

ABSTRACTS SECTION

In this section are given information on methods of synthesising labelled compounds and related problems (analysis, purifying, radiodecomposition, storage). The references cover articles drawn from about 40 secondary periodicals and also from N.S.A. and C.A.

A point is made of singling out each of the above-mentioned aspects in the abstracts, particularly where the greater part of the article deals with applications of labelled compounds. This Journal will likewise contain author and subject indexes for each volume.

The articles are abstracted by M.R.J. Lefort, Chemical Engineer and retrieved by the mechanized documentation system of the Centre of Information and Documentation (CID) of the Commission of the European Communities.

The work on this information project was started in May 1964 and interrupted for reason beyond our control after last issue of 1966.

The gap between 1967 and 1971 will be filled by the publication of a supplement to the Journal containing about 2.500 references collected during the period. There will be an extra-charge for this volume.

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1 - G E N E R A L

73-381

BERGER, J.A., GAILLARD, G.,
PETIT, J.

Labelled molecules of biological and medical interest. Methods of obtaining, purification and control procedures, preservation problems.

Sci. Med. 2 (1971), 1, 23-33C.A. 75 (1971), 115725

The problems encountered in the use of labelled molecules are reviewed.

73-382

GAZZERA, G.

Radioactive isotopes in the diagnosis and therapy of tumors.

G. Batteriol. Virol. Immunol. Ann. Osp. Maria Vittoria, Torino 63 (1970), 1/6, 81-151

Biological Abstr. 53 (1972), 38716

The physiological principles of radioisotopes are reviewed.

73-383

OKABE, K.

Use of radioisotopes for studies on photosynthesis.

Genshiryoku Kogyo 17 (1971), 6, 68-72

C.A. 75 (1971), 59741

2 - S Y N T H E S I S

2.0 - GENERAL

73-384

CHIBA, N.

Role of retinoic acid in the synthesis of rapidly labelled nuclear ribonucleic acid.

Univ. Oklahoma, Norman (1970), 73 pp. Univ. Microfilms Order n° 70-21824

C.A. 75 (1971) 60618

73-385

COLEMAN, M.S.W.

Incorporation of radioactive precursors into polysomes and RNA of mammalian brain during short-term behavioral experiences.

Univ. North Carolina (1969), 208 pp. Univ. Microfilms Order n° 70-12052

C.A. 74 (1971), 109246

73-386

IZRAEL, Yu.A., ROVINSKII, F.Ya.

Use in hydrology of isotopes produced by peaceful underground nuclear explosions.

Isotope Hydrol. Proc. Symp. (1970), 815-20

C.A. 76 (1972), 20532

Experimental data are given on the migration of radioactive isotopes and on the role of these isotopes in the study of the hydrological conditions of the reservoir.

73-387

KORBECKI, M.

Application of methods of molecular biology in investigations of antiviral compounds.

Postepy Mikrobiol. 10 (1971), 1, 91-102

C.A. 75 (1971), 148693

Incorporation of labelled substances is described.

73-388

LOEWUS, F., BAIG, M.A.

Biosynthesis and degradation of isotopically labelled ascorbic acid (plants).

Methods Enzymol. 16 (1970), Pt. A, 22-8

C.A. 74 (1971), 108221

Procedures for labelling plant tissues, preparation of L-ascorbic acid derivatives useful in tracer studies and degradation studies are described.

73-389

OKAZAKI, R.

Demonstration of newly-replicated short DNA chains.

Methods Enzymol. 21 (1971), Pt. D, 295-304

C.A. 75 (1971), 116049

Pulse labelling, labelling of the bulk of DNA, extraction of DNA, alkaline sucrose gradient sedimentation of labelled DNA and preparation of phage SA and its DNA are described.

73-390

SUZUKI, I.

Histochemical labelling of enzyme-induced antibodies.

Isaku No Ayumi 75 (1971), 5, 419-25

C.A. 75 (1971), 115815

Labelling methods of antibodies peroxidase are reviewed.

73-391

THRELFALL, D.R., WHISTANCE, G.R.

Biosynthesis of phylloquinone.

