

索引

Index

- (1) 本索引可幫助讀者快速找到相關主題的頁數，其索引範圍概括本書大部分文字，但並不包括 B1, B2 的問題集或 C2 的儀器試劑清單。
- (2) 一般索引都在其頁數中指明是否含有圖表，但因本書圖表太多，幾乎每一重要主題都有圖或表，因此並不在索引頁數中註明，以免反而導致查閱困難。
- (3) 本索引依原始英文名詞的字母順序排列，並在其後附註中文，這些中文名詞僅供參考，並非標準譯名。
- (4) 因為本書集中討論蛋白質與酵素，因此索引中使用的辭彙，大多不再加上蛋白質或酵素這兩個詞；例如，enzyme kinetics 直接找 kinetics 即可，而 conformation 指的也就是 protein conformation，但 protein kinase 是個專有名詞，則必須一起列出。

A

Abzyme 催化性抗體, 76, 96
 Accident prevention 防止意外, 33-34, 245
 Acetate buffer 醋酸緩衝液, 61, 144, 195
 Acetic acid 醋酸, 213-214
 Acetone powder 丙酮粉末, 113-114, 116
 Acetyl CoA 乙醯輔酶 A, 92
 Acetylcholinesterase 乙醯膽鹼酯酶, 88
 Acrylamide 丙烯醯胺, 34, 148-152, 205
 Activated Thio-Sepharose 4B [商品名] 活化型親和吸著劑, 129
 Active site 活性區, 76, 84-85, 226
 Activity assay 活性分析, 2-15, 19, 141-146, 195-196
 Activity staining 活性染色, 4-13, 19, 143-144, 154, 215-216
 Activity unit 酵素活性單位, 5, 80, 146
 Acylation 醯化作用, 85
 Adaptor 連接頭, 121-122, 126, 201-202
 Adsorption 吸附, 118, 132
 Affinity 親和性, 55, 68, 79, 86, 128, 162
 Affinity chromatography 親和層析法, 69, 86, 118, 128-130, 138, 164
 affinity absorbent 親和吸著劑, 129-130, 164
 coupling reaction 耦合反應, 129
 spacer arm 延長臂, 129
 Affinity partitioning 親和性液相分配, 131
 Agarose 洋菜醣, 119
 Agricola [商品名] 生物農學光碟資料庫, 35
 AH-Sepharose 4B [商品名] 親和吸著劑, 129
 Albumin 白蛋白, 139, 144, 146, 156, 162, 193, 208, 217
 Alcohol dehydrogenase 酒精去氫酶, 75, 141-143, 217
 Alkaline phosphatase 鹼性磷酸酶, 218-220
 Allosteric effect 異位調節功能, 74, 90-91, 225
 Allosteric enzyme 異位調節酶, 90
 Alpha helix, α 螺旋, 65-66, 224-226
 Alumina plate 氧化鋁片, 205-206, 209
 Amido black 醯胺黑, 155
 Amino acid 胺基酸, 57-64
 alpha carbon, α 碳, 57, 65
 composition analysis 胺基酸組成分析, 158
 hydrolysate 胺基酸水解液, 158
 pK_a 解離度, 60-61
 residues 基團, 58

sequencing 胺基酸序列分析, 12-13, 65, 69-70, 159-161, 166-167, 220-221
 structure 胺基酸構造, 57-58
 Ammonia solution (25%) 氨水, 213
 Ammoniacal silver 氨銀, 153-154, 212-214
 Ammonium molybdate 鉬鉍酸, 195
 Ammonium persulfate (APS) 過硫酸鉍, 149, 152, 206
 Ammonium sulfate 硫酸鉍,
 effect in enzyme activity 對活性影響, 111, 115-117, 139, 146
 HIC 疏水性層析法, 130
 percent saturation 百分飽和度表 (0°C), 200
 protein fractionation, salting out 蛋白質分割, 4-5, 42, 69, 114-117, 135, 138, 164, 199-200
 Ampholyte 雙性電離子, 60, 127, 155, 210, 212
 Amphoteric 雙性性質, 54, 60
 Amyloglucosidase 澱粉葡萄糖酐酶, 211
 Amyloplast 造粉體, 53
 Amylose 直鏈澱粉, 143
 Antibody 抗體, 95, 160, 162-164, 166
 Antigen 抗原, 53, 95, 162-163
 Apoenzyme 脫輔基酵素, 74
 Aprotinin 蛋白酶抑制劑, 217
 Archaeobacteria 古生菌, 52
 Arginine (Arg, R) 精胺酸, 58-59, 85, 140, 154, 210, 212
 Artificial enzyme 人造酵素, 96
 Ascites fluid 腹水, 163
 Asparagine (Asn, N) 天冬醯胺酸, 58-59, 158
 Aspartic acid (Asp, D) 天冬胺酸, 58-59, 85-86, 88, 90-91, 158, 161
 Aspartyl protease 天冬胺酸蛋白酶, 88
 ATCase (aspartate transcarbamoylase) 天冬胺酸轉胺甲醯基酶, 90-91
 ATP 腺嘌呤核苷三磷酸, 53, 91-94, 227
 Autopipet 自動吸管, 24, 110
 Autoradiography 放射顯像法, 154

B

Balance 天平, 24-26, 110
 Ball mill 球磨機, 113
 Basic trainings 基本操作 Z, 21-30, 232
 BCA (bicinchoninic acid) 二金雞納酸, 139, 194
 BCIP (5-bromo-4-chloro-3-indolyl-phosphate) 溴氯吲哚磷酸, 219-220

