All. 1 a verbale 4

BUSTA 1

1) Descrivi la tecnica ELISA e un possibile impiego

2) Test parametrico e non parametrico: esempi e utilizzo

3) Quali software di analisi si possono utilizzare per quantificare un Western Blot?

Accertamento conoscenza lingua inglese
Leggere e tradurre in italiano il seguente testo:

Sources for DNA extraction are very diverse, practically DNA can be isolated from any part of human body such as saliva, hair, mouth swabs and even from several skin cells left on the surface after it has been touched. However, the most common sources are soft tissue or blood samples. There are many different methods which can be used to perform DNA extraction on such samples such as organic extraction, salting out, magnetic separation and silica based technology. The choice of a method depends on many factors: the tissue type, the concentration of DNA, sample number, safety of the experiment and coast. Regardless of the used methods, they happen to follow some common procedures aimed to achieve effective cell lysis, proteins and RNA removal, and lastly DNA precipitation. Resulting in a homogeneous DNA preparation that represent the entire genetic information contained within the cell.

BUSTA 2

1) Descrivi la tecnica del Western Blot e un possibile impiego.

2) Anova o T-Test: quando utilizzarli?

3) Quale è il ruolo di un gene housekeeping nella RT-PCR?

Accertamento conoscenza lingua inglese
Leggere e tradurre in italiano il seguente testo:

Characterization of extracted DNA by spectrophotometric assay: DNA concentration and purity can be determined by measuring the absorption of ultraviolet light. The DNA has a maximum and minimum absorbance at 260 nm and 234nm, respectively and the purines and pyrimidine in nucleic acid are responsible for these absorptions. At 260 nm double-stranded DNA has specific absorption coefficient of 0.02 $(\mu g/ml)^{-1}$ cm^{-1}. Moreover, the A260/A280 ratio allow to detect nucleic acid purity from proteins contamination since proteins have maximum absorption at 280 nm. Highly purified DNA samples have a 260/280 nm ratio of (1.8-1.9), thus below (1.8) a significant amount of protein impurity may present within the sample. The A260/A230 ratio determined to confirm that the sample is pure from carbohydrates, peptides, ethanol or any organic compounds, and it is usually between 2 and 2.2.

BUSTA 3

1) Descrivi la tecnica Luminex e un possibile impiego

2) Che cos'è il p-value?

3) Che differenza c'è tra trascrittomica su tessuto intero e trascrittomica a singola cellula?

Accertamento conoscenza lingua inglese
Leggere e tradurre in italiano il seguente testo:

When a dilute aqueous DNA solution is heated slowly, the two strands of the double helix gradually separate, leading to the formation of a single stranded DNA (denaturation). It results in an increase in absorbance at 260 nm. Temperature for midpoint of denaturation gives Tm by increasing the temperature slowly and measuring absorbance at 260 nm as melting profile can be generated. The DNA of each species has a specific denaturation curve which is dependent on the % GC content and length. In double stranded DNA, G and C base pairing is more stable and requires more heat energy to break the three hydrogen bonds to separate the strands.

BUSTA 4

1) Descrivi la tecnica RT-PCR e un possibile impiego

2) Media o mediana: differenza

3) Quali software si possono utilizzare per analizzare immagini di microscopia?

Accertamento conoscenza lingua inglese
Leggere e tradurre in italiano il seguente testo:

Under physiological conditions, DNA is a negatively charged molecule due to the presence of phosphate groups in the backbone. Therefore, in aqueous media, under the influence of an electrical field, DNA molecules will move through an agarose matrix towards the positively charged anode, at a rate that is inversely proportional to the molecular weight. The electrophoretic migration rate of DNA through agarose gel depends on the following: size of DNA molecules, concentration of agarose gel, voltage applied, conformation of DNA, and the buffer used for electrophoresis. Several buffers are used for agarose gel electrophoresis, but the most common are: Tris-acetate EDTA buffer (TAE) and Tris-borate EDTA buffer (TBE). The DNA mobility in TBE buffer is approximately two times slower than in TAE buffer. This is due to the lower porosity of agarose gel when agarose polymerizes in the presence of borate.