Methods Enzymol. 16 (1971), Pt. C, 559-62

C.A. 75 (1971), 72402

Biosynthesis of phylloquinone using radioactive precursors is reviewed.

73-392

YOKOSHIMA, T.

Preparations of labelled drugs.

Kagaku No Ryoiki Zokan (1971), 95, 13-31

C.A. 75 (1972), 14

The preparation of 24 labelled drugs for metabolism study was reviewed.

2.1 - DEUTERIUM COMPOUNDS

2.1.0 - GENERAL

73-393

BRICOUT, J., MERLIVAT, L.

Deuterium content of orange juice.

C.R. Acad. Sci., Ser. D 273 (1971), 12, 1021-3

C.A. 75 (1972), 12955

The water in orange juice was richer in deuterium than the water absorbed by the orange.

73-394

KOTLYAR, V.Z., LYUBINSKII, M.A.

Unequal ability of leaf tissues to enrich in heavy water (D_2O) under different conditions of plant illumination.

Dopov. Akad. Nauk Ukr. SSR,
Ser. B 32 (1971), 5, 454-7

C.A. 72 (1971), 30027

The distribution of D_2O in
leaf tissues was studied.

2.1.1 - ALIPHATIC COMPOUNDS

73-395

BAEIOR, B.M., JEISBLAT, D.A.

Mechanism of action of ethanol-
amine ammonialyase, a B_{12} -de-
pendent enzyme. VIII. Further
studies with compounds label-
led with isotopes of hydrogen.
Identification and some prop-
erties of the rate-limiting
step.

J. Biol. Chem. 245 (1971), 19,
5034-71

C.A. 72 (1971), 126253

The rates of deamination of
ethanolamine-1-D and -1,1-D₂
showed no secondary isotope
effect.

73-395

JOELPHIN, D., PAINÉ, J.B.

Electrophilic attack at the
porphyrin periphery.

J. Amer. Chem. Soc. 92 (1971),
15, 4000-1

C.A. 72 (1971), 117053

Rates of D incorporation into
the meso positions of various
octaalkylporphyrins were
measured in refluxing deuterio-
acetic acid.

73-397

NIGUN, J.J., KOVACS, G.A.

The π -orbital overlap require-
ment in 1,2-anionic rearrange-
ments.

J. Organometal. Chem. 30 (1971),
3, 307-3100

C.A. 72 (1971), 109640

Treatment of RCH_2Ph ($R = -h_2N$)
with BuLi in THF gave $RCHDPh$
when quenched with D_2O .

73-398

GURATO, G., RIGO, A.

Synthesis and NMR analysis of
2,4-dichloro-1-pentene and of
2,4-dichloro-1-pentene-1-d₁.

Org. Magn. Resonance 2 (1971),
4, 433-49

C.A. 72 (1971), 150974

The deuterated title compound
was prepared starting from
propylene oxide and $HC\equiv CNa$.

73-399

HAJEK, B., BROZEK, V., POPL, M.,
HOŠTECKÝ, J.

Hydrolyzable carbides. VII. De-
composition of some dicarbides
of the type $M^{111}C_2$ and of scan-
dium carbide with deuterium
oxide.

Collect. Czech. Chem. Commun.
35 (1971), 9, 3236-43

C.A. 72 (1971), 151889

According to the purity of the
 D_2O used, either totally or
partially deuterated C_{1-10} hyd-
rocarbons (olefins and acetyl-
enes) are formed by decomposi-
tion of dicarbides.

73-400

HOSTER, D.P., ABBOTT, S.

Preparation and properties of
n-amy1 alcohol-OD. Exchange
experiment.

J. Chem. Educ. 48 (1971), 2,
135

C.A. 74 (1971), 107039

The title compound was obtained
by reaction of amy1 borate with
 D_2O .