Benzamidine 蛋白酶抑制劑, 145
 Beta amylase, β 澱粉酶, 15, 143-144, 215-216
 Beta sheet, β 長帶, 65-66,
 Beta turn, β 轉折, 65-66, 226
 Bi-Bi reaction 雙-雙式雙基質反應, 81
 Big bang 大爆炸, 51
 Biochemistry Basics 生物化學基礎, 45-101
 Bio-Gel [商品名] 膠體過濾膠體, 120, 122
 Bioinformatics 生物資訊學 96, 165-166
 Biotechnology 生物技術, 95-96, 165-168
 Biotin 生物素, 218-220
 Bis (*N, N'*-methylene-bis[acrylamide]) 亞甲雙丙烯醯胺, 119, 149, 152, 205
 Bisubstrate reaction 雙基質反應, 81
 Biuret method 蛋白質定量法, 139-140
 Blotting buffer 轉印緩衝液, 217, 221
 Blue Dextran [商品名] 藍葡聚糖, 29, 123, 156
 Boiling 煮沸, 142, 209
 Borate buffer 硼酸緩衝液, 144, 206
 Bradford method 蛋白質定量法, 69, 140, 193
 Bromophenol blue 溴酚藍, 206, 209-211
 BSA (bovine serum albumin),
 see Albumin
 Buffer A 緩衝液 A, 199
 Buffer B 緩衝液 B, 4-5, 199
 Buffer C 緩衝液 C, 4-9, 199, 201-203
 Buffer concentration 緩衝液使用濃度, 145
 Buffering effect 緩衝作用, 54

C

Callus 癒瘡組織, 94, 113
 Calmodulin 攜鈣素, 89
 cAMP (cyclic AMP) 環狀 AMP, 89, 93
 Capillary electrophoresis 毛細管電泳, 148, 166-167
 CAPS (2-[cyclohexylamino]-1-propanesulfonic acid)
 環戊烷胺基丙烷磺酸, 221
 Carbonate buffer 碳酸緩衝液, 144
 Carbonic anhydrase 碳酸酐酶, 208, 211, 217
 Carbonyl group 羰基, 85, 139-140
 Carboxypeptidase 羧肽酶, 75, 84-85, 158
 Carrier 分子載體, 162
 Cartoon 漫畫, 64, 76-77
 Cascade 梯瀑, 87, 90, 93
 Catalase 觸酶, 53, 75, 156
 Catalytic mechanism 催化機制, 84-86

Catalytic triad 催化三角, 85-86, 88
 cDNA (complementary DNA) 互補 DNA, 70, 157,
 159, 225-226
 Celite 矽藻土, 114
 Cell 細胞, 51-53, 92, 94, 112-114
 Cell-free lysate 溶胞液, 94
 Cellophane 賽路芬, 216
 Central Dogma 生物學中心教條, 165
 Centrifuge 離心機,
 bench top, swing bucket 懸藍式離心機, 26, 29
 high speed 高速離心機, 26-27, 34, 109
 ultracentrifuge 超高速離心機, 109, 133-135, 157
 Centriplus, Centriprep, Centricon (Amicon) [商品名]
 濃縮離心管, 9, 29, 135-136, 202, 204
 Cesium chloride (CsCl) 氯化銫, 134
 Chaperonin, 67
 Checking list 各種檢查表單,
 all utilities in this workshop 所有儀器試劑清單,
 246-249
 for teaching assistants 助教行事備忘, 245
 group members 分班分組表, 233
 group rations 儀器及組產表, 236
 weekly duties 值日工作表, 237, 245
 Chloroplast 葉綠體, 53, 114
 Chromatofocusing 色層聚焦法, 127-128, 138
 Chromatography 色析法, 118-132,
 column packing 管柱裝填, 122-124, 201-202
 principle 層析法原理, 118
 see Affinity chromatography
 see Chromatofocusing
 see Covalent chromatography
 see Gas chromatography (GC)
 see Gel filtration
 see HIC (hydrophobic interaction
 chromatography)
 see Ion exchange
 see Metal chelating affinity chromatography
 see PPC (paper partition chromatography)
 see Reverse phase chromatography
 see TLC (thin layer chromatography)
 CH-Sepharose 4B 親和吸著劑, 129
 Chymotrypsin 凝乳酶, 82, 85-86, 88, 158, 161
 Chymotrypsinogen 凝乳酶原, 88
 Cibacron-Blue [商品名] 類 NAD⁺ 親和性染色劑,
 130
 Citrate buffer 檸檬酸緩衝液, 144
 Citric acid 檸檬酸, 212

CNBr (cyanogen bromide) 溴化氰, 161
 CNBr-activated Sepharose [商品名] CNBr 活化膠體, 129, 164
 Coenzyme 輔酶, 67, 74, 123
 Cofactor 輔助因子, 67, 74-75, 123, 146
 Column 管柱, 121, 201,
 maintenance 管柱保存, 123
 packing 管柱裝填, 122-124, 201-202
 size 管柱大小, 121
 system 管柱系統, 121
 Comb 樣本梳, 204-207, 209
 Compartmentation 區隔化, 88, 94
 Competitive inhibition 競爭性抑制, 83
 Con A 刀豆素, 130
 Concentration 濃縮方法, 29, 135-136, 202
 Conformation 構形, 55, 65-68, 74, 86, 89-91
 Continuous-reaction 連續測定法, 143
 Convergent evolution 趨同演化, 88
 Coomassie Brilliant Blue 蛋白質染劑,
 protein assay, CBG 蛋白質定量法, 8, 69, 140,
 193-194
 staining method, CBR 染色法, 153-154, 212, 221
 Coupling reaction, enzyme assay 耦合反應, 141-143
 Coupling reaction, affinity chromatography 親和吸著劑耦合反應, 129
 Covalent chromatography 共價層析法, 129
 Crude extraction 酵素粗抽, 4-5, 42
 Crude protein 粗蛋白質, 4-5, 112, 200
 C-terminal determination, C-端定序法, 158
 Current Content [商品名] 期刊資料庫, 35
 Cut-off 截留分子量, 135, 202
 Cysteine (Cys, C) 胱氨酸, 58-60, 66, 74, 82, 129, 146, 158
 Cytokine 細胞激素, 93
 Cytoskeleton element 細胞骨架系統, 53

