SLUYTERMAN, L. A. Æ 402 SMITH, E. E. B., see MILLS, G. T.	Ts'o, P.O. P., L. Eggman and J. Vinograd 532
SMITH, G. H., see RANDLE, P. J.	Ut, N
SMITH, O. H., see PECK, Jr., H. D.	ULBRECHT, G. UND M. ULBRECHT 100
	, M. Ulbrecht und H. J. Wustrow. 110
SMITS, G	Ulbrecht, M., see Ulbrecht, G.
SNELL, F. M. AND C. P. LEEMAN 311	Van Bekkum, D. W. 487
Solomon, J. B 69	Van der Leun, A. A. J., see Thomas, J. B.
Sols, A., see Alvarado, F.	VELICK, S. F., see STRITTMATTER, P.
Søndergaard, E., see Cowlishaw, B.	VERNON, L. P. AND F. G. WHITE 321
SORKIN, E., see RHODES, J. M.	VESTLING, C. S., see FLORINI, J. R.
SPEAKMAN, P. T	Vinograd, J., see Ts'o, P. O. P.
STEELE, R. H., see KARREMAN, G.	Waelsch, H., see Sarkar, N. K.
STOTZ, E., see MARINETTI, G. V.	Wakil, S. J., see Porter, J. W.
STRITTMATTER, P. AND S. F. VELICK 228	WARBURG, O 429
SWABY, L. G., see BENDET, I. J.	WARD, J. M. AND E. A. HAVIR 440
SWAN, J. M. AND E. F. WOODS 432	WARRINGA, M. G. P. J., see Cohen, J. A.
SWEEP, G., see Duysens, L. N. M.	WATANABE, I
Swoboda, P. A. T	Watson, M. L., see Siekevitz, P.
Takata, K., see Osawa, S.	WEBER, M. M. AND A. F. BRODIE 447
TANAKA, K., F. EGAMI, T. HAYASHI, J. E.	— , see Brodie, A. F.
WINTER, A. W. BERNHEIMER, S. MII,	Wessels, J. S. C
P. J. ORTIZ AND S. OCHOA 663	WESTHEAD, Jr., E. W., see ZIMMERING, P. E.
TAPLEY, D. F., see COOPER, C.	WHITE, F. G., see VERNON, L. P.
THOMAS, J. B., A. J. M. HAANS, A. A. J.	WIDMER, C., see CRANE, F. L.
Van der Leun and J. Koning 453	WIERZCHOWSKI, K. L. AND D. SHUGAR 355
THOMPSON, E. O. P	WILLIAMS, R.C., see Fraenkel-Conrat, H.
THORELL, B., see Brody, S.	WINTER, J. E., see TANAKA, K.
Тіетz, А	WOLKEN, J. J. AND A. D. MELLON 267
- , see Porter, J. W.	Wood, T. H. and A. M. Rosenberg 78
TISSIÈRES, A., H. G. HOVENKAMP AND	Woods, E. F., see Swan, J. M.
E. C. SLATER	Wustrow, H. J., see Ulbrecht, G.
TOPPER, Y. J., see SEGAL, S.	Wyckoff, R. W. G., see Labaw, L. W.
TOTTER, J. R., see CORMIER, M. J.	YUDKIN, E. P., see LORAND, L.
Touster, O., R. H. Mayberry and D. B.	
McCormick	ZIMMERING, P. E., E. W. WESTHEAD, Jr.
Towne, J. C., see Grisolia, S.	AND H. MORAWETZ
Toman, J. C., See Ortisolia, S.	