73-401

KNOLL, F., KOHNKE, J.,
APPEL, R.Hydrogen-deuterium exchange in
methane- and ethanesulfonobis-
(methylimide)methylamide.Chem. Ber. 104 (1971), 6,
1747-51C.A. 75 (1971), 75649

73-402

LETT, R., BORY, S., MOREAU,
B., MARQUET, A.Stereochemistry of the α hydro-
gen-deuterium exchange of a
sulfoxide.Tetrahedron Lett. (1971), 35,
3255-8C.A. 75 (1971), 109730

73-403

PARNES, Z.N., KHOTIMSKAYA,
G.A., LYAKHOVETSKII, Yu.I.,
PETROVSKII, P.V.Synthesis of branched deu-
terium-labelled hydrocarbons
containing deuterium at the
tertiary carbon atom.Izv. Akad. Nauk SSSR, Ser.
Khim. (1971), 7, 1562-3C.A. 75 (1971), 109902Me₂CDEt, Me₂CDCH₂Et and ana-
logs were prepared by reaction
of olefin with Et₃SiD followed
by CF₃CO₂H and isolated on a
preparative gas-liquid chroma-
tograph.

73-404

SAFE, S., PENNEY, C.

Preparation of cis and trans-
3-alkenoic acids.J. Label Compounds 7 (1971),
3, 341-3The title compounds were pre-
pared by photoisomerization
of the corresponding ROH₂OH:CHCO₂H which were prepared from
n-anhydrides by the Doebner re-
action or by bromination and de-
hydrobromination of a saturated
precursor.

2.1.2. - AROMATIC COMPOUNDS

73-405

ANASTASSIOU, A.G., YAKALI, E.

Photochemical behaviour of the
stereoisomeric 9-chloro-cis-
bicyclo(5.1.0)nona-2,4,6-
trienes. Synthesis of 9-chloro-
cis,cis,cis,cis-1,3,5,7-cyclo-
nonatetraene.J. Amer. Chem. Soc. 93 (1971),
15, 3803-5C.A. 75 (1971), 109922The deuterated title compounds
were prepared.

73-406

BERGMAN, N.A.

Isotope effects in proton-trans-
fer reactions. III. Determination
of the equilibrium constant for
the hydrogen deuterium exchange
between 2-methyl-3-phenylpropio-
nitrile and methanol.Acta Chem. Scand. 25 (1971), 4,
1517-9C.A. 75 (1971), 117804A very weak kinetic isotope ef-
fect was observed in the title
exchange.

73-407

BIERNBAUM, M.S., MOSHER, H.S.

Stereochemistry of the silylcar-
binol to silyl ether rearrange-
ment.J. Amer. Chem. Soc. 93 (1971),
23, 5221-3C.A. 75 (1972), 13545

(+)-Benzyl- α -d-triphenylsilyl ether was obtained by exchange between (R)(+)-phenyltriphenylsilylcarbinol and D₂O.

73-408

BROCKWAY, H.M.

Reactions of carbethoxycarbene with carbon-halogen bonds. Polar addition of deuterium bromide to bicyclo(2.2.2)-octene.

Univ. Oklahoma (1970), 148 pp.
Univ. Microfilms Order No. 70.23965

C.A. 75 (1971), 75694

73-409

CAMPBELL, J.R., HALL, L.D.

Novel conformation preference of the 2-oxo-1,3-dioxo- and 2-oxo-1,3-dithia-2-phosphorinane systems.

Chem. Ind. (London) (1971), 40, 1158

C.A. 76 (1972), 3305

Deuterated cis- and trans-2-phenoxy-5-phenyl-1,3,2-dioxaphosphizane and the corresponding 1,3-dithia compounds were prepared.

73-410

GUMMADZHYAN, G.A., EVOYAN, Z.K.

Ethynyl hydride complexes of nickel.

Arn. Khim. Zh. 24 (1971), 5, 530-1

C.A. 75 (1971), 113393

The preparation of (PPh₃)₂Ni-(C₆Ph)₂ is described.

73-411

GARRETT, J.L., KENTON, R.S.

Homogeneous platinum(II)-catalyzed hydrogen exchange in

the alkylbenzenes. Relation to simple alkane exchange.

J. Chem. Soc. D (1971), 19, 1227-8

C.A. 75 (1971), 151148

The side chain of longchain alkylbenzenes was deuterated at the α - and terminal C using homogeneous platinum(II) catalyst.