D

DAB (diaminobenzidine) 二胺基聯苯胺, 220
 Dansylation 丹磺醯化, 158-159
 Deacylation 去醯化作用, 85
 Dead volume 無效空間, 121, 126
 DEAE Sephacel [商品名] 陰離子交換膠體, 8-9, 125, 202-203
 Denaturation 變性, 67-68, 117, 146
 Desalting 脫鹽, 119, 135
 Destruction box, 88, 226, 251

Dextran 葡萄糖聚糖, 119, 131
 Diafiltration 過濾濃縮法, 135-136, 202
 Dialysis 透析, 4-5, 23, 29, 117, 135-136
 Dichlorodimethylsilane 二氯二甲基硅烷, 212
 Dielectric constant 介電常數, 54, 55
 Diffusion 擴散, 120-121
 DIFP (diisopropyl-fluorophosphate) Ser 蛋白酶抑制劑, 82
 Disc-PAGE 原態電泳 (不連續電泳), 4-13, 19, 138, 143, 149-152, 156-157, 203-207, 209
 Dispersion 瀰散, 120-121
 Dissertations 相關的學位論文, 250
 Disulfide bond 雙硫鍵, 58, 66-67, 74, 85, 129, 158, 160, 207
 Dithiothreitol (DTT) 二硫醇蘇糖醇, 144, 207
 Divergent evolution 趨異演化, 88
 DMF (dimethylformamide) 二甲基甲醯胺, 219
 DNA complexity, DNA 複雜度, 226
 Domain 功能區塊, 67-68
 Donnan effect, 126
 Double diffusion 雙向免疫擴散, 164
 Double reciprocal plot 雙倒數曲線,
 see Lineweaver-Burk plot
 Dye-binding method (Bradford method) 色素結合蛋白質定量法, 140, 193-194

E

Eadie-Hofstee plot 動力學作圖法, 79
 EDC (*N*-ethyl-*N'*-(3-dimethylaminopropyl) carbodiimide HCl) 脫水劑, 129
 Edman degradation, N-端胺基酸降解法, 70, 159, 167, 220-221
 EDTA (ethylenediamine tetraacetic acid) 乙二胺四乙酸, 143-146, 206, 208, 218
 Effector 效應物, 90-91, 93
 Elastase 彈性蛋白酶, 85
 Electroelution 電泳溶離, 10-11, 133, 204
 Electronegativity 陰電性, 55
 Electrophoresis 電泳,
 gel system 膠體系統, 150
 principle 電泳原理, 147-153
 see Disc-PAGE
 see Preparative electrophoresis
 see SDS-PAGE
 see Staining methods
 Electrostatic bond 離子鍵, 55

ELISA reader, ELISA 光度計, 28, 109, 193-198
 ELISA, enzyme-linked immunosorbent assay 酵素免疫
 分析法, 95, 163-164
 Elution speed 溶離速度, 123
 Elution volume (Ve) 溶離體積, 120-121
 Endorphin 腦啡, 88
 Enzyme 酵素, 73-101
 Enzyme complex 酵素複合體, 94
 Enzyme electrode 酵素電極, 95, 142
 Enzyme nomenclature 酵素命名, 73
 Epoxy-activated Sepharose 6B 活化型親和吸著劑, 129
 Epoxyl-Sepharose 6B 親和吸著劑, 129
 ER (endoplasmic reticulum) 內質網, 52, 65
 Ethanol 乙醇, 29, 142, 201-202
 Ethylene glycol 乙二醇, 130
 Ethylenediamine 乙二胺, 212
 Eukaryote 真核細胞, 51-53
 Exon 外顯子, 88
 Extein 外顯蛋白, 88

F

Ferritin 鐵蛋白, 156
 Ferro-sulfate molybdate 亞鐵硫酸鉬, 195
 First order reaction 一級反應, 79
 Flagella 鞭毛, 52
 Flow charts 流程圖,
 enzyme kinetics 酵素動力學大綱, 77
 enzyme purification stages 酵素純化階段與分析方
 法, 112
 How to start? 如何開始? 238
 immunization procedure 免疫及抗體純化流程, 163
 protein isolation and microanalysis 蛋白質快速純化
 及微量分析, 166
 protein technology 蛋白質科技, 165
 X1~X6 各實驗單元流程圖, 2-14
 Formaldehyde 甲醛, 212, 214
 Formate buffer 甲酸緩衝液, 144
 FPLC (fast performance liquid chromatography) [商品
 名] 快速液相層析法, 131-132, 133, 156, 167
 Fraction collector 分割收集器, 121, 201
 Fractogel TSK [商品名] 層析膠體, 132
 Free radical 自由基, 149
 Freezer 冷凍櫃, 109-110
 Freezing 冷凍, 5, 109-110, 113, 145-146
 French press, French 氏壓力研磨機, 113
 Freund's adjuvant, Freund 氏佐劑, 163

