

**CONCORSO PUBBLICO, PER ESAMI, A N. 2 POSTI DI CATEGORIA D, POSIZIONE ECONOMICA D1, AREA TECNICA, TECNICO-SCIENTIFICA ED ELABORAZIONE DATI, PER LE ESIGENZE DEL DIPARTIMENTO DI ECCELLENZA DI FARMACIA DELL'UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II (COD. RIF. 2333), DI CUI N. 1 POSTO RISERVATO ALLE CATEGORIE DEGLI OPERATORI VOLONTARI CHE HANNO CONCLUSO SENZA DEMERITO IL SERVIZIO CIVILE UNIVERSALE, DI CUI ALL'ART. 18, CO. 4 DEL D.LGS. N. 40/2017, IN ATTUAZIONE DEL PROGETTO "DIPARTIMENTI DI ECCELLENZA 2023-2027" - CUP E63C22003670006, INDETTO CON DECRETO DEL DIRETTORE GENERALE N. 1484 DEL 15.12.2024**

**QUESITI ESTRATTI ALLA PROVA ORALE DEL 4 APRILE 2024**

**GRUPPO DI QUESITI N. 1**

1. Tipi di contaminazione cellulare e strategie di eradicazione (agenti antimicrobici e fumigazione)
2. Inserire un elenco numerato in un file Microsoft Office Word (.doc) ed aggiungere per ogni numero un sotto elenco puntato.
3. Colorectal cancer (CRC) represents one of the leading causes of cancer-related deaths in men and women with a significant health burden worldwide. The overall incidence and prevalence of CRC are rising due to the ageing of the population as well as to the increase in established risk factors such as sedentary lifestyles, smoking, obesity and chronic inflammatory disorders (e.g. inflammatory bowel diseases and primary sclerosing cholangitis). It is estimated that by the year 2035, the total number of deaths due to colon cancer will increase by 60%. Sporadic CRC develops mostly via a multistep process involving a sequence of genetic, morphological and histological alterations that accumulate over 10 to 15 years. CRC development is mainly symptomless until the metastatic stage of the disease.

**GRUPPO DI QUESITI N. 2**

1. Tecnica Western Blot: preparazione dei lisati proteici, corsa elettroforetica, trasferimento delle proteine su blot ed identificazione di proteine target mediante immunodetection.
2. Organizzare una tabella in un foglio di lavoro Microsoft Office Excel (.xlsx) utilizzando la funzione somma per celle verticali adiacenti.
3. The transient receptor potential (TRP) cation channel, subfamily melastatin (M), member 8 (TRPM8), is a cold-sensitive six-pass transmembrane  $Ca^{2+}$  protein belonging to the TRP superfamily of ion channels, which is mainly detected in cold-sensitive peripheral sensory neurons. Although epithelial cells commonly express low amounts of TRPM8, its expression is much higher in tumour cells. TRPM8 is strongly up-regulated in several cancers such as prostate, breast, pancreas and skin, whereas it is dramatically reduced during metastasis in the androgen-independent prostate cancer. Concerning the gastrointestinal tract, studies have shown that TRPM8 is expressed in CRC-immortalized cells and, more recently, this protein has been found to be up-regulated in gastric cancer patients with metastasis as well as in CRC patients with liver metastasis.

### GRUPPO DI QUESITI N. 3

1. Tecniche di trasfezione
2. Generare un grafico XY a linee 2D in un foglio di lavoro Microsoft Office Excel (.xlsx).
3. We report here, for the first time, that high TRPM8 expression in colon cancer specimens predicts low survival in CRC patients and that TRPM8 aberrant expression is specifically detected in tumour cells isolated from bulk tumours of CRC patients. We also provide evidence that genetic deletion of *Trpm8* protects mice from chemically induced sporadic colon cancer and colitis-associated colon cancer (CAC), suggesting its key function in tumour initiation and growth. Finally, we show that pharmacological desensitization of TRPM8 reduces tumour progression in chemically induced colon cancer as well as in CRC-xenografted mice, with a mechanism involving the Wnt/ $\beta$ -catenin pathway. TRPM8 is a member within the subset of temperature-sensitive TRP channels and it is the main receptor involved in cold sensation. TRPM8 was firstly detected in the prostate, but it is widely expressed by sensory neurons.

Per ordine della Presidente  
Il segretario della Commissione  
f.to dott. Salvatore Pandolfi