

Cancer Biology Kit - PCR/Gel Electrophoresis Lab - HER2 Biomarker

Table of Contents

This section contains information about the HER2 PCR test. In this kit, PCR and gel electrophoresis are used to determine whether or not the HER2 gene is amplified in fictitious patient samples.

The materials include information about:

- polymerase chain reaction (PCR)
- PCR modeling activities
- gel electrophoresis
- the HER2 biomarker
- targeted therapy for amplified HER2

A. PCR and Gel Electrophoresis Slide Decks

This section contains a powerpoint introducing polymerase chain reaction (PCR) and the use of PCR to detect the number of copies of the HER2 gene and a powerpoint on agarose gel electrophoresis

Cancer Biology PCR and Detection of HER2 PowerPoint

Agarose Gel Electrophoresis ABE Workshop 080121.pptx

B. HER2 PCR Protocol

This section contains the protocol for HER2 PCR, the protocol for pouring an agarose gel and running PCR samples the gel, an image of the 1kb molecular weight marker used on the gel.

Cancer Biology HER2 Gene Amplification PCR Protocol

Cancer Biology Analyzing PCR Results with Agarose Gel Electrophoresis

1 Kb Ladder Handout

C. PCR Modeling Activities

Paperclip PCR Activity Instructions

This is a really good PCR animation activity designed by Adam Waltzer that takes students through 3 rounds of PCR, similar to what they'd do with the 3D Molecular Designs model, but without the need to purchase the model.

PCR Animation Assignment_AWaltzer050822.docx

3D Molecular Designs Model Activities - to use with their Biotechnology Model Kit

BiotechnologyKit_ExploringPCR_ActivityGuide_9-10-2020.pdf

BiotechnologyKit_ExploringPCR_StudentWorksheet_9-10-20.pdf

BiotechnologyKit_PCR_ActivityGuide_12-15-20.pdf

D. HER2 PCR/Gel Electrophoresis Results

A HER2 PCR virtual data set for all 12 'patients' (in duplicate) is available for teachers to use in teaching this kit content online. This data is available in two formats: ppt (editable) and pdf (non-editable).

Cancer Biology Kit HER2 PCR Data 113020.pdf

HER2 PCR gel photo