SUBJECT INDEX

2-Acetamidofluorene, deacylation by rat liver and intestine	Adenosine-3'-phosphate-5'-phosphosulfate, formation in extracts of chick embryo cartilage, its conversion into chondroitin sulfate
methiodide	by soluble mammalian enzyme systems, mechanism
, phosphate transfer between AD ³² P and ATP in preparations of —— 100, 110	and washed muscle fibrils 100, 110
N-Acetyl-L-cysteic acid carboxamide, ammonium salt, inertness in systems containing α-chymotrypsin. 420	plasm, physical and chemical studies 532 Adenylic acid, incorporation into RNA from ATP by soluble mammalian
Acetylglutamic acid, mechanism of activation 224	enzyme systems, mechanism 217 Aerobacter aerogenes, biosynthesis of L-
Acetyl phosphatase, in vitro inhibition by thyroxine	fucose 419 Albumin, serum, mercury dimer, kinetics
Adenosine diphosphate, binding to structural proteins of muscle 562	of monomerization, immunochemical studies

Albumin, serum, optical rotation and anion	sulfate, extracts of chick embryo
binding in acid solutions of — 205	cartilage 211
Aldolase, binding to isolated nuclei 129	, degradation by bacterial enzymes . 658
Amines, enzymically catalyzed incorpo-	Chromatium, photophosphorylation by sub-
ration into proteins 451	cellular particles 462
Amino acids, absorption by twin loops of	Chromatography, reversed phase paper
rat intestine	, steroids of cholesterol class 408
, and amines, chemical formation by	, study of incorporation of 32P-ortho-
ionizing radiation	phosphate into phosphatides, rat
, composition of DNase I, changes	liver homogenates 585
induced by X-rays 179	Chymotrypsin, action on N-alkyl deriva-
, incorporation into hen oviduct pro-	tives of phenylalanine ester 182
teins, evidence for intermediate stage	a-Chymotrypsin, inertness of ammonium
in the process 444	salt of N-acetyl-L-cysteic acid carbox-
, lysozyme, C-terminal sequence 210	amide in systems containing 420
, possible role of RNA of pH 5 enzyme	Collagen, cross linking by S- and N-
in activation of ——— 659	mustards 202
, quantitative micro-determination on	Connective tissues, cattle, quantitative
paper	interrelationships of chief components
δ -Aminolevulinic acid, biosynthesis of por-	during foetal and post-natal develop-
phyrin-like moiety of vitamin B_{12} ,	ment 542
mode of utilization of — 661	Cresolase, role during melanin formation
Amylase, intracellular distribution in rat	in a slime mold 440
pancreas	Cystathionine, cleavage and synthesis,
Appendix, rabbit, in vivo incorporation of	wildtype and mutant strains of
32P into DNA	Neurospora crassa 50
Arginylpeptides, effect on clotting of	Cysteinesulphinic acid, decarboxylation by
fibringen with thrombin 437	rat brain, influence of injection of
Aspergillus niger, formic acid oxidation . 148	pyridoxine 634
Azotobacter vinelandii, respiratory granules 336 Bacillus subtilis, influence of growth rate	Cystine, reaction between — in keratin
on absorption spectrum of haematin	and sulphite/bisulphite solutions at
compounds 481	50° C, mechanism 347
Bacteriophage T ₂ , Escherichia coli, dual	Cytidine nucleotides, role in formation of
sedimentation 252	inositol-containing lipid 445
, formation of non-phage-antigenic	Cytidylic acid, 5-hydroxymethyldesoxy
protein in infected Escherichia coli . 665	—, enzymic synthesis 667
-, killing of Escherichia coli B by phage-	Cytochromes a and a_3 , spectrophotometri-
free lysates 437	Cytochrome between from Strattonius
Blastoderm, chick, grown on synthetic	Cytochrome, b-type, from Streptomyces fradiae
medium, synthesis of nucleic acids . 69	Cytochrome c, crystalline, X-ray study 428
Blood pressure, proposed kinetic mecha-	, pathways involved in reduction,
nism for enzymic regulation 475	Mycobacterium phlei 447
Bone marrow, homogenates of normal and	Cytochrome reductase, from microsomes 228
