

GRAND QUIZ

BIO203 LATURE 1-35

EFFORT BY TEAM OF VU LEGENDS

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1) is a technique widely used in molecular biology and biotechnology.

PCR

2) name is from one of its key component DNA polymerase.

PCR

3) As PCR progresses generated is itself used as template for replication.

DNA

4) During a heat stable DNA stable polymerase, such as Taq polymerase an enzyme derived from the bacterium

PCR , Thermus Aquaticus

5) PCR is extensively modified to perform a wide array of

Genetic manipulation

6) How many steps of PCR?

3

7) Name three steps of PCR

Denaturation

Annealing

Extension

8) Reaction is heat at the temperature of which held for 1-10 minutes.

93°C - 96°C

9) The reaction temperature is lowered to for 20 -40 seconds.

40-65°C

10) Taq polymerase has its optimum activity temperature at.....

70-80°C

11) Common temperature for the Taq polymerase is.....

72°C

12) At which step DNA polymerase synthesizes a new DNA strand complementary to the DNA template strand by adding dNTP's.

At extension

13) Single step is performed at a temperature of for 5-15 minutes.

70-74°C

14) Write the name of major steps of PCR.

Microfuge Tube

Thermal cycler

DNA tamplate

Primers

Buffer

MgCl₂

Distilled water

Deoxynucleotide triphosphates

DNA polymerase

15) are small cylindrical plastic tube with conical bottoms.

Microfuge tube

16) works on the principle of Peltier effect which raises and lowers the temperature of the block in a pre-programmed manner

Thermocycler

17) Taq, Pfu, Vent polymerase are the

DNA polymerase

18) Primers are single stranded long DNA fragment.

18-50 bp

19) determine the specificity of the PCR reaction.

Primers

20) Distance between the primer binding sites will determine the of PCR products.

Size

21) Product size of primers is

100 - 700 bp

22) Write the formula for calculating melting temperature of primers.

$$T_m = 4(G+C) + 2(A+T)$$

23) 'Taq' is the abbreviation of.....?

Thermus aquaticus

24) 'Tfl' is the abbreviation of

T. flavus

25) 'Tth' is the abbreviation of

T. thermophilus

26) 'Tli' is the abbreviation of.....?

Thermococcus litoralis

27) Pfu' is abbreviation of

Pyrococcus furiosus (fidelity)

28) may occur due to non-specific hybridization of primers

Misprimer

29) may occur due to hybridization of primers to each other.

Primer dimer

30) Controls for contamination contains all reagents except.....?

DNA template.

31) In _____ PCR, two pairs of PCR primers are used to amplify a fragment?

Nested PCR

32) In which PCR, first pair amplify a fragment similar to a standard PCR?

Nested PCR

33) In nested PCR, second pair of primer is called _____?

Nested primers

34) Second pair of primers bind inside the first PCR product fragment to allow _____ of a second PCR product?

Amplification

35) 2nd PCR product increases specificity of DNA amplification, by reducing background due to _____ amplification of DNA?

Non-specific

36) In nested PCR, the probability of non-specific amplification is:

Very Low

37) _____ is variant of PCR which enables simultaneous amplification of many targets of interest in one reaction by using more than one pairs of primers?

Multiplex PCR

38) Multiplex PCR consist of _____ sets with in a single PCR mixture to produce amplicons of varying sizes that are specific to different DNA sequences?

Multiple primers set

39) By targeting _____ sequence at once, additional information may be gained from a single test.

Multiple sequence

40) Annealing temperatures for each of primer sets must be _____ to work correctly with in single reaction.?

Optimized

41) Amplicon size should be different enough to form distinct bands when visualized by _____?

Gel Electrophoresis

42) If amplicon sizes overlap, the different amplicons may be differentiated and visualized using primers that have been dyed with different color _____?

Fluorescent Dyes

43) The primer designed for all primers pairshas to be optimized so that all the primers pair can work at the same _____ during PCR?

Annealing Temperature

44) The use of _____ with in a single PCR reactions to produce amplicons of varying sizes specific to different DNA sequences?

Multiple, Unique primer sets

45) _____ PCR is based on reverse transcription process?

Reverse Transcriptase PCR

46) In transcription, RNA Transcribes into _____?

oDNA

47) Which primers are used in reverse Transcriptase PCR?

Oligo dT primers

48) How many time is required for the synthesis of cDNA?

One hour

49) The temperature range for the synthesis of cDNA?

37°C

50) First step of reverse Transcriptase is _____?

