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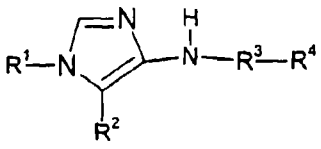
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(1)

(57) Abstract: The invention provides compounds of formula (1), wherein R^1, R^2, R^3, and R^4 are as defined, and their pharmaceutically acceptable salts. Compounds of formula (1) are indicated to have activity inhibiting cdk5, cdk2, and GSK-3. Pharmaceutical compositions and methods comprising compounds of formula (1) for treating and preventing diseases and conditions comprising abnormal cell growth, such as cancer, and neurodegenerative diseases and conditions and those affected by dopamine neurotransmission. Also described are pharmaceutical compositions and methods comprising compounds of formula (1) for treating male fertility and sperm motility; diabetes mellitus; impaired glucose tolerance; metabolic syndrome or syndrome X; polycystic ovary syndrome; adipogenesis and obesity; myogenesis and frailty, for example age-related decline in physical performance; acute sarcopenia, for example muscle atrophy and/or cachexia associated with burns, bed rest, limb immobilization, or major thoracic, abdominal, and/or orthopedic surgery; sepsis; hair loss, hair thinning, and balding; and immunodeficiency.

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