73-412

HASLAM, E., IFE, R.

Shikimate path. II. Stereochemical course of the L-phenylalanine ammonia-lyase reaction.

J. Chem. Soc. C (1971), 16, 2618-21

C.A. 75 (1971), 147995

(3R)-3-deuterio-L-phenylalanine gave labelled L-phenylalanine by the title reaction.

73-413

HORREX, C., NOYES, R.B., SQUIRE, R.S.

Reaction of toluene with deuterium on coated and noncoated metallic catalysts as reactivity index on aromatic hydrocarbons on metals.

Osn. Predvideniya Katal. Deistviya, Tr. Mezhdunar. Kongr. Katal., 4th (1968), 1, 277-83

C.A. 75 (1971), 75911

73-414

PARSHALL, G.W., TEBBE, F.N.

Hydride derivatives of niobocene and tantalocene.

J. Amer. Chem. Soc. 93 (1971), 15, 3793-5

C.A. 75 (1971), 118382

The H-D exchange between D₂ and C₆H₆ was catalyzed by (C₅H₅)₂NbH₃ or (C₅H₅)₂TaH₃.

73-415

RODEHEAVER, G.T., FARRANT, G.C.,
HUNT, D.F.

Heptafulvenetricarbonyliron.

J. Organometal. Chem. 30 (1971),
1, C22-C24C.A. 75 (1971), 76989The deuterated title compound
was prepared by reduction of
the aldehyde with NaBD₄.

73-416

VAN VEEN, R., BICKELHAUPT, F.

9-Mesityl-9-boraanthracene
anion.J. Organometal. Chem. 30 (1971),
2, C51-C53C.A. 75 (1971), 76884The title anion reacted with
D₂O to give the 9-mesityl de-
rivative 10-d, and with CO₂ to
give the 10-carboxylic acid.

73-417

WELTON, B.D.

Conformational preference and
spatial 1,3-diaxial interactions
of nonprotonated and protonated
alkylated amino groups studied
from deuterated six-membered
ring compounds; stereochemistry
and synthetic approaches to some
7-aza-quasi-steroids.Univ. Washington (1969), 173 pp.
Univ. Microfilms Order N° 70-
14.793

2.1.3 - HETEROCYCLIC COMPOUNDS

73-418

KONOWAL, A., ZAMOJSKI, A.

Derivatives of 2-alkoxy-5,6-
dihydro- α -pyran as substrates
in the synthesis of monosaccha-
rides. VI. Synthesis of four
diastereomeric methyl 4-deoxy-
DL-hexopyranosides.Rocz. Chem. 45 (1971), 5,
859-67C.A. 75 (1971), 110548The synthesis of the deuterat-
ed title compounds is des-
cribed.

73-419

MAEDA, M., SANAYOSHI, M.,
KAWAZOE, Y.Hydrogen exchange. XII. Re-
action mechanism for hydrogen
exchange of the C-8 hydrogen
of ribofuranosylpurines.Chem. Pharm. Bull. 19 (1971),
8, 1641-9C.A. 75 (1971), 118519The reaction mechanism was
discussed on the basis of the
pD rate profiles and the ef-
fect of 6-substituents on
the rate.

73-420

SCHWETLICK, K., UNVERFERTH, K.

Kinetics of acid-catalyzed
hydrogen isotope exchange in
the thiophene, furan, seleno-
phene, and pyrrole as well as
furan hydrolysis.Wiss. Z. Tech. Hochsch. Chem.
"Carl Schorlemmer", Leuna-
Merseburg 12 (1970), 3/4, 230C.A. 74 (1971), 124421H-D exchange in selectively 2-
and 3-deuterated heterocycles
was studied.

2.1.4 - CARBOHYDRATES

73-421

HORTON, D., DURETTE, P.L.

Conformational studies on py-
ranoid sugar derivatives. Con-
formational equilibriums of the
D-aldopentopyranose tetraace-
tates and tetrabenzoates.

