

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)

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.