

臺北醫學大學 100 學年度碩士班暨碩士在職專班招生入學考試

應用營養學試題

本試題第1頁；共1頁
(如有缺頁或毀損，應立即請監試人員補發)

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| 注意 事項 | <p>一、本試題共二大題，共計 100 分。</p> <p>二、請將正確答案依題次作答於答案用卷內。</p> <p>三、試題答錯者不倒扣；題次號碼錯誤或不按順序或鉛筆作答，不予計分。</p> |
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一、解釋名詞(每題 5%，共 25%)

1. Cachexia
2. Nutrigenomics
3. Hepatosteatorsis
4. GLUT
5. Goitrogen

二、問答題(共 75%)

1. 2010 年 6 月衛生署公布 2009 年臺灣地區十大死因。排名前三位的死因是什麼？分別說明它們和飲食營養的關係。(18%)
2. 在經費與人力的無限供應下，你如何評估孕婦的營養狀況？(12%)
3. 國內立法院通過的營養相關法案有哪些？未來可推動哪些比較迫切的營養相關法案？(15%)
4. 以下二表格摘錄自“Uchiyama S et al.發表於 Nutrition (2011) 27: 287 – 292 之論文 Prevention of diet-induced obesity by dietary black tea polyphenols extract in vitro and in vivo”。請依據所提供的資料回答以下問題：
 - (1) 請將本論文題目翻譯為中文，並解釋 in vitro 與 in vivo 的意義，同時說明 black tea polyphenol extract (BTPE) 內可能包含之活性組成。(10%)
 - (2) 請詳細說明 Table 2 所呈現的結果。(6%)
 - (3) 請敘述本研究可能之實驗設計與結論，並針對此結論提供可能的解釋與說明。(14%)

Table 2
Body weight gain, tissue weight, and energy intake of C57BL/6N mice fed a standard (AIN) or high-fat diet (HFD), with or without BTPE

| | Standard diet | | | High-fat diet | | |
|------------------------------------|---------------|--------------|--------------|---------------|--------------|---------------|
| | AIN | 1% BTPE | 5% BTPE | HFD | 1% BTPE | 5% BTPE |
| Initial body weight (g) | 17.6 ± 0.25 | 17.6 ± 0.28 | 17.7 ± 0.21 | 17.2 ± 0.31 | 17.3 ± 0.34 | 17.4 ± 0.29 |
| Body weight gain (g/56 days) | 6.7 ± 0.55 | 7.8 ± 0.55 | 4.5 ± 0.30 | 10.4 ± 0.90 | 10.5 ± 0.91 | 5.8 ± 0.58* |
| Liver (mg/g body weight) | 44.3 ± 0.87 | 39.7 ± 0.57* | 37.2 ± 0.54* | 42.3 ± 0.91 | 40.1 ± 1.41 | 40.5 ± 0.63 |
| Kidney (mg/g body weight) | 10.62 ± 0.24 | 9.65 ± 0.22* | 10.38 ± 0.31 | 9.47 ± 0.23 | 9.22 ± 0.36 | 10.94 ± 0.25* |
| Spleen (mg/g body weight) | 3.61 ± 0.15 | 3.03 ± 0.08* | 3.37 ± 0.11 | 2.68 ± 0.07 | 2.74 ± 0.09 | 3.19 ± 0.13* |
| Adipose tissues | | | | | | |
| Subcutaneous (mg/g body weight) | 32.1 ± 2.49 | 40.6 ± 2.54* | 24.7 ± 2.09 | 46.9 ± 2.99 | 51.6 ± 4.16 | 27.2 ± 2.97* |
| Retroperitoneal (mg/g body weight) | 8.47 ± 0.90 | 10.66 ± 0.86 | 5.03 ± 0.49* | 14.6 ± 1.42 | 14.6 ± 1.41 | 6.84 ± 0.92* |
| Parametrial (mg/g body weight) | 36.1 ± 2.67 | 43.5 ± 2.31 | 25.7 ± 2.20* | 53.6 ± 3.80 | 56.9 ± 4.99 | 30.5 ± 2.79* |
| Energy intake (kJ/day) | 47.4 ± 1.01 | 48.1 ± 1.38 | 47.9 ± 1.23 | 46.7 ± 1.21 | 46.2 ± 0.79 | 46.4 ± 1.49 |
| Total food intake (g/56 days) | 158.1 ± 2.41 | 161.8 ± 3.32 | 168.1 ± 3.09 | 122.0 ± 3.15 | 122.0 ± 1.88 | 127.6 ± 3.55 |

BTPE was mixed with a standard diet and a high-fat diet at a level of 1% or 5% (w/w). Values were measured after 8 wk of feeding. Data are means ± SEM for 10–12 mice.
* $P < 0.05$ for the BTPE-supplemented group versus AIN or HFD group.

Table 4
Effect of BTPE on fecal triglyceride content in mice fed a standard (AIN) or high-fat diet (HFD)

| | Standard diet | | High-fat diet | |
|---|---------------|--------------|---------------|--------------|
| | AIN | 5% BTPE | HFD | 5%BTPE |
| Fecal excretion (g/2 days/cage) | 1.55 ± 0.11 | 2.65 ± 0.16* | 1.90 ± 0.06 | 3.22 ± 0.16* |
| Fecal triglyceride content (mg/g dry faces) | 6.62 ± 0.76 | 3.89 ± 0.54* | 8.46 ± 0.68 | 23.3 ± 2.70* |
| Triglyceride excretion (mg/2 days/cage) | 10.4 ± 1.51 | 10.6 ± 1.80 | 16.2 ± 1.58 | 75.5 ± 10.2* |

Mice consumed the standard or high-fat diet, with or without 5% BTPE, for 2 wk. Each group consisted of two cages ($n = 8$ /group, four mice/cage). Feces were collected two times per day for 2 d during the course of the experiment. Data are means ± SEM of two cages, for four experiments ($n = 8$).
* $P < 0.05$ for AIN or HFD group versus a BTPE-supplemented group.