

Fill in the blanks

1. Name the enzyme that catalyzes the production of Inositol trisphosphate and name its substrate

The enzyme is.....

The substrate is

What is the action of inositol trisphosphate

2. Calmodulin and other calcium binding proteins contain a super secondary structure that binds calcium. What is this structure

3. The following hormones act by activating tyrosine kinase

a. Growth hormone ✓

b. Insulin ✓

4. Name the enzyme that is activated by diacylglycerol

phospholipase C / Phosphokinase C ✓

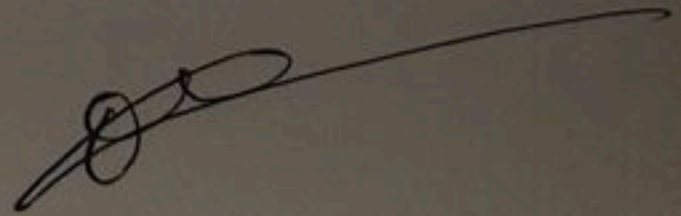
5. The presence of SH₂ domains in some proteins makes these proteins able to bind.....

6. Aspirin is used as anti-inflammatory, the enzyme that is inhibited by aspirin is....., the substrate of the enzyme is.....

Anatomy

1. Describe the anatomical relations of the adrenal glands (2.5 marks)
2. Describe the blood supply of the pituitary gland (2.5 marks)
3. List the medial relations of the right lobe of the thyroid gland (2 marks)
4. Describe one of the cells of the parathyroid gland (2 marks)

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Pathology questions

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18

1. What is the tumor that complicates Hashimoto thyroiditis (1 mark)

①

2. Mention 2 causes of Cushing syndrome (2 marks)

A. Primary hypothalamus-pituitary ACTH-producing disease (Cushing)

B. Primary adrenocortical hyperplasia and neoplasms.

C. Ectopic ACTH secretion from nonpituitary tumors.

3. Mention 2 causes of primary hyperaldosteronism (2 marks)

A. ~~adrenocortical~~ Bilateral idiopathic adrenocortical hyperplasia.

B. Adrenocortical neoplasms (Benign + Malignant)

②

4. Mention 2 syndromes of familial pheochromocytoma (2 marks)

A. RET → MEN 2

②

B. NF1 → Type 1 ~~neuro~~ neurofibromatoma

5. Mention mechanisms of longterm complications of diabetes mellitus (2 marks)

A. Production of AGE and its subsequent binding to R

B. Activation of intracellular ~~ph~~ PKC

②

6. Mention mechanisms of insulin resistance in obese patients of type 2 diabetes (2 marks)

A. ~~Adipokines~~ ^{secreted from adipose tissue} decrease of adiponectin and increase of resistin

B. Decrease in ~~PPAR~~ γ PPAR γ

C. Excess FFAs

7. What is the earliest clinical manifestation of diabetic nephropathy (1 mark)

~~microalbuminuria~~ ~~proteinuria~~ microalbuminuria

Practical

1. The type of thyroiditis which is characterized by granuloma is (1 mark)

subacute granulomatous thyroiditis (De Vane)

2. Mention the tumors of multiple ^(MEN) endocrine neoplasia type 1 (1.5 marks)

A. Parathyroid tumors (cause hyperparathyroidism)

B. Pituitary ~~pituitary~~ tumors \rightarrow Prolactin secreting ~~pit~~ macroadenoma
 \rightarrow Somatotropin secreting adenoma

C. Pancreas tumors \rightarrow Insulinoma
 \rightarrow GASTROGASTROMA

3. Mention pathologic features of diabetic nephropathy (1.5)

A. ~~Cap~~ Capillary basement membrane thickening

B. mesangial sclerosis

C. Nodular glomerulosclerosis

4. What is the pathologic change that occurs in pituitary gland cells in all cases of Cushing syndrome (1 mark)

Hyaline Crooke

5. What occurs in adrenal gland in patients who are on exogenous administration of steroids (1 mark)

~~They can develop hypercortisolism hypercortisolemia~~

~~They~~ Adrenal atrophy because of the suppression of end ACTH so the zona reticularis and the zona fasciculata atrophied, however the zona glomerulosa will be of normal size and thickness.