regenerating —, RNase and DNase	Cytosine, origin of in Tetrahymena . 199
activities 579	Cytosine nucleosides and nucleotides,
Carbon dioxide fixation, quantitative as-	photochemistry
pects during protein synthesis from	Desoxyribonuclease, see Nuclease
ammonium acetate 200	Desoxyribonucleic acid, see Nucleic acid
Catalase, induced formation in yeast,	Diaphragm, rat, isolated, regulation of
effects of U.Virradiation 161	glucose uptake
Catechol, intermediates in enzymic oxi-	3:4-Dihydroxytoluene, role during melanin
dation	formation in a slime mold 440
Cellulose, enzymic synthesis by Acetobacter	³² P-Diisopropylphosphofluoridate, labeling
xylinum 436	of human serum by ——— 600
Chloromycetin, metabolic instability of	Diphosphopyridine nucleotide, fluorescence
RNA synthesized by Escherichia coli	spectrophotometry in photosynthe-
in presence of ——	sizing cells
tivity of isolated fragments 453	— , specific α-glycerophosphate dehydro-
Chloroplastin, Euglena, light and heat in	genase in insect flight muscle. 649
bleaching of 267	Electron microscopy, ferritin crystals 263
Chondroitin sulphate, formation from	Electrophoresis, zone —, studies on a
adenosine-3'-phosphate-5'-phospho-	haemosensitin from Mycobacterium tuberculosis
5 F 5 - PHOSPHO	iuoercuiosis

Energy transfer, possibility of long distance by resonance in biology 280	1-13C-D-Glucuronolactone, conversion into 5^{-13} C-L-xylulose in a pentosuric	
Enzyme action, kinetics, terminal phase of reaction 132	human	10
Enzyme model, possible for acid and base catalysis in non-enzymatic	brain, influence of injection of pyrid- oxine	63.
transfer reaction	a-Glycerophosphate dehydrogenase, DPN- specific, occurrence in insect flight	
investigations in living objects i, two-substrate graphical de-	muscle	64
termination of dissociation constants 575 Erythrocyte, human, linkage of sodium,	nucleic acid bases in vivo and in vitro, rat liver.	59
potassium and ammonium active transport across membrane	Glyoxalase I, mechanism of action. Guanidination, of biologically active pro-	
Escherichia coli, dual sedimentation of T ₂ bacteriophage 252	teins Guanine, natural vitamin B_{12} analogue	
 infected with T₂ phage, formation of non-phage-antigenic protein 665 	containing Guanosine nucleotide, new, brewer's yeast	
 B, killing by phage-free T₂ lysates : 437 , metabolic instability of RNA synthe- 	L-Gulonolactone, metabolism in rat via pentose formation	64
sized in presence of chloromycetin . 513 , potential for the formation of a bio-	Haematin, compounds of <i>Bacillus subtilis</i> , influence of growth rate on ab-	
synthetic enzyme 208 , U.Vtreated, synthesis of nucleic	sorption spectrum	48
acids	culosis, studies in zone electrophoresis	40.
chloroplastin	Heart, beef, isolation of a quinone from mitochondria	
- in reconstructed system of soluble enzymes from chicken liver . 303	Heparin degradation by bacterial enzymes Histone, calf thymus, preparation, frac-	-
, mechanism of synthesis, cofactor requirements of soluble pigeon liver	tionation and properties. - , thymus, ethanol precipitation analy-	
system 35 mechanism of synthesis, products of	Homogenizer, for isolation of nuclei in	
enzymic synthesis of — 41 Ferritin, electron microscopy of crystals 263	concentrated glycerine	3.
Fibrils, protoplasm — , mechanism of motion	Hyaluronidase, effect of substrate size	
transfer between AD ³² P and ATP	upon action of	
Fibrinogen, effect of arginylpeptides on	Hydrolytic enzyme model, effect of neigh- bouring carboxyl on reactivity of	276
Folic acid, enzymic cleavage by extracts, preparation and cofactor require-	ester and anilide groups	
ment of enzyme system 623 Formate, ¹⁴ C-labeled, incorporation into	5-Hydroxymethyldesoxycytidylic acid, enzymic synthesis	
nucleic acid bases in vivo and in vitro, rat liver	Inositol, lipid containing , role of cytidine nucleotides in formation .	
