

Growth Factors Quiz Answer Key PDF

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Which receptor does Epidermal Growth Factor (EGF) bind to?

- A. VEGFR
- B. PDGFR
- C. EGFR ✓**
- D. FGFR

What is the primary role of Vascular Endothelial Growth Factor (VEGF)?

- A. Neuron survival
- B. Angiogenesis ✓**
- C. Cell differentiation
- D. Insulin regulation

What is the primary function of Platelet-Derived Growth Factor (PDGF)?

- A. Neuron growth
- B. Blood vessel formation ✓**
- C. Skin regeneration
- D. Muscle development

Which growth factor is crucial for neuron survival and growth?

- A. Fibroblast Growth Factor (FGF)
- B. Nerve Growth Factor (NGF) ✓**
- C. Vascular Endothelial Growth Factor (VEGF)
- D. Platelet-Derived Growth Factor (PDGF)

Which growth factor is primarily used in anti-aging skincare treatments?

- A. Nerve Growth Factor (NGF)
- B. Platelet-Derived Growth Factor (PDGF)
- C. Epidermal Growth Factor (EGF) ✓**
- D. Vascular Endothelial Growth Factor (VEGF)

Provide an example of how growth factors are used in cosmetic treatments and their intended effects.

An example of growth factors in cosmetic treatments is the use of platelet-rich plasma (PRP) therapy, where growth factors derived from the patient's own blood are injected into the skin to stimulate healing, improve skin texture, and reduce wrinkles.

What are the challenges associated with using growth factors in regenerative medicine?

The challenges associated with using growth factors in regenerative medicine include issues with delivery methods, stability of the factors, potential for adverse effects, and the risk of tumorigenesis due to uncontrolled cell growth.

How do growth factors differ from hormones in terms of their function and mechanism of action?

Growth factors differ from hormones in that they primarily act locally to stimulate cell growth and differentiation, while hormones function systemically to regulate broader physiological processes.

What are the potential applications of growth factors in medicine? (Select all that apply)

- A. Cancer treatment ✓**
- B. Regenerative medicine ✓**
- C. Antiviral therapies
- D. Anti-aging treatments ✓**

Describe the role of growth factors in cancer treatment and how they can be targeted therapeutically.

Growth factors are proteins that stimulate cell growth and division, and in cancer treatment, they can be targeted using therapies that inhibit their receptors or downstream signaling pathways, thereby slowing tumor growth and progression.

Discuss the significance of signal transduction in the action of growth factors.

The significance of signal transduction in the action of growth factors lies in its role in mediating cellular responses to these external signals, facilitating processes like growth, division, and differentiation.

Which growth factor is primarily involved in promoting the growth and differentiation of epidermal cells?

- A. Platelet-Derived Growth Factor (PDGF)
- B. Epidermal Growth Factor (EGF) ✓**
- C. Vascular Endothelial Growth Factor (VEGF)
- D. Nerve Growth Factor (NGF)

Which of the following are characteristics of growth factor receptors? (Select all that apply)

- A. Located on the cell surface ✓**
- B. Bind to hormones
- C. Initiate signal transduction ✓**
- D. Directly enter the cell nucleus

Which growth factor is most similar in structure to insulin?

- A. Fibroblast Growth Factor (FGF)
- B. Nerve Growth Factor (NGF)
- C. Insulin-like Growth Factor (IGF) ✓**
- D. Epidermal Growth Factor (EGF)

Which growth factors are involved in cell proliferation? (Select all that apply)

- A. Epidermal Growth Factor (EGF) ✓**
- B. Vascular Endothelial Growth Factor (VEGF)
- C. Platelet-Derived Growth Factor (PDGF) ✓**
- D. Nerve Growth Factor (NGF)

Which growth factors are involved in angiogenesis? (Select all that apply)

- A. Vascular Endothelial Growth Factor (VEGF) ✓**
- B. Platelet-Derived Growth Factor (PDGF) ✓**
- C. Nerve Growth Factor (NGF)
- D. Insulin-like Growth Factor (IGF)

Which growth factor is involved in wound healing and embryonic development?

- A. Epidermal Growth Factor (EGF)
- B. Fibroblast Growth Factor (FGF) ✓**
- C. Vascular Endothelial Growth Factor (VEGF)
- D. Insulin-like Growth Factor (IGF)

Explain how growth factors contribute to tissue repair and regeneration.

Growth factors contribute to tissue repair and regeneration by promoting cell proliferation, enhancing the migration of cells to the injury site, and stimulating the differentiation of stem cells into specialized cell types necessary for restoring tissue integrity.

Which of the following are functions of growth factors? (Select all that apply)

- A. Stimulating cellular growth ✓**
- B. Inhibiting apoptosis
- C. Promoting differentiation ✓**
- D. Regulating blood pressure

Which growth factors play a role in wound healing? (Select all that apply)

- A. Epidermal Growth Factor (EGF) ✓**
- B. Fibroblast Growth Factor (FGF) ✓**
- C. Nerve Growth Factor (NGF)
- D. Insulin-like Growth Factor (IGF)