

Annex B

1. A modified nucleotide triphosphate molecule comprising a purine or pyrimidine base and a deoxyribose sugar moiety having a 3'-azidomethyl group.
2. A molecule according to claim 1 wherein said base is linked to a detectable label via a cleavable linker ~~or a non-cleavable linker.~~
- ~~3. A molecule according to claim 2 wherein said linker is cleavable.~~
- ~~43.~~ A molecule according to claims 2 ~~or 3~~ wherein said detectable label is a fluorophore.
- ~~5. A molecule according to claims 3 or 4 wherein said linker contains a phosphine cleavable azide.~~
- ~~64.~~ A kit comprising:
 - ~~(a)~~ four modified nucleotide triphosphate molecules, each comprising a purine or pyrimidine base and a deoxyribose sugar moiety having a 3'-azidomethyl group where each nucleotide has a base that is linked to a detectable label via a cleavable linker and where the detectable label linked to each nucleotide can be distinguished upon detection from the detectable label used for the other three nucleotides; and
 - ~~(b)~~ packaging materials therefore.
- ~~7. A kit according to claim 6 further containing a polymerase.~~
- ~~8. The kit according to claim 7 wherein the polymerase is a Thermococcus sp.~~
- ~~95.~~ A polynucleotide molecule comprising a modified nucleotide comprising a purine or pyrimidine base and a deoxyribose sugar moiety having a 3'-azidomethyl group.
- ~~106.~~ A method for determining the sequence of a target single-stranded polynucleotide, comprising monitoring the sequential incorporation of complementary nucleotides, wherein at least one incorporation is of a nucleotide comprising a purine or pyrimidine base and a deoxyribose sugar moiety having a 3'-azidomethyl group where the nucleotide has a base that is linked to a detectable label via a cleavable linker and wherein the identity of the nucleotide is determined by detecting the label linked to the

base and the blocking group and label are removed prior to introduction of the next complementary nucleotide.

~~447.~~ The method of claim ~~406~~ wherein the label of the nucleotide and the blocking group are removed in a single chemical treatment step.

~~428.~~ The method of claims ~~406~~ or ~~447~~, the method comprising:

- (a) providing a plurality of different nucleotides wherein each nucleotide of said plurality of different nucleotides has a 3'-azidomethyl group and a base that is linked to a detectable label via a cleavable linker, wherein the detectable label linked to each type of nucleotide can be distinguished upon detection from the detectable label used for other types of nucleotides;
- (b) incorporating the nucleotide into the complement of the target single-stranded polynucleotide;
- (c) detecting the label of the nucleotide of (b), thereby determining the type of nucleotide incorporated;
- (d) removing the label of the nucleotide of (b) and the blocking group; and
- (e) ~~optionally~~ repeating steps (b)-(d) one or more times;

thereby determining the sequence of a target single-stranded polynucleotide.

~~439.~~ The method of any one of claims ~~406~~ to ~~428~~ wherein the blocking group is removed using a water soluble phosphine under neutral, aqueous conditions.

~~14.~~ ~~The method of claim 13 wherein the phosphine is a derivatised trialkyl phosphine.~~

~~15.~~ ~~The method of claim 14 wherein the phosphine is derivatised with one or more functionalities selected from the group comprising amino, hydroxyl, carboxyl and sulfonate groups.~~