Formic acid, oxidation in Aspergillus niger 148 Fructose, randomization of carbon atoms	Intestine, rat, absorption of amino acids by twin loops	
during metabolism, barley seedlings 642 L-Fucose, biosynthesis by Aerobacter aero-	 rat, deacylation of 2-acetamido- fluorene and related compounds 	
genes	a-Keratin, models of structure	65.
uridine pyrophosphogalactose and uridine pyrophosphogalactose-4-epi-	and sulphite/bisulphite solutions at 50°C, mechanism	340
merase	Ketopentose-5-phosphate, instability in buffer solutions of varying pH	21
tionation	Lactic dehydrogenase, heart muscle, reaction with β -mercaptopyruvate	13
during metabolism, barley seedlings 642 - , regulation of uptake in isolated rat	Lipid, containing inositol, role of cytidine nucleotides in formation.	

Liver, chicken, intracellular distribution of	cytoplasm, physical and chemical	
vitamin A and vitamin E 644	studies	532
, chicken, reconstructed system of	Neurospora crassa, metallo-enzymes in re-	33
soluble enzymes for biosynthesis of	duction of nitrite to ammonia	138
long-chain fatty acids 303	, wildtype and mutant strains, cleav-	•
—, purification of monophosphoinositide 424	age and synthesis of cystathionine .	50
, rat, deacylation of 2-acetamido-	Nitrite, metallo-enzymes in reduction to	-
fluorene	ammonia, Neurospora crassa	138
, rat, homogenates, incorporation of	Norepinephrine, 3-methoxy-4-hydroxy-D-	
³² P-orthophosphate into phospha-	mandelic acid as urinary metabolite	
tides, chromatographical studies 585	of —:	422
—, rat, incorporation of ¹⁴ C-formate and	Nuclease, desoxyribo — I, changes in	
2-14C-glycine into nucleic acid bases	amino acid composition and U.V	
in vivo and in vitro 592	absorption induced by X-rays	179
Luminescence, quantum efficiency deter-	, ribo — and desoxyribo —, ac-	
minations on components of bacterial	tivities of normal and regenerating bone marrow homogenates.	£ 70
system	Nuclei, binding of aldolase to isolated —	120
N,O-peptidyl shift 614	— new homogenizer for isolation of —	1-9
—, C-terminal amino acid sequence 210	in concentrated glycerine	32
Melanin, formation in slime mold, role of	Nucleic acid, desoxyribo rabbit	J-
3:4-dihydroxytoluene, sulfhydryl	appendix, in vivo incorporation of	
groups and cresolase 440	32p	195
β-Mercaptopyruvate, reaction with lactic	, incorporation of ¹⁴ C-formate and ² -	
dehydrogenase of heart muscle 135	¹⁴ C-glycine into bases in vivo and	
Metallo-enzymes, in reduction of nitrite to	in vitro, rat liver	592
ammonia, Neurospora crassa 138	—, infectivity of viral —	87
3-Methoxy-4-hydroxy-D-mandelic acid,	, of some TMV strains, structural dif-	
urinary metabolite of norepinephrine 422	ferences	528
Micrococcus denitrificans, terminal oxidases 321	, ribo , bacterial, aspects of in-	
Microsomes, cytochrome reductase from	variability of	549
fractionation of proteins by non-ionic	,, incorporation of adenylic acid	
, fractionation of proteins by non-ionic	from ATP into ——- by soluble mam- malian enzyme systems, mechanism	217
detergent	—, —, inhibition of synthesis by U.V	21/
quinone	irradiation and its chemical resto-	
—, isolated from different tissues, swel-	ration, yeast	646
ling of —— 426	—, —, metabolism in yeast, effects of	- 4 -
, phosphorylating digitonin prepa-	U.Virradiation	161
ration, some cytochemical charac-	,, possible role of of pH 5	
teristics	enzyme in amino acid activation	659
, respiratory control and phosphor-	,, some aspects of relation be-	
ylative activities in magnesium-free	tween nuclear and cytoplasmic ——	656
