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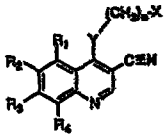
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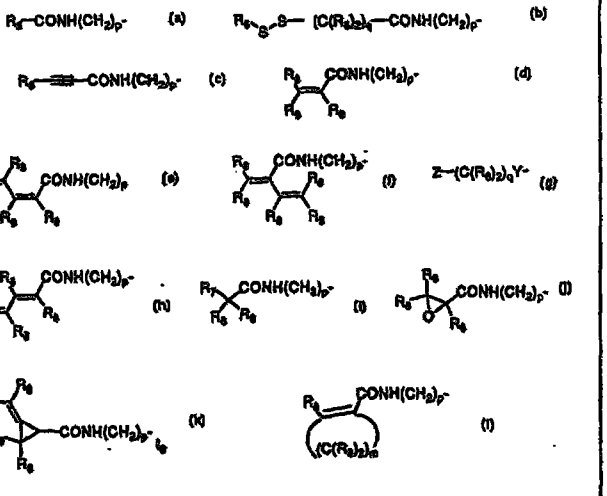
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(54) Title: SUBSTITUTED 3-CYANO QUINOLINES

(57) Abstract

This invention provides compounds having formula (1), wherein: X is cycloalkyl which may be optionally substituted; or is a pyridinyl, pyrimidinyl, or phenyl ring; wherein the pyridinyl, pyrimidinyl, or phenyl ring may be optionally substituted; n is 0–1; Y is –NH–, –O–, –S–, or –NR–; R is alkyl of 1–6 carbon atoms; R_1, R_2, R_3 and R_4 are each, independently, hydrogen, halogen, alkyl, alkenyl, alkynyl, alkenyloxy, alkynyloxy, hydroxymethyl, halomethyl, alkanoyloxy, alkenoyloxy, alkynoyloxy, alkanoyloxymethyl, alkenoyloxymethyl, alkynoyloxymethyl, alkoxymethyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylsulfonamido, alkenylsulfonamido, alkynylsulfonamido, hydroxy, trifluoromethyl, cyano, nitro, carboxy, carboalkoxy, carboalkyl, phenoxy, phenyl, thiophenoxy, benzyl, amino, hydroxyamino, alkoxyamino, alkylamino, dialkylamino, aminoalkyl, N–alkylaminoalkyl, N,N–dialkylaminoalkyl, phenylamino, benzylamino, formulae (a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q or r); R_5 is alkyl which may be optionally substituted, or phenyl which may be optionally substituted; R_6 is hydrogen, alkyl, or alkenyl; R_7 is chloro or bromo; R_8 is hydrogen, alkyl, aminoalkyl, N–alkylaminoalkyl, N,N–dialkylaminoalkyl, N–cycloalkylaminoalkyl, N–cycloalkyl–N–alkylaminoalkyl, N,N–dicycloalkylaminoalkyl, morpholino–N–alkyl, piperidino–N–alkyl, N–alkyl–piperidino–N–alkyl, azacycloalkyl–N–alkyl, hydroxyalkyl, alkoxyalkyl, carboxy, carboalkoxy, phenyl, carboalkyl +, chloro, fluoro, or bromo; Z is amino, hydroxy, alkoxy, alkylamino, dialkylamino, morpholino, piperazino, N–alkylpiperazino, or pyrrolidino; m = 1–4, q = 1–3, and p = 0–3; any of the substituents R_1, R_2, R_3 or R_4 that are located on contiguous carbon atoms can together be the divalent radical $–O–C(R_8)_2–O–$; or a pharmaceutically acceptable salt thereof with the proviso that when Y is –NH–, R_1, R_2, R_3 and R_4 are hydrogen, and n is O, X is not 2–methylphenyl, which are inhibitors of protein tyrosine kinase.


(1)


(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r)