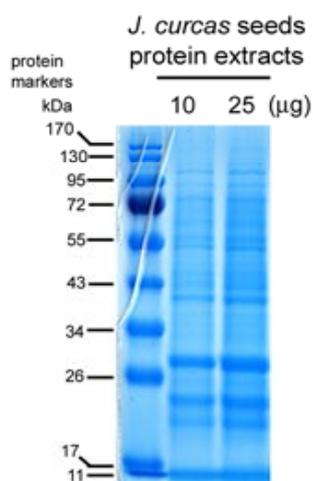


國立嘉義大學100學年度

微生物免疫與生物藥學系碩士班招生考試試題

科目：生物化學

1.



The extracted proteins of *J. curcas* seeds were subjected to SDS-PAGE and stained with Coomassie Brilliant Blue. The positions of molecular mass markers (in kilodaltons; kDa) are shown on the left. The extracted proteins of *J. curcas* seeds have anti-cancer effects on human leukemia cells. Please design experiment to demonstrate the 29 kDa of extracted proteins on the SDS-PAGE has the anti-cancer effects in human leukemia cells. (20%)

2. Please detailed describe the principle and application of immunoprecipitation. (15%)

3. Please explain the following terms associated with lipid metabolism: (20%)

- A. Unsaturated fatty acid
- B. Odd-chain fatty acid
- C. HDL
- D. Lipid peroxidation

4. Acetyl-CoA carboxylase plays an essential role in regulating fatty acid biosynthesis and degradation. Please describe the rate-limiting reaction which is driven by Acetyl-CoA carboxylase (ACCase). (5%) Many known molecules, such as citrate and insulin, are able to activate the activity of ACCase. If there is an inhibitory effect on ACCase by garlic extracts, please set up a method or an assay to isolate the key compound. (5%)

5. Sugars may be linked to proteins and form glycoproteins. Please describe the process of protein glycosylation and where it takes place, and how to analyze the oligosaccharide structure of glycoprotein. (20%)

6. Please explain the following terms and their meaning: (15%)

- A. Coenzyme A
- B. NADPH
- C. Cytochrome