

Quiz Questions

1. Which of the following products are examples of Biological products?

- Blood
- Monoclonal antibody
- Small molecule
- Vaccine

2. Give an example of a Promega product helping to assess efficacy and/or potency of monoclonal antibody based drugs?

3. Bioluminescence delivers a higher assay sensitivity than fluorescent reporters such as GFP. What is the sensitivity fold increase? You can discover it by reading the attached article “Luciferase reporter assays powerful, adaptable tools for cell biology research”.

- 10- to 100-fold
- 10- to 500-fold
- 10- to 1,000-fold

4. Which are the applications of luminescent reporters? For hints consult the “Bioluminescent Reporters” and the article linked to question 3.

- Promoter Structural Analysis
- Bioluminescence resonance energy transfer (BRET) to monitor protein-protein interactions
- Fluorescent resonance energy transfer (FRET) to monitor protein-protein interactions
- in vivo* imaging

5. What are the advantages of pGL4 vectors over the older generation, pGL3 vectors?

- Available with renilla and firefly
- Increased reporter gene expression
- Improved temporal response
- Fewer cryptic sites

6. Multiplexing cell based assay offer the advantage of gaining more than one set of data from the same sample. To multiplex two or more assays, the assays must meet certain criteria. Choose those that apply:

- Signals for the various assays must be spectrally identical
- Signals for the various assays must be spectrally distinct
- Assay chemistries must be compatible
- Assays have to be performed within one hour

7. In 2012 Promega launched a novel, engineered luciferase: the NanoLuc®. Which of the statements below are valid for NanoLuc®? Hint: Consult this article “New Engineered Luciferase Reporter from a Deep Sea Shrimp”

- The luminescence expression in mammalian cells is cca 2.5 million-fold improved as compared to that of firefly and renilla luciferases
- Is the smallest luciferase up to date
- Uses coelenterazine as substrate
- Being engineered luciferase, is not suitable for fusion protein applications

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8. Promega has developed a technology that allows profile characterization and direct and kinetic screens for allosteric modulators of GPCRs. What is the name of this technology?

- NanoSensor™
- GloSensor™
- BioSensor™

9. For which research area and/or biological processes do you suggest Promega should develop bioluminescence-based technologies/assays?

10. Which Promega instrument is shown in the attached extract of the popular TV series “CSI Miami”?

- GloMax® Discover System
- Maxwell® 16 Instrument
- Quantus™ Fluorometer
- GloMax®-Multi+ Detection System

11. What is the melting temperature (T_m) of the following oligonucleotide?

AATGTGTTTAAAATTGGCGGCCTATA Hint: Visit our [Biomath Calculators](#)

- 58°C
- 63°C
- 65°C
- 68°C

12. What are the advantages of using GoTaq® G2 HotStart DNA polymerase compared to GoTaq® G2 DNA polymerase?

- The specificity is improved
- The PCR reaction is faster
- The polymerase can be used at lower concentration
- Room-temperature reaction setup is possible

13. What might be the problem if the controls work as predicted but the fragment of interest is not recovered using the pGEM®-T or pGEM®-T Easy Vector System?

- Insert does not contain an A-overhang because it stems from a proof-reading polymerase
- Highly repetitive sequences in the insert may be unstable and form deletions or rearrangements upon propagation
- Insert has been overexposed to UV light has formed pyrimidine dimers, which can interfere with ligation
- Contaminant in the insert preparation that is removing the 3'-terminal thymidine or inhibiting ligation and/or transformation

14. With which product group did Promega start its operation 37 years ago?

Quiz Questions

15. Which Promega product would you use to protect RNA in your samples?

16. What do you think is the technology of the future in the field of biology?

17. In which year Promega Corporation will have its first centennial celebrations?

18. What Promega products were named to The Scientist Top 10 Innovations in 2012, 2013 and 2015?

19. A big concern in nowadays research is the cell lines identity. How do you clarify the cell line identity and which Promega technology can be used here.

20. Propose how Promega could link own technologies to the break through CRISPR technology.

21. Tell us which ways Promega should communicate with young researchers, like yourself, to reach you and your interest best? (this question will not affect the correctness of the quiz)

22. Which criteria a company has to fulfill to be considered by you a great place to work?

(choose from the list and/or add your criteria) (this question will not affect the correctness of the quiz)

- Sustainability program
- Company's involvement in local communities
- Work-Life balance
- Compensation package
- Benefices offered (daycare, fitness, cafeteria, etc...)
- Other (please specify) _____