Fusion protein 融合蛋白質, 95

G

Gamma turn, γ 轉折, 66
 Gas chromatography (GC) 氣相層析法, 118
 GCG (Genetics Computer Group) [商品名] 序列分
 析軟體, 30, 159
 Gel drying 膠片乾燥法, 155, 216
 Gel filtration 膠體過濾法, 6-7, 69, 118-124, 138,
 156, 200-202,
 column packing 管柱裝填, 122-124, 156, 201-202
 gel support, 膠體介質, 119-120
 molecular weight standard 分子量標準組, 156
 sample application 樣本添加, 122
 Gel regeneration 膠體再生, 123, 127
 Gel support, gel matrix 膠體介質, 119-120
 Gelatin 明膠, 218-220
 Gene expression 基因表現, 93
 Glass bead 玻璃珠, 113
 Glc-1-P (glucose-1-phosphate) 葡萄糖一磷酸, 15,
 143, 195-198, 215, 224-227
 Glucagon 胰增糖素, 90
 Glutamate dehydrogenase 麩胺酸去氫酶, 217
 Glutamate transaminase 麩胺酸轉胺酶, 75
 Glutamic acid (Glu, E) 麩胺酸, 58-59, 85, 158, 161
 Glutamine (Gln, N) 麩醯胺酸, 58-59, 158
 Glutaraldehyde 戊二醛, 212-213
 Glyceraldehyde-3-P dehydrogenase 甘油醛三磷酸去
 氫酶, 75
 Glycerol 甘油, 24, 145-146, 163, 206, 209-211
 Glycine (Gly, G) 甘胺酸, 58-59, 66, 85, 150-151,
 217
 Glycogen phosphorylase 肝醣磷解酶, 74, 89,
 224-228
 Glycolysis 醣解作用, 92, 167
 Glycoprotein 糖蛋白, 67, 153, 214
 Glyoxosome 乙醛酸循環體, 53
 Golgi body 高爾基氏體, 52
 Gradient gel electrophoresis 梯度電泳, 149, 156-157
 Gradient formation 梯度製造, 8-9, 127, 133-134,
 156-157, 202-204, 209-210
 Gradient mixer 梯度製造器, 201-202, 209

H

- Halophile 嗜鹽菌, 52
 Handerson-Hasselbalch equation 緩衝作用公式, 61
 Hapten 半抗原, 162
 Heavy metal 重金屬, 82
 Heme 血質, 140, 156
 Hemocyanin 血藍蛋白, 162
 Hemoglobin 血紅蛋白, 67, 74, 75
 Heparin 抗凝血素, 130
 HEPES (N-2-hydroxyethylpiperazine-N'-2-ethane sulfonic acid), HEPES 緩衝液, 144
 Heterotropic effect 異配體效應, 91
 Hexokinase 六碳糖激酶, 67
 HgCl₂ (mercuric chloride) 氯化汞, 216
 HIC (hydrophobic interaction chromatography) 疏水性層析法, 118, 130-131, 138
 Histidine (His, H) 組胺酸, 58-60, 74, 85-86, 89, 130
 Histidine carboxylase 組胺酸去羧酶, 73
 Hollow fiber 空心濃縮管, 135-136
 Holoenzyme 全酶, 74
 Homogeneous enzyme 均質酵素, 94, 112, 166
 Homogenizer 均質機, 113
 Homotropic effect 同配體效應, 90
 Hormone 荷爾蒙, 93
 Horse radish peroxidase 山葵過氧化酶, 218, 220
 How to start? 如何開始? 35, 238
 HPLC (high performance liquid chromatography) 高效能液相層析法, 131-132, 133, 142, 156, 158, 161, 167
 Human genome project 人類基因體計畫, 96, 167
 Hydration 水合, 54, 115
 Hydride, H⁻ 氫負離子, 75
 Hydrogen bond 氫鍵, 55, 65-66, 68
 Hydrogen peroxide (H₂O₂) 雙氧水, 53, 220
 Hydrolysate 水解液, 158, 221
 Hydrophobic bond (hydrophobic interaction) 疏水性引力, 55, 66, 68, 115-117, 130-131, 207, 212
 Hydroxylapatite, hydroxyapatite 羥磷灰石, 126, 138
- I
- Immobilized enzyme 固定化酵素, 95
 Immunization 免疫流程, 163
 Immunization procedure 免疫及抗體純化流程, 163
 Immunoelectrophoresis 免疫電泳, 148
 Immunoglobulin 免疫球蛋白, 139, 156, 163
 Immunoprecipitation 免疫沉澱法, 164
 Immunostaining 免疫染色, 12-13, 148, 155, 161, 164, 218-220
 Inactivation 酵素失活, 146
 Induced fit 誘生性契合, 86
 Inhibition 抑制, 82-83
 Inhibitor 抑制劑, 82-83, 88, 138, 141, 143, 146
 Insulin 胰島素, 67, 87, 93, 217
 Intein 內隱蛋白, 88
 Intron 內隱子, 88, 224-226
 Invertase 轉化酶, 76, 142
 Iodine 碘, 143, 215
 Ion exchange 離子交換法, 2, 8-9, 69, 118, 124-127, 138, 142, 202-203,
 batch method 批次法, 127
 buffer 緩衝液使用, 126
 capacity 容量, 125
 column operation 管柱操作, 125-127
 counter ion 抗衡離子, 124
 gradient elution 梯度溶離, 8-9, 127, 203
 media 離子交換介質, 124-125
 pecking order 離子取代順序, 124
 regeneration 再生, 127
Ipomoea batatas [學名] 甘藷, 199
 Irreversible inhibition 不可逆抑制, 82-83
 Isoelectric focusing (IEF) 等電聚焦法, 69, 138, 148, 155, 210-212
 Isoelectric point,
 see pI
 Isoleucine (Ile, I) 異白胺酸, 58-59, 85
 Isopycnic equilibration 等密度平衡, 134
- K
- K_{av} 管柱溶離常數, 120
 K_{cat},
 see Turnover number
 K_{cat}/K_m, 77, 80
 KDEL sequence, KDEL 內質網回收信號, 65, 159
 Key word 關鍵字, 35
 Kinetics 動力學,
 enzyme kinetics 酵素動力學, 76-80, 196-198
 starch phosphorylase 澱粉磷解酶, 14-15, 19, 196-198, 227
 K_m (Michaelis-Menten constant) 動力學常數, 15, 76-80, 83, 141, 196-198, 227

