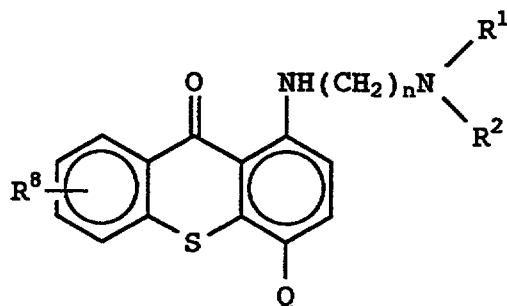


ABSTRACT
THIOXANTHENONE ANTITUMOR AGENTS

Compounds having anti-tumour activity are disclosed having the formula



wherein: (1) n is 2 or 3;

R^1 and R^2 are independently lower-alkyl;

Q is a residue chosen from the group consisting of CH_2NHR^3 , $CH_2N(R^4)SO_2R^7$, CH_2NHCHO , $CH=N-Ar$, $C(O)NR^5R^6$, $CH_2N(R^4)C(O)R^7$, $CH_2N(C_2H_5)CHO$, $CH_2N(R^4)P(O)(O-lower-alkyl)_2$, $CH_2N=CH-N(R^9)(R^{10})$, $CH_2N(R^4)C(O)CF_3$ and $CH_2N(R^4)C(O)OR^7$;

R^3 is hydrogen or lower-alkyl;

R^4 is hydrogen, lower-alkyl or Ar;

R^5 is hydrogen, lower-alkyl or Ar;

R^6 is hydrogen or lower-alkyl;

R^7 is lower-alkyl, or Ar;

R^8 is hydroxy;

Ar is phenyl or phenyl substituted with methyl, methoxy, hydroxy, halogen or nitro; and

R^9 and R^{10} are independently lower-alkyl;

or

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(2) Q is a residue chosen from the group consisting of $\text{CH}_2\text{N}(\text{R}^4)\text{SO}_2\text{R}^7$, $\text{CH}=\text{N}-\text{Ar}$, $\text{C}(\text{O})\text{NR}^5\text{R}^6$, $\text{CH}_2\text{N}(\text{R}^4)\text{C}(\text{O})\text{R}^7$, $\text{CH}_2\text{N}(\text{R}^4)\text{P}(\text{O})(\text{O-lower-alkyl})_2$, $\text{CH}_2\text{N}(\text{R}^4)\text{C}(\text{O})\text{CF}_3$ and $\text{CH}_2\text{N}(\text{R}^4)\text{C}(\text{O})\text{OR}^7$; R^8 is hydrogen, lower-alkyl, lower-alkoxy, or hydroxy; Ar is phenyl substituted by hydroxy; and n, R^1 , R^2 , R^4 , R^5 , R^6 , and R^7 are as defined hereinabove in part (1) with the proviso that one or more of R^4 , R^5 , or R^7 is Ar; or

(3) Q is a residue chosen from the group consisting of $\text{CH}_2\text{N}=\text{CH}-\text{N}(\text{R}^9)(\text{R}^{10})$, $\text{CH}_2\text{N}(\text{R}^4)\text{C}(\text{O})\text{CF}_3$ and $\text{CH}_2\text{N}(\text{R}^4)\text{C}(\text{O})\text{OR}^7$; R^8 is hydrogen, lower-alkyl, lower-alkoxy, or hydroxy; and n, R^1 , R^2 , R^4 , R^7 , Ar, R^9 and R^{10} are as defined hereinabove in part (1), or a pharmaceutically acceptable acid-addition salt or solvate thereof.

Compositions containing the thioxanthenones and methods of treating tumors and cancer in mammals with the thioxanthenones are also disclosed.

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