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(54) **SUBSTITUTED NITROGEN HETEROCYCLIC DERIVATIVES AND PHARMACEUTICAL USE THEREOF**

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(58) **Field of Search** 544/280, 244; 514/258, 81, 765.1

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(57) **ABSTRACT**

Various substituted nitrogen heterocyclic derivatives and their pharmaceutically acceptable salt derivatives are provided for use as medicaments, and particularly, as antimitotic, anti-viral, anti-cancer, anti-degenerative, immunosuppressive, and anti-microbial drugs or vaccines. These heterocyclic derivatives can be used as an active agent in a pharmaceutical, as well as a diagnostic utility. To this end, several families of heterocyclic derivatives are provided including pyrrolopyrimidines, pyrazolopyrimidines, purines, and imidazopyridines. In particular, certain tri-substituted and tetra-substituted purines and pyrazolopyrimidines and their deaza analogues are provided for inhibiting cyclin-dependent kinase ("cdk") proteins, viruses, and immunostimulation.

30 Claims, No Drawings