L

Labeling 如何標示, 111
 Laboratory layout 實驗室配置圖, 234-235
 Laboratory, establishing 建立實驗室, 109-111
 Lactalbumin 乳白蛋白, 156, 208
 Lactate dehydrogenase 乳糖去氫酶, 156
 Lactoglobulin 乳球蛋白, 211
 Lentil lectin 扁豆凝集素, 211
 Ligand 配體, 128
 Like dissolves like 極性互溶律, 118
 Lineweaver-Burk plot 雙倒數作圖法, 79, 83, 196-198
 Liquid nitrogen 液態氮, 113
 Little Blue Tank [商品名] 電泳溶離裝置, 203-204
 Lock and key 鎖頭與鑰匙, 86
 Lowry method 蛋白質定量法, 139-140
 Lysine (Lys, K) 離胺酸, 58-59, 61, 85, 88, 140, 154, 161, 210, 212
 Lysosome 溶酶體, 53
 Lysozyme 溶菌酶, 53, 73, 217

M

Manometry 測壓法, 142
 Map, laboratory layout 實驗室配置圖, 234-235
 Mass spectrum 質譜儀分析, 69, 157, 166-167
 Maximum velocity,
 see V_{\max}
 Mechanism, catalysis 催化機制, 84-85,
 Medline [商品名] 醫學資料庫, 30, 35
 Membrane protein 膜蛋白質, 114
 Meme 瀾, 54
 Mercaptoethanol, beta 硫醇基乙醇, 114, 129, 139, 144, 152, 199, 208
 Mercuric chloride (HgCl_2) 氯化汞, 216
 MES (2[N-morpholino] ethanesulfonic acid) 嗎林乙基磺酸, 215
 Metabolic regulation 代謝調控, 92
 Metabolomics 代謝體學, 96
 Metal 金屬, 74, 82, 84-85, 88, 123, 130, 143-146
 Metal chelating affinity chromatography (MCAC) [商品名] 金屬螯合層析法, 130
 Metal protease 金屬蛋白酶, 75, 84, 88
 Metallothionein (MT) 金屬硫肽, 158
 Methanesulfonic acid 甲烷磺酸, 158
 Methanogen 甲烷菌, 52
 Methanol 甲醇, 212-214, 216, 217-221

Methionine (Met, M) 甲硫胺酸, 58-59, 85, 161
 Michaelis and Menten, 76
 Michaelis-Menten constant,
 see K_m
 Michaelis-Menten equation, 動力學公式, 77-80, 91
 Microanalysis 微量分析, 166
 Microbodies 微體, 53
 Microsome 微粒體, 53
 Microtiter plate 微量滴定盤, 28, 193-198
 Mitochondria 粒線體, 53, 94
 Mobile phase 流動相, 118-119, 124, 128, 131
 Mobility 泳動率, 147, 151-152
 Molar extinction coefficient 分子消光係數, 140, 161
 Molecular activity,
 see Turnover number
 Molecular cloning 分子選殖, 65, 95
 Molecular weight determination 分子量測定法, 69, 156-157
 Molecular weight standards 標準分子量組合,
 disc-PAGE 原態電泳標準組, 206
 gel filtration 膠體過濾標準組, 6-7, 156
 gradient PAGE 梯度電泳標準組, 157
 SDS-PAGE, SDS 電泳標準組, 8-13, 208, 217
 Western transfer 電泳轉印標準組, 12-13, 217
 Monoclonal antibody 單株抗體, 162-163, 227
 Myoglobin 肌紅蛋白, 66-67, 211, 217
 Myosin 肌凝蛋白, 217

N

NAD^+ , NADH (nicotinamide adenine dinucleotide) 菸鹼醯胺腺嘌呤二核苷酸, 75, 130, 141-142
 Native PAGE,
 see Disc-PAGE
 NBT (nitro blue tetrazolium) 氮藍四銻, 219-220
 Negative cooperativity 正協同作用, 67
 Nickel 鎳, 130
 Nitrioltriactic acid 螯合劑, 130
 Nitrocellulose 硝化纖維紙, 155
 NMR (nuclear magnetic resonance) 核磁共振, 69, 161
 N-OH-succinimide 活化型親和反應基團, 129
 Non-competitive inhibition 非競爭性抑制, 83
 NS-1, myeloma cell 骨髓癌細胞, 163
 N-terminal determination, N-端定序, 158-160, 167, 220-221
 Nuclear region 核區, 52