First stand reaction

51) The PCR is preceded by a reaction using reverse Transcriptase to convert RNA to _____?

cDNA

52) RT-PCR is widely used in _____ to determine the expression of gene?

Expression profiling

53) Reverse Transcriptase is used to identify _____?

Sequence of an RNA transcript

54) _____ is a technique in which flouorophores binds to specific target regoins of amplicons to produce fluorescence during PCR?

Real time PCR

55) _____ is used to measure the quantity of PCR product.

Real time PCR

56) The florescence measured in real time is detected in a PCR cycler with an inbuilt _____?

Filter Flurometer

57) Real time PCR is a method of choice to quantitatively measure starting amounts of _____?

DNA , cDNA ,RNA

58) Quantitative real time PCR is often confusingly known as _____?

RT-PCR or RQ-PCR

59) _____ are more appropriate contractions.

RT-PCR or RQ-PCR

60) QRT-PCR methods use fluorescent dyes such as _____?

Sybr Green or TaqMan

61) The amount of product in real time is measured with help of _____?

Fluorescent dyes

62) _____ is commonly used to determine whether a DNA sequence is present in a sample and the number of its copies in a sample?

Q-PCR

63) is a technique that inhibits hot star taq polymerase activity

Hot star PCR

64) Hot star PCR allows for reaction set up at

Room temperature

65) Hot star PCR allow reaction without

Non-specific amplification

Primer dimer formation

66) is used for generating single – standard copies for a DNA sequence

Asymmetrical PCR

67)is a type of PCR in which primer are designed

Whole genome amplification

68) Primer in whole genome amplification is designed to.....

Degenerate

69) WGA is stands for

Whole genome amplification

70) WGA initiate replication from

A large number of target locations

71) is a group of procedure that allows amplification to occur at many location in a genome.

WGA

72) Whole genome can be amplified by.....

WGA

73) Mini primers uses a

Thermostable polymerase S-TBR

74) S-TBR can extend

Short primers

75) Long PCR is useful only when it is

Accurate

76) Extended or longer than PCR meaning over kilobases

Standard , 10

77) Special mixture of proficient polymerases along with accurate polymerases such asare often mixed together.

pfu

78) Application of clone large gene is not possible with

Conventional PCR

79) Allele- specific PCR used for identifying of

SNPs

80)requires prior knowledge of a DNA sequence, including difference between alleles.

Allele-specific PCR

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81) Allele-specific PCR uses primers whose ends encompass the SNP.

3' ends

82) PCR amplification under the stringent condition is in the presence of mismatch between template and primer.

Much less efficient

83) Successful amplification with an signals presence of the specific SNP in a sequence.

SNP- specific primer signals

84) Which technique is used to identify or utilize signal-nucleotide polymorphisms (SNPs)?

Diagnostic or Cloning technique

85) is the screening of bacterial or yeast clones for correct ligation or plasmid products.

Colony PCR

86) Heat the mixture of colony PCR in a boiling water bath for minutes.

2 minutes

87) Spin sample for 2 minutes high speed in a

Centrifuge

88) is a polymerase chain reaction that actually take place inside the cells on a slide.

In situ PCR

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89) In situ PCR amplification can be performed on

Fixed tissue and cells

90) In situ PCR allows the identification of

Cellular marker

91) RNA is a

Non genomic material

92) In situ PCR is limited to detection of

Non genomic material

93) uses Standard PCR primer oriented in the reverse direction of the usual orientation.

Inverse PCR

94) The template of the reverse primer is a that has been self ligated.

Restriction fragment

95) Inverse PCR function to a known sequence.

Clone sequences flanking

96) are digested and then ligated to generate circular DNA.

Flanking DNA sequences

97) is a method used to allow PCR when only one internal sequence is known.

Amplification and identification of sequences flanking transposable elements

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98) is especially useful in identifying flanking sequences to various genomic inserts.

Amplification and identification of sequences flanking transposable elements

99) Genomic DNA is digested with one or more

Restriction enzyme

100) These restriction enzymes are

Tetra cutter and hexa cutter

101) Pre-selected PCR is performed using

Primers

102) match the restriction and primer site

Primers

103) ALFP is the abbreviation of

Amplified fragment length polymorphism

104) is highly sensitive

ALFP

105) ALFP can be used for

Genotyping

106) ALFP used for detecting

Polymorphism in DNA

107)can be used to assemble to or more pieces of DNA into one Piece

Assembly PCR

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108) Assembly PCR is

The synthesis of long DNA

109) Assembly PCR

Is involved in initial PCR with primers

110)full fill the final length product

Second PCR

111) Suicide PCR is typically used in

Paleogenetics

112) Which method is used to prescribes the use of any primer combination only once in a PCR?