J. Org. Chem. 36 (1971), 18, 2658-69

C.A. 75 (1971), 110533

Analogs of α -D-ribo, α -D-arabino, β -D-xylor and α -D-lyxor configurations specifically deuterated in the 1-acetoxy group were synthesized.

2.1.5 - PEPTIDES, AMINO ACIDS, PROTEINS

73-422

DUBNAU, D.

Genetic mapping of *Bacillus subtilis*.

Methods Enzymol. 21 (1971), Pt. D, 430-8

C.A. 75 (1971), 116058

The method involves the germination of unlabelled spores in a medium containing deuterium.

2.1.6 - STEROIDS

73-423

BJORKKILJA, I., ERIKSSON, H., GUSTAFSSON, J.A.

Microbial formation of 17 α -C₂₁ steroids. Stereochemistry of saturation of the Δ^{16} -double bond.

Eur. J. Biochem. 20 (1971), 3, 340-3

C.A. 75 (1971), 50217

After anaerobic incubation in 50% of 3 β -hydroxy-5,15-pregnadien-20-one with cecal contents from rats, 3 β -hydroxy-17 α -pregn-5-en-20-one with D label in ring D was isolated.

2.1.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

2.2 - TRITIUM COMPOUNDS

2.2.0 - GENERAL

73-424

GENUNCHE, A., CRISTU, D., COSTEA, T., MANTESCU, C.

Tritiation of organic compounds by irradiation and other non-synthetic methods. II. Isotopic exchange of benzene toluene, maleic and fumaric ethyl esters on doped and irradiated lithium fluoride and potassium chloride.

Inst. Fiz. At. (Rom.) (1971), C.O. 26, 22 pp.

C.A. 75 (1971), 7070

2.2.1 - ALIPHATIC COMPOUNDS

73-425

BOWERS, M.T., KEMPER, P.R.

Analysis of the mechanism of reaction of H₃⁺ with ethylene oxide and acetaldehyde.

J. Amer. Chem. Soc. 93 (1971), 21, 5352-8

C.A. 75 (1971), 151037

73-426

OWEN, J.S., SCOTT, G.H., HARVEY, M.S., BILLIMORIA, J.D.

Synthesis of di- and triradioisotopically labelled 1,2-dipalmitoyl-sn-glycerol 3-(2-aminoethyl hydrogen phosphate).

Chem. Ind. (London), (1971), 26, 727-8

C.A. 75 (1971), 76070

The title compound was labelled with ³H, ¹⁴C and ³²P.

73-427

WEXLER, S., BEATTY, J.W.

Hydrogen displacement in n-butane by fast T₂ and T₂⁺ collisions.

J. Phys. Chem. 75 (1971), 16, 2417-26

C.A. 75 (1971), 91392

Tritiated n-butane was obtained from collisions of beams of fast T₂ molecules and of T₂⁺ ions with a crossed sheath of n-butane molecules.

2.2.2 - AROMATIC COMPOUNDS

73-428

DEN HOLLANDER, W., VAN DER JAGT, P.J., VAN ZANTEN, B.

Specific tritium labelling of naphthalene and 1,2,3,4-tetrahydronaphthalene. Comparison of the hydrogenolysis of phenyl-tetrazolyl ethers and halo compounds with different palladium catalysts.

Recl. Trav. Chim. Pays-Bas 90 (1971), 11, 1214-24

C.A. 76 (1972), 3241

73-429

LEITZ, F.H., STEFANO, F.J.E.

Effect of tyramine, amphetamine, and metaraminol on the metabolic disposition of ³H-norepinephrine released from the adrenergic neuron.

J. Pharmacol. Exp. Ther. 178 (1971), 3, 464-73

C.A. 75 (1971), 128243

It was shown that tyramine increases the outflow of ³H-labelled norepinephrine from the perfused rat hearts.

73-430

NIXON, P.F., BERTINO, J.R.

Enzymic preparations of radio-labelled (+)-L-5-methyltetrahydrofolate and (+)-L-5-formyltetrahydrofolate.

Anal. Biochem. 42 (1971), 1, 162-72

C.A. 75 (1971), 58966

The preparations of the title compound are described.