Nylon 尼龍膜, 154

O

Octyl Sepharose [商品名] HIC 膠體, 130
 One-Page Show 一頁報告, 2-3, 33, 38, 41-41, 232, 243, 245
 Operon 操縱子, 93
 Organelle 胞器, 52-53, 94, 113
 Organic solvent precipitation 有機溶劑沉澱法, 116-117
 Origin of Life 生命源起, 51, 75
 Ovalbumin 卵白蛋白, 156
 Oxirane 親和吸著劑反應基團, 129

P-Q

PABA (*p*-amino benzoic acid) 對氨基苯甲酸, 82
 Particle size, gel 介質粒子大小, 120-121, 132
 Partition 層析液相分配, 118-119, 130-131
 Partitioning 液相分配, 131
 PAS staining, PAS 醣染色, 153, 214-215
 PBS (phosphate buffered saline) 磷酸生理食鹽水, 218-220
 PBST (phosphate buffered saline and Tween) 加 Tween 磷酸生理食鹽水, 219-220
 PC/GENE [商品名] 序列分析軟體, 30, 159, 162, 167, 224, 226
 PCMB (*p*-chloro-mercuribenzoate), 對氯苯甲酸 (Cys 蛋白酶抑制劑), 82
 PEG (polyethylene glycol) 聚乙烯乙二醇, 116
 Penicillin 青黴素, 82
 Peptide 胜肽, 59, 61, 65, 67, 70, 74, 84, 87-88, 148, 158-161, 162, 167
 Peptide bond 胜鍵, 59, 65, 158-159
 Peptide mapping 胜肽圖譜, 148, 160
 Peptidoglycan 胜肽聚醣, 52
 P-E-R-D system 實驗記錄系統, 32, 36-38, 242
 Periodic acid 過碘酸, 214
 Periodic acid-Schiff's reagent, *see* PAS staining
 Peroxidase 過氧化酶, 140, 156
 Peroxisome 過氧化酶體, 53
 PEST site, PEST 降解信號, 159, 224-227, 251
 pH 酸鹼度, buffer 緩衝液, 54, 60-61, 111, 144-146

electrophoresis 電泳, 150-151, 153
 enzyme activity 對活性影響, 68-69, 95, 112-115, 146
 IEF 等電焦集法, 155, 210-211
 ion exchange 離子交換法, 125-128
 protein extraction 蛋白質抽取, 112-115
 pH meter 酸鹼度計, 25, 110, 142, 144
 Phenol oxidase 酚氧化酶, 114
 Phenolic compound 含酚化合物, 114
 Phenyl Sepharose [商品名] HIC 介質, 130
 Phenylalanine (Phe, F) 苯丙胺酸, 58-59, 85, 161
 Phosphatase 磷酸酶, 89, 143-144, 218-220
 Phosphate buffer 磷酸緩衝液, 144-145
 Phosphate, inorganic (P_i) 無機磷酸, 143, 195-198
 Phosphomolybdic-phosphotungstate 磷鉬酸-磷鎢酸, 139-140
 Phosphoric acid 磷酸, 211
 Phosphorylase b 肝糖磷解酶 b, 208, 224-228
 Phosphorylation 磷酸化, 89, 224-227
 pI (isoelectric point) 等電點, 60-61, 64, electrophoresis 電泳, 147, 157, 205
 ion exchange 離子交換, 125-126, 128
 isoelectric focusing 等電焦集法, 69, 128, 155, 210-211
 precipitation 沈澱, 115, 128
 Pili 纖毛, 52
 PITC (phenylisothiocyanate) 苯異硫氰酸鹽, 70, 159
 pK_a 解離度, 60-61
 Plastid 胞質體, 53
 PMSF (phenylmethylsulfonyl fluoride) 苯甲基磺醯化氟, 145-146
 Polyacrylamide 聚丙烯醯胺, 149, 205
 Polybuffer [商品名] IEF 緩衝液, 127-128
 Polyproline II helix 聚脯胺酸螺旋 II, 66, 224-226, 251
 Polytron [商品名] 高效能均質機, 113
 Ponceau 染色劑, 155
 Positive cooperativity 正協同作用, 67,
 Potassium chloride (KCl) 氯化鉀, 153-154
 Potassium iodide (KI) 碘化鉀, 215
 Power supply 電源供應器, 205
 PPC (paper partition chromatography) 濾紙分配色析法, 118, 142
 Precursor 前驅體, 87
 Preparative electrophoresis 製備式電泳, 2, 10-11, 133, 148, 203-204
 Primary structure 一級構造, 64-65, 159

Primer 引子, 143, 227
 Pristane 降植烷, 163
 Prokaryote 原核細胞, 51-52
 Proline (Pro, P) 脯胺酸, 58-59, 64, 66, 224-226
 Proplastid 前胞質體, 53
 Prosthetic group 輔基, 67, 160, 209
 Protamine sulfate 魚精蛋白, 117, 138
 Proteases 蛋白質水解酶, 70, 82-83, 88, 146, 160-161
 Proteasome 蛋白酶體, 88-89, 93
 Protein 蛋白質, 65-101,
 structure analysis 蛋白質構造分析, 69-70, 158-161,
 166-167
 Protein A 蛋白質 A, 130
 Protein assay 蛋白質定量法, 69, 139-140, 193-194
 Protein engineering 蛋白質工程, 96, 196
 Protein extraction 蛋白質抽取, 112-117
 Protein kinase 蛋白質激酶, 89
 Protein technology 蛋白質科技, 69, 165-168
 Protein transfer,
 see Western transfer
 Proteolytic cleavage 蛋白質裂解, 87-89, 161
 Proteome 蛋白質體, 96, 167-168
 Prothrombin 凝血酶原, 87
 Pulse field gel electrophoresis 脈衝場膠體電泳, 148
 Pump, peristaltic 蠕動幫浦, 201
 Purification fold 純化倍率, 137-138
 Purification strategy 純化策略, 137-138
 Purification table 純化表, 14-15, 138
 Purification techniques 蛋白質純化技術, 69, 105-138
 PVDF (polyvinylidene difluoride) 轉印紙, 217-221
 PVPP (polyvinylpolypyrrolidone) 聚乙烯吡咯烷酮,
 114, 199
 Quaternary structure 四級構造, 64, 67-68, 90, 225

