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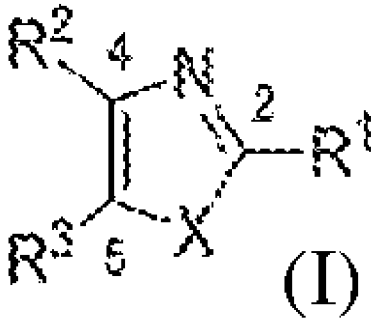
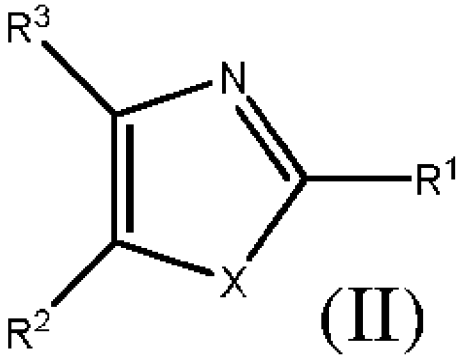
(54) Title: 2,4,5-TRI-SUBSTITUTED AZOLE-BASED CASEIN KINASE 1 INHIBITORS AS INDUCERS FOR CARDIOMYOGENESIS



(I)

(57) Abstract: This invention relates to a method for inducing or enhancing the differentiation of pluripotent stem cells into cardiomyocyte via casein kinase 1 inhibition said method comprising culturing the stem cells in the presence of a medium comprising a casein kinase 1 inhibitor of the formula (I) or (II) or a stereoisomer, tautomer, or a salt thereof wherein R^1, R^2 and R^3 independently from another represent hydrogen, optionally substituted alkyl, alkenyl, alkynyl, heterocyclyl, heteroaryl or aryl; X represents NR^4, O or S; and R^4 represents hydrogen, optionally substituted alkyl, alkenyl, alkynyl, heterocyclyl, heteroaryl or aryl. The method can be used in the late phase of stem cell differentiation and in the compounds of formula (I) or (II) in combination with other small molecules can lead to especially high differentiation of stem cells into cardiomyocytes. The invention further relates to novel compounds which can be used in the method of the invention and kits for stem cell differentiation.



(II)

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