73-431

SELANDER, H., NILSSON, J.L.G.

Directing effect of annulated rings in aromatic systems. VII. Tritium exchange in specifically labelled xylenols, indanols, and tetrahydronaphthols and their methyl ethers.

Acta Chem. Scand. 25 (1971), 4, 1182-4

C.A. 75 (1971), 109678

The detritiation of specifically labelled 3,4-dimethylphenol, 5-indanol, 6-tetralol and their Me ethers in anhydrous trifluoroacetic acid was studied.

2.2.3 - HETEROCYCLIC COMPOUNDS

73-432

GLEASON, F.K., HOGENKAMP, H.P.C.

Preparation of 5'-deoxyadenosyl-cabalamine-5'-³H₂.

Methods Enzymol. 18 (1971), Pt. C, 65-71

C.A. 75 (1971), 77204

The preparation of the title compound is described.

73-433

KAMAL, A., HAIDER, Y., AKHTAR, R., QURESHI, A.A.

Biocemistry of microorganisms. XXI. Biogenesis of yasimin and nornidulin, metabolic products of *Aspergillus unguis*.

Pak. J. Sci. Ind. Res. 14 (1971), 1/2, 79-83

C.A. 75 (1971), 115046

The incorporation of DL-mevalonic acid-2-¹⁴C or L-methionine-³H into yasimin and nornidulin was studied.

73-434

KARLIN, A., PRIVES, J.,
DEAL, W., WINNIK, M.Affinity labelling of the acetyl-
choline receptor in the electro-
plax.J. Mol. Biol. 61 (1971), 1,
175-88C.A. 76 (1972), 12176The title compound is affinity
labelled in situ in a 2-step
process consisting of reduc-
tion by dithiothreitol fol-
lowed by alkylation with tri-
tiated 4-(N-maleimido)benzyl-
trimethylammonium iodide.

73-435

POPOV, N., SCHULZECK, S.,
SCHMIDT, S., POHLE, W.,
MATTHIES, H.Incorporation of ^3H -orotic acid
into RNA from different rat
brain regions.Acta Biol. Med. Ger. 26
(1971), 3, 469-74C.A. 75 (1971), 127535Autoradiography revealed label-
led glial cells and neurons in
various brain regions.

73-436

WERNER, G., VON DER HEYDE, O.
Preparation of morphine-N- O^3 .J. Label. Compounds 7 (1971),
3, 233-4The title compound was prepared
by reductive methylation of nor-
morphine with paraformaldehyde-
 ^3H and HCO_2H .2.2.5 - PEPTIDES, AMINO ACIDS,
PROTEINS

73-437

BOEVRE, K., SZYBALSKI, W.

Multistep DNA-RNA hybridization

techniques.

Methods Enzymol. 21 (1971),
Pt. D, 350-83C.A. 75 (1971), 126804Labelling and isolation of RNA-
 ^3H were described.

73-438

BURGER, M., KNYSZYNSKI, A.

Effect of adenosine 3'5'-mono-
phosphate on ^3H -thymidine in-
corporation in vitro into
mouse spleen and thymic cells.Hoppe-Seyler's Z. Physiol.
Chem. 352 (1971), 7, 1019-24C.A. 75 (1971), 108346The incorporation of ^3H -thymi-
dine into mouse spleen and
thymic cells was studied.

73-439

BURSTEIN, S., ZAMOSCIANYK, H.,
CO, N., ADELSON M., PRASAD,
D.S.M., GREENBERG, A., GUT, M.Side-chain cleavage of chole-
sterol to C_6 and C_8 compounds
by adrenal and testis tissue
preparations.Biochim. Biophys. Acta 231
(1971), 1, 223-32C.A. 74 (1971), 107344The conversion of cholesterol-
25,26- ^3H to isocaproaldehyde,
isohexanol, etc. was studied
using gas-liquid chromato-
graph.

73-440

CRAIG, L.C., GALARDY, R.E.,
PRINTZ, M.P.Tritium-hydrogen exchange of
bacitracin A. Evidence for an
intermolecular hydrogen bond.Biochemistry 10 (1971), 13,
2429-36C.A. 75 (1971), 58747

The eleven peptide hydrogens exchange as at least three distinct kinetic classes.