R

Radioactivity 放射性, 142-143
 Ramachandran plot 二級構造預測圖, 66
 Random coil 任意形, 66
 Reagent 試劑, 110
 Recovery 回收率, 137-138
 Reference Manager [商品名] 文獻資料庫軟體, 30, 35
 References 參考文獻, 39, 228, 252
 Regulation 活性調節, 87-91
 Relaxed form 鬆散型, 91
 Renaturation 復性, 67-68

Report format 報告格式, 39-40
 Report writing 報告撰寫, 40-41
 Reporter 報導者, 95
 Reservoir 貯存槽, 121-122
 Reverse osmosis 逆滲透, 135
 Reverse phase chromatography 反相層析法, 118,
 130-131, 138, 161
 Riboflavin (vitamin B₂) 核黃素, 149
 Ribonuclease,
 see RNase
 Ribosome 核糖體, 52
 Ribozyme 催化性 RNA, 73, 75
 RNase (ribonuclease) 核糖核酸酶, 67, 142
 Rotor 離心轉陀, 26-27, 134-135
 Rule, laboratory 實驗室規則, 33
 Running gel 分離膠體, 150, 204, 206

S

Salting in 鹽溶, 114-117
 Salting out 鹽析, 69, 114-117, 123, 138
 Sandwich method, ELISA 三明治法, 95
 Sandwich method (gel drying) 膠片乾燥三明治法,
 155, 216
 Sarin [商品名] 沙林毒氣, 82
 Schiff's reagent, Schiff 氏試劑, 153-154, 214
 SDS (sodium dodecyl sulfate) 硫酸十二酯鈉, 143,
 146, 153-154, 207-208
 SDS-PAGE, SDS 膠體電泳, 8-13, 138, 149-153, 166,
 207-209
 microanalysis 微量分析技術, 161, 166-167
 protein transfer 蛋白質轉印, 155, 161, 166,
 207-209, 217-218
 two-dimensional electrophoresis 二次元電泳,
 12-13, 155, 166
 Second order reaction 二級反應, 80
 Secondary antibody 二次抗體, 95, 218-220
 Secondary bonds 二級鍵, 55, 68, 86
 Secondary structure 二級構造, 64, 65-66, 159, 226
 Sedimentation coefficient 沉降係數, 133, 157
 Sedimentation equilibrium 平衡沈降, 134
 Sedimentation velocity 速率沈降, 134
 Selfish gene 自私的基因, 54
 Separation gel,
 see Running gel
 Sephacel [商品名] 層析膠體, 8-9, 125, 202

