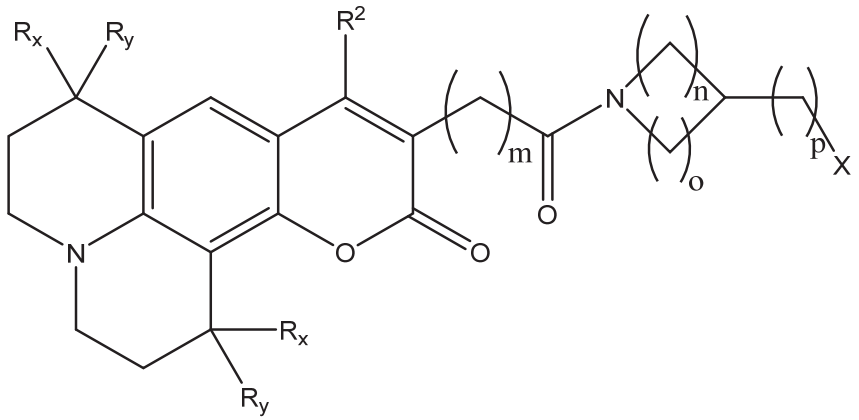
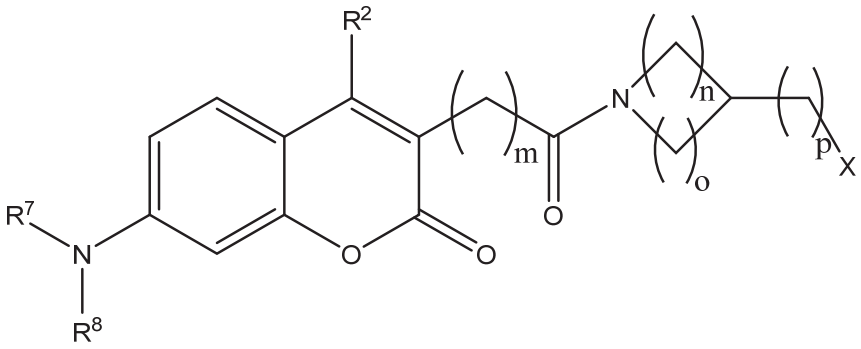
CLAIMS

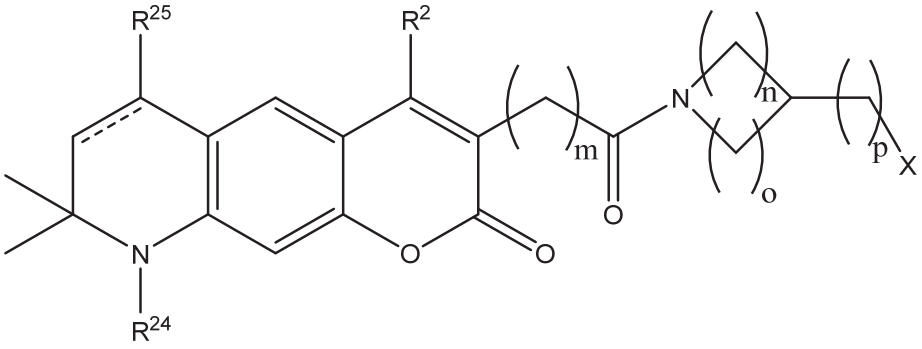
1. A compound of structure 15, 16 or 17:



Structure 15



Structure 16



Structure 17

where

m is 1, 2 or 3;

n is 1 or 2;

o is 1 or 2;

p is 0, 1, 2 or 3;

R^2 is selected from a group consisting of -H or $-CH_3$;

X is -OH, $-NH_2$, -SH, $-OR^{11}$, $-NHR^{12}$, $-NR^{13}R^{14}$, $-OC(O)R^{15}$, $-NHC(O)R^{16}$, $-SC(O)R^{17}$, $-C(O)OH$, $-C(O)OR^{18}$, $-C(O)NHR^{19}$, $-C(O)NR^{20}R^{21}$ or $-N_3$;

R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20} and R^{21} are independently selected from $(C_1\text{-}C_8)$alkyl, $(C_1\text{-}C_8)$substituted alkyl, $-CH_2CH(OH)CH_2(OH)$, $-CH(CH_2OH)_2$, $-CH_2CCH$, $-(CH_2CH_2O)_a\text{-}CH_2CH_2OH$ where a is 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10, $-P(NR^{22}R^{23})OCH_2CH_2\text{-EWG}$, $-P(O)(O^-)\text{-Oligonucleotide}$, $-(CH_2)_bCC\text{-Nucleoside}$, $-(CH_2)_bCC\text{-[Nucleoside Triphosphate]}$, $-(CH_2)_b\text{-Nucleoside}$, $-(CH_2)_b\text{-[Nucleoside Triphosphate]}$, $-(CH_2)_bNH\text{-Nucleoside}$, $-(CH_2)_bNH\text{-[Nucleoside Triphosphate]}$, $-(CH_2)_bNHC(O)(CH_2)_b\text{-Nucleoside}$, $-(CH_2)_bNHC(O)(CH_2)_b\text{-[Nucleoside Triphosphate]}$, where b is 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10;

EWG is an electron withdrawing group;

R^{22} and R^{23} are independently selected from $-CH_3$, $-CH_2CH_3$, $-CH(CH_3)_2$ or R^{22} and R^{23} together form a heterocycle; and

in the compound of structure 15, R_x and R_y are independently H or CH_3;

in the compound of structure 16, R^7 and R^8 are independently selected from H, $(C_1\text{-}C_8)$alkyl and $(C_1\text{-}C_8)$substituted alkyl, or R^7 and R^8 together form a five-, six-, or seven-membered heterocycle; and

in the compound of structure 17, R^{24} is selected from (C_1-C_8)alkyl and (C_1-C_8)substituted alkyl;

R^{25} is selected from (C_1-C_8)alkyl, (C_1-C_8)substituted alkyl and CH_2SO_3H; and

the dashed line represents an optional double bond.

2. The compound according to claim 1, wherein X is -OH, -OR^{11}, or -$OC(O)R^{15}$.

3. The compound of structure 15 or 16 according to claim 1, wherein X is selected from -NH_2, -NHR^{12}, -$NR^{13}R^{14}$ and -$NHC(O)R^{16}$.

4. The compound of structure 16 according to claim 1, wherein R^7 and R^8 are independently selected from H and (C_1-C_8)alkyl.

5. The compound of structure 17 according to claim 1, wherein R^{24} and R^{25} are (C_1-C_8)alkyl.