Sucide PCR

113) In Suicide PCR, primers should always target aregion?

Genomic

114) In PCR, use of any primers combination only once in a PCR

Sucide

115) Suicide PCR is used to identify patterns of DNA at CpG islands in genomic DNA.

Methylation

116) In suicide PCR, target DNA is first treated with

Sodium bisulfite

117) Sodium bisulfite converts unmethylated cytosine bases to

Uracil

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118) is used in quantitative PCR provides information about methylation state of a given CpG island?

MSP

119) Sucrose is an

Ordinary sugar

120) Sugar is obtained from.....

Cane and beet

121) Sucrose lacks a free.....

Reducing group

122) Reducing group have.....

Aldehyde or ketone end

123) Sucrose is an.....

Non reducing sugar

124) Sucrose doesn't exhibit.....

Mutarotation

125) Sucrose is

Dextrorotatory

126) It's hydrolytic products know as.....

Fructose

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127) Which of the following have greater levortation.....

Glucose

128) The levortation of glucose is.....

+52.5

129) The levortation of fructose is

-92

NOTE:

Levortation is a term which is used in chemistry and physics to describe the optical rotation.

130) The process in which hydrolytic products invert into the rotation is called

Inversion

131) The resulting mixture of the inversion process are known as

Invert sugar

132) Sucrose can hydrolyzed intoo

Maltose

Glucose

133) The hydrolysis of sucrose is catalyzed by

Sucrase

134) Sucrase is present in.....

Intestinal brush border

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135) Sucrase is present like.....

Maltase and lactase

136) is largely invert sugar

Honey

137) The presence of..... account for the greater sweetness in the honey

Fructose

138) Sucrose is an.....

Disaccharides

139) Sucrose is composed by Monosaccharides

2

140) Sucrose is composed from.....

Glucose and fructose

141) Oligosaccharides areof monosaccharides?

Short polymer

142) In oligosaccharides Monosaccharides are joinined together

3 to 10

143) In oligosaccharides monosaccharides are joinined by

Glycosidic bond

144) Most of oligosaccharides are notby human enzymes

Digested

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145) Oligosaccharides are present in.....

Extracellular face

146) Oligosaccharides participate in the

Molecular targeting

Cell to cell recognition

147) mark the passage of the time and determine when protein should be taken out of circulation?

Oligosaccharides

148) The human ABO blood group illustrate the effect of

Glycoyl-transferases

149) In red blood cells carbohydrates are attached too

Glycoprotein

Glycolipids

150) The structure have in common an oligosaccharides foundation called

The O antigen (sometimes H antigen)

151) The A and B antigen differ from the O antigen by addition of
Extra monosaccharides?

01

152) Acetylgalactosamin e is antigen for

A

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153) Galactose is antigen for

B

154) Galactose moiety is for

Antigen O

155) Suicide PCR is typically used in -----?

Paleogenetics

156) Which method is used to prescribes the use of any primer combination only once in a PCR?

Suicide PCR

157) In Suicide PCR, primers should always target a -----region?

Genomic

158) In ----- PCR, use of any primers combination only once in a PCR?

Sucide

159) Sucide PCR is used to identify patterns of DNA ----- at CpG islands in genomic DNA.

Methylation

160) In sucide PCR, target DNA is first treated with ?

Sodium bisulfite

161) Sodium bisulfite converts unmethylated cytosine bases to -----?

Uracil

162) ----- is used in quantitative PCR provides information about methylation state of a given CpG island?

MSP

163) Name of advantages of PCR?

Specific

Sensitive

Flexible

Damaged DNA

164) AIDS, TB CMV, H1N1, etc

Viral Bacterial and fungal infections

165) Name of Forensic applications.....

DNA finger printing

166) Few names of application PCR.....

Molecular Archaeology

Molecular Epidemiology

Molecular Ecology

167) Three names of clinical microbiology

Babesia spp

Trypanosoma spp

Plasmodium spp

168) has widespread application in various fields of life sciences including genetic engineering, medical, forensic, agriculture, environment etc

PCR

169) PCR has been used in gene cloning and screening of

Gnomic libraries

170)have allowed to perform prenatal genetic diagnosis

Molecular tools

171) PCR has major impact on medicine especially in the field of

Cnical microbiology

172)are used to established the filiations of a person or to obtain evidence from minimal samples of saliva, semen or other tissues.

Molecular methods

173)is the application of scientific procedures to solve criminal and legal matters

Forensic science

THE END
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