medium	—, —, synthesized by Escherichia coli	
Monophosphoinositide, from liver, purifi-	in presence of chloromycetin, meta-	
cation 424	bolic instability	513
Muscle, binding of ADP, inorganic phos-	, synthesis by chick blastoderms	
phate and alkaline earth metals to	grown on synthetic medium	69
structural proteins	, synthesis in U.Vtreated Escherichia coli	62
extra-protein 640	, synthesis in yeast, use of metabolic	02
, flight of insect, occurrence of	pools of purine compounds	
DPN-specific a-glycerophosphate de-	Nucleosides, cytosine — –, photochemistry	
hydrogenase 649	Nucleoside triphosphatase, activity of L-	333
—, heart, reaction of β -mercaptopyru-	myosin and actomyosin, dependence	
vate with lactic dehydrogenase 135	on ionic conditions	365
Mycobacterium phlei, pathways involved in		
cytochrome c reduction 447	rescence spectrophotometry in photo-	
Mycobacterium tuberculosis, zone electro-	synthesizing cells	13
phoresis on a haemosensitin, studies 402	-—, diphosphopyridine — -, specific α-	
L-Myosin, nucleoside triphosphatase ac- tivity, dependence on ionic con-	glycerophosphate dehydrogenase in	6.0
ditions	insect flight muscle	049
Myzomyosin an ATP-censitive protein in	-, new guantomic HOIII Drewer's	

Nucleotides, biosynthetic polyribo	, non-phage-antigenic , formation	
induction of streptolysin formation by	in Escherichia coli infected with T ₂ phage	665
, cytidine , role in formation of	, serum, required by a mammalian cell-	
inositol-containing lipid 445	in tissue culture, purification	4.10
, cytosine, photochemistry 355	solubility in presence of carbon di-	• •
Oviduct, hen, incorporation of amino acid	oxide	420
into proteins, evidence for inter-	, structural of muscle, binding of	
mediate stage in the process 444	ADP, inorganic phosphate and alka-	
Oxidases, terminal , Micrococcus deni-	line earth metals to	563
trificans	, study of metabolic state in cells of	.,
Oxidative phosphorylation, and vitamin K ₁ 439	two ascites tumours.	165
, role of vitamin K_1 in coupled 448	- , synthesis from ammonium acetate,	
Pancreas, rat, protein synthesis, intra-	quantitative aspects of carbon di-	
cellular distribution of amylase 56	oxide fixation	200
Pentose, metabolism of L-gulonolactone in	, synthesis in rat pancreas, intracellu-	
rat via formation of 647	lar distribution of amylase	50
Pentosuria, in human, conversion of 1-13C-	Purine, metabolic pools of compounds,	
D-glucuronolactone into 5- ¹³ C-L-	use in nucleic acid synthesis in yeast	291
xylulose 196	Pyridine-2-aldoxime methiodide, reacti-	
Peptides, arginyl , effect on clotting of	vation of phosphorylated aceto-	
fibrinogen with thrombin 437	cholinesterase by	652
Phenylacetylglutamine, participation of	Pyridoxal-5-phosphate isolation from	
phenylacetyladenylate in enzymic	crystalline muscle phosphorylase	I t
synthesis 434	Pyridoxine, injection into rat, influence on	
Phenylalanine, N-alkyl derivatives of ester,	decarboxylation of glutamic and	
action of chymotrypsin	cysteinesulphinic acids by brain	634
Phosphatides, incorporation of ³² P-ortho-	Refractive index gradients, in liquids,	
phosphate, rat liver homogenates,	simple method for observing	428
chromatographical study 585	Ribonucleic acid, see Nucleic acid	
Phosphoglucose isomerase, and borate	Serum, human, labeling by ³² P-di <i>iso</i> propyl-	
in assay of phosphomannose iso-	phosphofluoridate	OOC
merase	Skin, frog, isolated, temperature coeffi-	
Phosphomannose isomerase, borate and	cients of sodium transport system .	311
