Esempio di domande per esonero.

Tutte le risposte dovrebbero essere date in circa 10 righe stando attento ad un uso corretto ed efficacia del vocabolario scientifico.
Note: Non italian speaking students can answer in english
Domande generali: saranno svolte senza l'uso della rete e per un tempo massimo di 30 minuti
Domande specifiche su un articolo scientifico "sconosciuto": Sarà dato prima l'articolo per una lettura generale a video e dopo un'ora di tempo sarà dato l'accesso alle domande specifiche su moodle in un formato identico a quello sottostante e con una casella di testo per l'inserimento delle risposta. Per questa parte sarà possibile consultare la rete.

General questions:

1. Explain why it is necessary to highly purify the antigen molecule for polyclonal-antibodies preparation?

2. What is the difference between "biosecurity" and "biosafety"?

3. Give a definition of "stem cell niche"

4. Summarize the different types and effects of protein ubiquitination

5. What is your main comment on "scaffold proteins" and "signal transduction"

Article to comment:

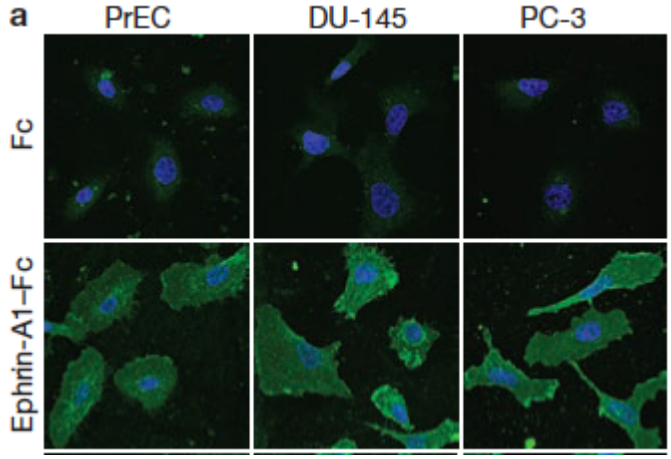
Nota: Per evitare di aggiungere materiale didattico si è scelto di prendere per l'esempio un articolo visto a lezione: **Astin et al. Nature Cell Biology 2010**

I- PC3 cell line

1. Where did the authors get the PC3 cell line from?
2. You want to buy this cell line yourself, please give the catalogue number to place the order.
3. Which culture medium is indicated for culture propagation?
4. Did the authors used the indicated culture medium?

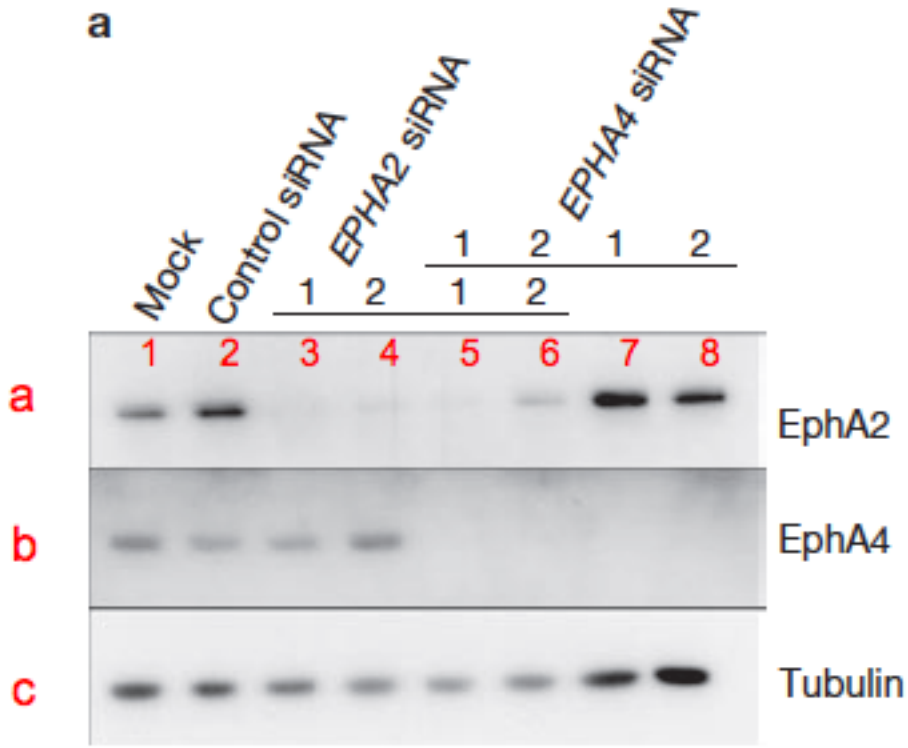
II- Explain the main steps and the meaning of the binding assay and of Hoechst staining and explain your understanding of the selected part of fig.2a.

Figure 2 Ephrin-A ligands are sufficient to induce CIL between PC-3 cells. (a) Immunofluorescence microscopy of cells treated with anti-Fc antibodies (green) to detect surface binding of ephrin-A1–Fc, ephrin-A5–Fc, ephrin-B2–Fc and control Fc, to PrEC, DU-145 and PC-3 cells. Hoechst (blue) stains nuclei.



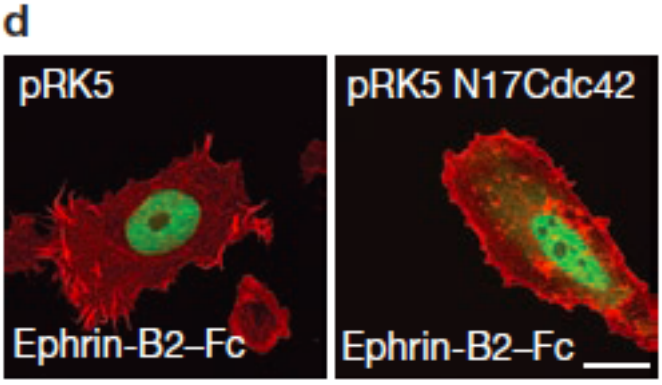
III- Explain the main experimental steps leading to the results of lane 5 and comment on 1) the role of tubulin as control for blot interpretation; 2) the results of lane 5 with respect to other lanes.

Figure 3a: Lysates of PC3 cells mock transfected, transfected with a non-targeting siRNA oligonucleotide (control siRNA) or transfected with siRNA oligonucleotides specific to EPHA2 and EPHA4 (two different oligonucleotides for each) were immunoblotted using antibodies against the indicated proteins. Tubulin was used as a loading control.



IV- What is evidenced by phalloidin staining? Cdc42 belongs to which family of proteins? which is the main role of Cdc42? What is the effect of N17Cdc42 expression with respect to endogenous Cdc42? what is your interpretation of this figure?

Figure 5d Confocal microscopy images of phalloidin-stained (red) PC?3 cells
after microinjection of indicated expression constructs, followed by treatment with ephrin-B2–Fc; injection marker (green).



V- What is the meaning of this concluding cartoon? sustain your description of the hypothesis with experimental references supporting your comments (es. figure 12a, figure 15c,d…)