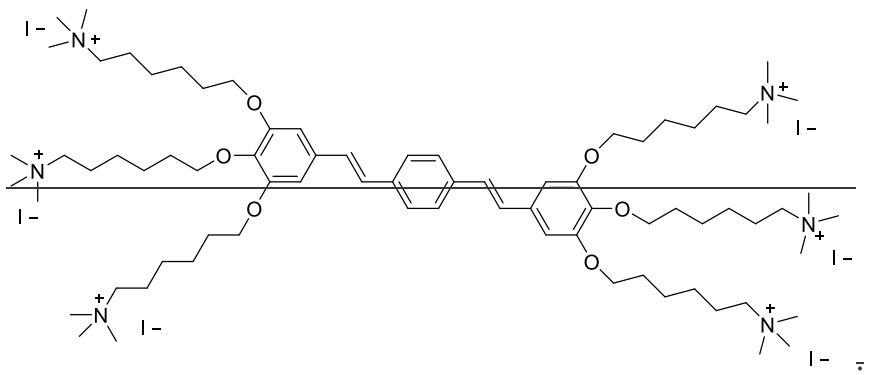


Formula VV (“DSSN”)



, and

Formula WW (“COE2-3C-0,3”)



~~Formula XX ("COE2-3C-3,3")~~

~~17.~~10. The COE of any one of Claims 1-~~16~~9, having a minimum inhibition concentration (MIC) of no greater than 1 μg/mL, between 1-5 μg/mL, or between 5-15 μg/mL against one or more bacteria selected from the group consisting of ST ATCC 14028, EC ATCC 25922, PA ATCC 10145, KPN ATCC13883, MRSA USA300, MSSA Newman, MRSA MT3302, MRSA MT3315, and MSSA MT3305.

~~18.~~11. A pharmaceutical composition comprising an effective amount of the COE of any one of Claims 1-~~16~~9; and a pharmaceutically acceptable excipient.

~~19.~~12. Use of an effective amount of a conjugated oligoelectrolyte (COE) of any one of Claims 1-~~16~~ 9 in the preparation of a medicament for treating, reducing the severity of and/or slowing the progression of a bacterial infection.

~~20.~~13. The use of Claim ~~19~~12, wherein the bacterial infection is due to a bacteria selected from the group consisting of *Salmonella enterica* Typhimurium, *E. coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, methicillin-resistant *S. aureus*, methicillin-sensitive *S. aureus*, *E. faecium*, *A. baumannil*, *E. cloacae*, *S. epidermidis*, *K. aerogenes*, *S. flexneri*, *Y. pseudotuberculosis*, *N. gonorrhoeae*, and *S. pneumoniae*.

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