

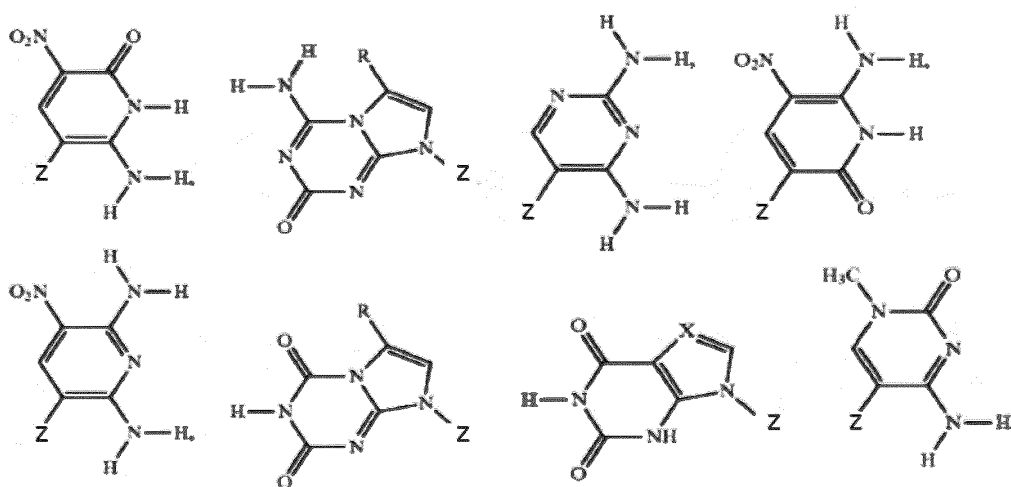
CLAIMS

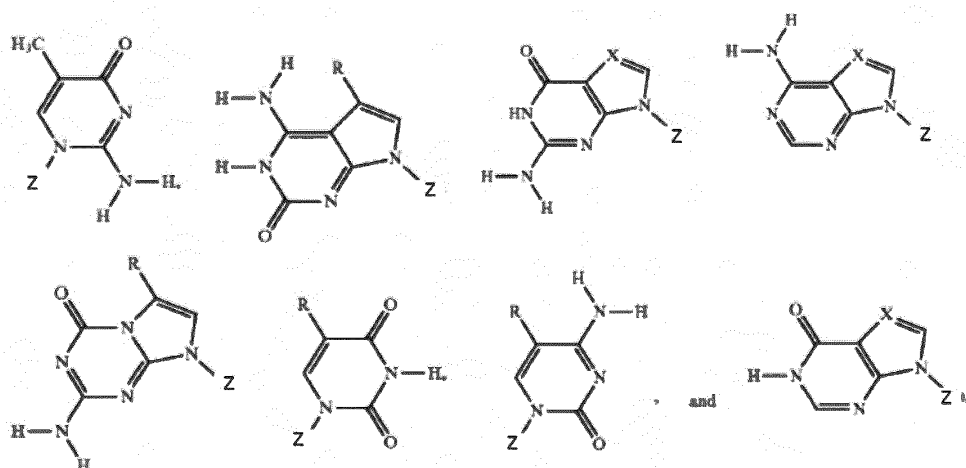
1. A method of preparing 3'-O-amino-2'-deoxyribonucleoside-5'-triphosphates comprising the steps of:
 - 5 (a) protecting a 5'-hydroxy group of a 2'-deoxyribonucleoside;
 - (b) converting (S)-3'-hydroxy group of the compound obtained in step (a) into (R)-3'-hydroxy group;
 - (c) reacting the product of step (b) with an N-hydroxyphthalimide to produce a 5'-O-protected-3'-O-phthalimido-2'-deoxynucleoside;
 - 10 (d) deprotecting the 5'-hydroxy group of the product of step (c);
 - (e) converting the product of step (d) to a 3'-O-(N-acetone-oxime)-2'-deoxynucleoside;
 - (f) triphosphorylating 5'-hydroxy group of the product of step (e) to give a 3'-O-(N-acetone-oxime)-2'-deoxynucleoside triphosphate; and
 - (g) converting the product of step (f) to a 3'-O-amino-2'-deoxynucleoside triphosphate
 - 15 by treating the product of step (f) with an aryl-oxyamine.

2. The method of claim 1 wherein said aryl-oxyamine is a substituted or unsubstituted O-benzylhydroxylamine, substituted or unsubstituted O-phenylhydroxylamine, substituted or unsubstituted O-phenylethylhydroxylamine, substituted or unsubstituted O-benzyloxyethylhydroxylamine, and substituted or unsubstituted O-phenoxyethylhydroxylamines, wherein such aryl-oxyamine is substituted with halo, methoxy or nitro.

3. The method of claim 2 wherein said aryl-oxyamine is selected from the group
 - 25 consisting of O-benzylhydroxylamine, O-phenylhydroxylamine, O-[(2-Methoxyphenyl)methyl]hydroxylamine, O-[(3,5-Dichlorophenyl)methyl]hydroxylamine, O-(3-Chlorobenzyl)hydroxylamine, O-(4-Nitrobenzyl)hydroxylamine, O-(4-Methoxybenzyl)hydroxylamine, O-[(3,4-Dichlorophenyl)methyl]hydroxylamine, O-(2-Chlorobenzyl)hydroxylamine, O-[4-(Trifluoromethyl)benzyl]hydroxylamine, O-[(2,5-
 - 30 Dichlorophenyl)methyl]hydroxylamine, O-(2-Methylbenzyl)hydroxylamine, O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine, O-(4-Nitrobenzyl)hydroxylamine, O-(2-(Benzyloxy)ethyl)hydroxylamine, O-(4-Bromophenyl)hydroxylamine, O-[2-(Trifluoromethyl)phenyl]hydroxylamine, and O-(2-Phenoxyethyl)hydroxylamine.

4. The method of claim 3 wherein said aryl-oxyamine is O-benzylhydroxylamine or O-phenylhydroxylamine.
5. A composition comprising an aqueous solution containing a 3'-O-amino-2'-deoxyribonucleoside-5'-triphosphate and an aryl-oxyamine at a concentration of less than 2% by volume.
6. The composition of claim 5 wherein said aryl-oxyamine is O-benzylhydroxylamine or O-phenylhydroxylamine.
7. The composition of claim 5 or 6, wherein said 3'-O-amino-2'-deoxyribonucleoside-5'-triphosphate has a base selected from the group consisting of adenine, thymine, guanine, cytosine, uracil, inosine, xanthine or hypoxanthine.
8. The composition of any one of claim 5 to 7, wherein said 3'-O-amino-2'-deoxyribonucleoside-5'-triphosphate has a base selected from the group consisting of:





wherein Z is a 1' carbon of a 2'-deoxyribose-5'-triphosphate, R is either H, CH₃, or a linking
 5 group, and X is either N or C-R.

9. The composition of claim 8, wherein said linking group is alkyl linkers, alkenyl linkers,
 thioether linkers, aminoalkyl, aminoallyl, azidealkyl, azideallyl propargylamine, bis-propargyl,
 or bis-propargyl-PEG.

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