MedChem 402 Final Exam part B
December 12, 2007

1. Selenium can be essential for the inactivation of reactive oxygen species because of which enzyme being a selenoprotein a) glutathione peroxidase b) glutathione reductase c) glucose-6-phosphate dehydrogenase d) superoxide dismutase

2. Natural (RRR) vitamin E is labeled on vitamin products as a) d-alpha tocoferol b) l-alpha tocopherol c) rac-alpha tocopherol d) dl-alpha tocopherol

3. What is FALSE about vitamin K a) facilitates carboxylation of some glutamate containing peptides b) it decreases the risk of hip fractures c) it is low at birth d) has an upper limit of 200ug

4. Night blindness is caused by low rhodopsin. Rhodopsin undergoes a photochemical reaction to yield opsin and a) all trans retinol b) all trans retinal c)11-cis-retinal d) 11-cis- retinol

5. Low serum calcium would result in a) decreased parathyroid hormone b) increased parathyroid hormone c) decreased 25-hydroxycholecalciferol d) increased 24, 25-dihydroxycholecalciferol

6. In severe liver failure a vitamin D deficiency might occur. Which of the following would relieve the deficiency? A) Ergocalcipherol b) Cholecalciferol c) UV light irradiation d) 25-hydroxycholecalciferol

7. The calcium supplement most appropriate for an 80 year old female with osteoporosis would be a product containing a) calcium citrate b) calcium carbonate c) calcium carbonate plus vitamin D d) calcium citrate plus vitamin D

8. Appropriate vitamin D supplementation for a renal failure patient would best be a) 25-hydroxycholecalciferol b) 1-hydroxycholecalciferol c) 1,25-dihydroxycholecalciferol d) ergosterol

9. Vitamin E reacts with oxygen to form an inactive a) lactam b) hydride c) free acid d) quinone

10. Doses over the UL for vitamin E can increase the risk for a) bleeding b) embolism c) hypercalcemia d) peroxidative stress

11. A diet rich in oily fish would be especially rich in what two vitamins a) vitamins C and K b) vitamins E and A c) vitamin D and folic acid d) vitamins D and A

12. A long term course of tetracycline could a) lower thiamin levels b) lower vitamin A levels c) raise osteocalcin levels d) lower vitamin K1 levels.

13. Hypervitaminosis A is characterized by a) severe headache b) kidney stones c) cardiomyopathy d) bleeding

Vitamin D	1000 IU
Vitamin B6	10 mg
Folic acid	400ug
Vitamin B12	200 mcg
Calcium	100 mg

The above popular formulation is Rx Essentials by Nature Made to be taken by those on acid reflux/heartburn meds like Nexium, Prevacid, Prilosec.

14. Rx essentials is formulated as such to account for impaired absorption of which of the contained vitamin that would most likely be low when proton pump inhibitors are used a) vitamin C b) vitamin B12 c) folic acid d) vitamin D

15. This combination would not be appropriate for a postmenopausal female because a) it is over the UL for vitamin D b) it is over the UL for vitamin B12 c) it is too high in vitamin A d) it has little calcium

16. As a product to be taken as a supplement for someone with a vegan diet this would not be appropriate because a) it should have higher amounts of vitamin B12. b) it has too much vitamin C c) it lacks riboflavin d) it lacks biotin

17. A product formulated to lower homocysteine for a patient with the "TT" variant of MTHFR should especially contain a) folic acid at 200ug/dose b) folic acid at 400ug/dose c) folic acid at 800ug/dose d) vitamin B6 at 1mg/dose

18. Genetic variability in which enzyme in the vitamin K pathway results in about 40% of the intersubject variability in required dose of warfarin a) vitamin K epoxide reductase b vitamin K reductase c) vitamin K gamma carboxylase d) vitamin K oxidase

19. The following is false about plant carotenoids: a) beta carotene is the most common b) they are the yellow/orange plant pigments c) they all have vitamin A activity d) they are free radical scavengers.

20. Vitamin A circulates in the blood mainly as a) beta carotene b) retinol palmitate c) retinoic acid d) retinal acetate

21. Vitamin C acts, in part, as an antioxidant by a) keeping iron in the reduced state b) keeping vitamin E in the reduced state c) keeping copper in the reduced state d) inducing cytochrome enzymes

22. Niacin is active in the protective mechanisms we have to reduce the damage caused by free radical reactions because a) it generates tryptophan b) glutathione peroxidase requires NADPH c) superoxide dismutase requires NADH d) glutathione reductase requires NADPH

23. Copper and zinc intake would be important for high activity of what important enzyme that helps protect against free radical damage a) superoxide dismutase b) diaphorase c) peroxidase d) transketolase

24. High alcohol intake sharply decreases body levels of which vitamin a) thiamin b) vitamin B6 c) vitamin K d) vitamin B12

25. Vitamin A deficiency results in a) urate acidurea b) xeropthalmia c) lack of osteocalcin d) pellegra.