- Sephacryl [商品名] 層析膠體, 6-7, 119, 121-123, 201
 Sephadex [商品名] 層析膠體, 119, 121-123, 125
 Sepharose [商品名] 層析膠體, 119, 121-122, 125, 129, 138
 Sequence analysis 序列分析, 159-160
 Serine (Ser, S) 絲胺酸, 58-59, 82, 85, 88-89, 224-227
 Serine proteases 絲胺酸蛋白酶, 82, 85-86, 146
 SH3 domain, SH3 區塊, 224, 226
 Sigmoidal curve, S 型曲線, 90-91
 Signal peptide 信號胜肽, 65, 159, 224-227
 Signal transduction 信息傳導, 89-90, 224-227
 Silanization 矽化處理, 213-214
 Silver nitrate 硝酸銀, 212-215
 Silver staining 硝酸銀染色, 153-154, 212-214
 Site-directed mutagenesis 人工定點突變, 96
 Sodium azide (NaN₃) 疊氮化鈉, 123, 144
 Sodium dodecyl sulfate,
 see SDS
 Sodium thiosulfate 硫代硫酸鈉, 212, 215
 Software, personal computer 個人電腦軟體, 30, 109
 Solid matrix 固相擔體, 128
 Solid phase 固定相, 95
 Soluble starch 可溶性澱粉, 15, 143, 195, 215, 224-227
 Spacer 間隔條, 204-205
 Specific activity 比活性, 5, 15, 81, 138,
 Specificity 專一性, 68, 73, 86, 95, 128-130, 162
 Spectrophotometer 分光光度計, 28, 109
 Speed Vac [商品名] 離心真空濃縮, 136
 Stability 酵素安定性, 145
 Stacking gel 焦集膠體, 150, 153, 204, 206
 Staining methods 膠片染色方法,
 activity staining 活性染色, 19, 143-144, 215-216
 Coomassie Brilliant Blue staining, CBR 染色, 153,
 212, 221
 PAS staining, PAS 醣染色, 153, 214-215
 silver staining 硝酸銀染色, 153-154, 212-214
 Standard proteins 標準蛋白質,
 isoelectric focusing 等電聚焦法, 211
 see Molecular weight standards
 Starch 澱粉, 53, 143, 224-227
 Starch phosphorylase 澱粉磷解酶,
 activity assay 活性分析, 2-15, 19, 141-146, 195-196,
 215-216
 activity staining 活性染色, 4-13, 19, 143-144,
 215-216
 amino acid sequence 胺基酸序列, 226, 251
 background information 背景資料, 224-228
 dissertations 相關學位論文, 250
 enzyme kinetics 酵素動力學, 14-15, 19, 196-198,
 227
 F50 片段, 224
 L78 插入序列, 224-227
 purification methods 純化方法, 199-204
 Stationary phase 固定相, 118
 Steady state theory 穩定狀態理論, 76-77
 Steric specificity 立體專一性, 86
 Stirred cell 攪拌加壓過濾濃縮槽, 135-136
 Stock solution 貯藏溶液, 145
 Stokes radius, Stokes 分子半徑, 119
 Stopped-reaction 反應中止法, 141-142
 Storage, reagent 試劑保存, 145
 Streptavidin 鏈黴抗生物素蛋白, 218-220
 Substrate 基質, 14-15, 76-96, 130, 141-146, 154,
 195-198
 Sulfa drug 磺胺藥, 82
 Sulfosalicylic acid 磺基柳酸, 211
 Sulfuric acid 硫酸, 195
 Sumner, James B., 73
 Svedberg unit 沉降係數 S, 133, 157
 Sweet potato roots 甘藷塊根, 4, 5, 199, 225
 SWISSPRO [商品名] 瑞士蛋白質資料庫, 159
 Synthetic peptide 人工合成胜肽, 160, 162, 166, 226
 Systems biology 系統生物學, 96
- ## T
- Tangential-flow 多層側流板濃縮法, 135-136
 TCA (trichloroacetic acid) 三氯醋酸, 142, 211
 Teacher's guide 教師備忘錄, 239-244
 Teaching assistant 助教, 237, 240, 245
 TEMED (tetramethylethylenediamine) 四甲基乙二
 胺, 149, 152, 205
 Tense form 緊縮型, 91
 Tertiary structure 三級構造, 64, 66-67, 160, 225
 TFA (trifluoroacetic acid) 三氟醋酸, 221
 Thermacidophile 嗜酸熱菌, 52
 Thin-layer electrophoresis (TLE) 薄層電泳, 148
 Thiopropyl-Sepharose 6B 親和吸著劑, 129
 Threonine (Thr, T) 蘇胺酸, 58-59, 89
 Thrombin 凝血酶, 87
 Thyroglobulin 甲狀腺球蛋白, 156
 TiterMax [商品名] 高效價佐劑, 163
 TLC (thin layer chromatography) 薄層層析法, 118,
 158

TLCK (tosyl-L-lysine chloromethyl ketone), trypsin 專一性抑制劑, 82, 145

Total volume (V_t) 總管柱體積, 120-121

TPCK (tosyl-L-phenylalanine chloromethyl ketone), chymotrypsin 專一性抑制劑, 82, 145

Transition state 過渡狀態, 76, 85, 96

Tris (tris[hydroxymethyl]aminomethane) 三羥甲基氨基甲烷, 25, 129, 139, 144-145, 158, 193, 199, 203, 205-206, 208, 217-221

Triton [商品名] 界面活性劑, 144

Trypsin 胰蛋白酶, 73, 82, 85, 88, 161

Trypsin inhibitor 胰蛋白酶抑制劑, 208, 211

Trypsinogen 胰蛋白酶原, 211

Tryptophan (Trp, W) 色胺酸, 58-59, 85, 158, 161

Turnover number, K_{cat} , 轉換數, 80

Tween [商品名] 界面活性劑, 144, 218

Two-dimensional electrophoresis 二次元電泳, 12-13, 161, 166

Tyrosine (Tyr, Y) 酪胺酸, 58-60, 85, 89, 139-140, 161

U

Ubiquitin 泛素, 88-89, 93

Ultracentrifugation 超高速離心法, 69, 94, 133-135, 157

Ultrafiltration 超微薄膜過濾法, 135-136, 138

Ultrasonication 超音波震盪, 113

Un-competitive inhibition 無競爭性抑制, 83

Uni-Uni reaction 單-單式雙基質反應, 81

Universal buffer 通用緩衝液, 144

Unsymmetrical carbon 不對稱碳, 57, 86

Urea 尿素, 68, 219-220

Urease 尿素酶, 73

UV absorbance 紫外線吸光度, 139-140, 153-154

V

Van der Waals bond 凡得瓦爾力, 55, 86

Velocity 反應速率, 77-80, 83, 141, 196-198

Vitamin B₂ (riboflavin) 維生素 B₂, 149

V_{max} (maximum velocity) 最高催化速率, 15, 76-80, 83, 91, 141, 196-198, 227

Void volume (V_o) 排除體積, 120-121, 156

W

Waring blender [商品名] 果汁機, 113, 199

Water 水, 54, 85, 115-117

Weekly schedule 每週時間表, 232

Western transfer 蛋白質轉印, 2, 12-13, 155, 164, 166, 217-218

X-Y-Z

X-ray crystallography, X 光結晶繞射分析, 69, 161, 225

Zero order reaction 零級反應, 79

Zinc 鋅, 75, 84-85

Zone centrifugation 區帶離心, 134

Zone electrophoresis 帶狀電泳, 148

Zwitterion 兩性離子, 60, 150

Zymogen 酶原, 87, 227