phosphoglucose isomerase in assay	Sperm antagglutin, isolation from follicle	
of	fluid, some properties	2.2
Phosphorylase, crystalline muscle - ; isolation of pyridoxal-5-phosphate	Spirogira, photosynthetic activity of iso- lated chloroplast fragments	153
from · · · · · · · · · · · · · · · · · · ·	Steroids, of cholesterol class, reversed	433
Photophosphorylation, subcellular parti-	phase paper chromatography and	
cles from Chromatium	detection	108
Photosynthesis, activity of isolated chloro-	Streptolysin, induction of formation by	7
plast fragments, Spirogira 453	biosynthetic polyribonucleotides	663
Photosynthetic phosphorylation, under	Streptomyces fradiae, occurrence of a b-type	
anaerobic conditions 97	cytochrome	227
Protein, ATP-sensitive, occurring in cyto-	Sulfhydryl groups, amperometric titration	
plasm, physical and chemical studies 532		394
, biologically active, guanidination of	- , role during melanin formation in a	
	slime mold.	440
 breakdown induced by exposure to 	Tetrahymena, origin of thymine and cyto-	
X-rays, studies using concept of	sine in	100
dynamic glycine pool	Thrombin, effect of arginylpeptides on	
, containing oxidized thioether groups,		437
formation of disulphides during hy-	Thymine, origin of in Tetrahymena.	199
drolysis	Thymus, calf, preparation, fractionation and properties of histone	10.2
— , enzymically catalyzed incorporation	—, ethanol precipitation analysis of	493
of amines into 451 extra- of cross-striated muscle,	• • •	502
some observations	Thyroxine, in vitro inhibition of acetyl	.,
- , hen oviduct, incorporation of amino	phosphatase	193
acid, evidence for intermediate stage	Tissue culture, embryonic cells, metabolism	
in the process 444	- , purification of serum protein re-	. ,
— , microsomal, fractionation by non-		449
ionic detergent	Tobacco mosaic virus, see Virus	

Tumour, ascites —, study of metabolic	—, changes in amino acid composition
state of proteins in cells 165	and U.Vabsorption of DNase I by
Turnip yellow mosaic virus, see Virus	
Uridine pyrophosphogalactose-4-epimerase,	, diffraction studies of turnip yellow
presence in non-galactose adapted	mosaic virus
yeasts	—, effect on phosphorylations in vivo 487
Virus, infectivity of nucleic acid 87	, study of crystalline cytochrome c 428
—, tobacco mosaic —, structural dif-	5-13C-L-Xylulose, conversion of 1-13C-D-
ferences in nucleic acids of some	glucuronolactone into — in a pen-
strains	tosuric human
, turnip yellow mosaic, X-ray	Yeast, action of U.Virradiation on adap-
diffraction studies	tive enzyme, effect of —— extract
Vitamin A, intracellular distribution in	on restoration of enzymic synthesis . 299
chicken liver 644	-—, brewer's, a new guanosine nucleotide
Vitamin B ₁₂ , biosynthesis of porphyrin-	from 417
like moiety, mode of utilization of	——, freezing in cells
δ-aminolevulinic acid 661	-, induced formation of catalase and
—, natural guanine-containing analogue	metabolism of RNA, effects of U.V
of	irradiation
Vitamin E, intracellular distribution in	, inhibition of enzymic adaptation and
chicken liver 644	RNA synthesis by U.Virradiation
Vitamin K ₁ , and oxidative phosphorylation 439	and their chemical restoration 646
, role in coupled oxidative phosphory-	—, non-galactose adapted, presence of
lation	uridine pyrophosphogalactose and
X-rays, cellular destruction and protein	uridine pyrophosphogalactose and uridine pyrophosphogalactose-4-epi-
breakdown, studies using concept of	
dynamic glycine pool 237	merase
dynamic grycine poor	
	bolic pools of purine compounds 291