73-441

CROMBIE, L., DEWICK, P.M., WHITING, D.A.

Biosynthesis of the rotenoid amorphigenin in germinating *Amorpha fruticosa* seeds. Pre-rotenoid (isoflavonoid) stages.

J. Chem. Soc. D (1971), 19, 1183-5

C.A. 75 (1971), 148558

Labelled 7-hydroxy-2',4',5'-trimethoxyisoflavone was incorporated into amorphigenin.

73-442

DAS, N.K., MICOU-EASTWOOD, J., RAMANURTHY, G., ALFERT, M.

Sites of synthesis and processing of ribosomal RNA precursors within the nucleolus of *Urechis caupo* eggs.

Proc. Nat. Acad. Sci. U.S. 67 (1970), 2, 968-75

C.A. 74 (1971), 10777

Nucleoli labelled with tritiated RNA precursors have been isolated for simultaneous autoradiographic localization and biochemical analysis of labelled RNA.

73-443

DONOSO, A., ZAPATA, P., ALVAREZ, J.

Incorporation of tritiated choline by the carotid body incubated in vitro.

Arch. Biol. Med. Exp. 7 (1970), 1-2-3, 1-7

C.A. 75 (1971), 107015

³H-labelled choline chloride was incorporated into phospholipids by isolated cat carotid bodies.

73-444

FRANKFURT, O.S.

Kinetics of cellular populations during carcinogenesis (autoradiographic study).

Aktual. Vop. Sovrem. Onkol. (1970), 2, 86-99

C.A. 75 (1971), 116656

Use of thymidine-³H in studies of kinetics of cancer cell growth is reviewed.

73-445

HAREL, J., LACOUR, F., HUYNH, T.

Heavy nuclear satellite rapidly labelling chick deoxyribonucleic acid (DNA).

C.R. Acad. Sci. Ser. D 272 (1971), 20, 2608-11

C.A. 75 (1971), 58573

A rapidly labelled satellite DNA was obtained during the growth phase of thymidine-²H-labelled chick fibroblasts in vitro.

73-446

HAUSHAN, R.E., BURNETT, A.L.

Mesoglea of Hydra. IV. Qualitative radioautographic study of the protein component.

J. Exp. Zool. 177 (1971), 4, 435-45

Radioproline was incorporated by direct incubation in hot Hydra culture media and by feeding; Hydra labelled *Artemia napulii*.

73-447

HUANG, C.C.

Asynchronous DNA synthesis in the mycetocytes and in the spermatocytes of the mealworm, *Pseudococcus obscurus*: study with tritiated thymidine autoradiography.

Univ. Rochester (1970), 103 pp.
Univ. Microfilms Order No. 71-1395

73-448

JUDAH, J.D., NICHOLLS, M.R.

Biosynthesis of rat serum albumin.

Biochem. J. 125 (1971), 4, 549-55

C.A. 72 (1971), 73529

The labelling of intracellular and extracellular serum albumin was studied by using new methods for the purification of the protein.

73-449

KAWAGISHI, S.

The binding of tritium-labelled cardiac glycosides by sarcoplasmic reticulum and by cell membrane isolated from cat heart.

Folia Pharmacol. Jap. 67 (1971), 3, 252-64

Biological Abstr. 52 (1972), 27481

73-450

KRAHN, P.M., PARANCHYCH, W.

Heterogeneous distribution of A protein in R17 phage preparations.

Virology 42 (1971), 2, 533-5

C.A. 74 (1971), 108390

Two phage R17 preparations, one labelled with ^{14}C -labelled amino acids in the coat protein and another labelled in the A protein with histidine- ^3H were prepared and purified.

73-451

LETHAM, D.S.

The synthesis of radioisotopically labelled zeatin.

Phytochemistry 10 (1971), 9, 2077-81

Biological Abstr. 52 (1972), 22260

The synthesis of ^{14}C - and ^3H -labelled 6-(4-hydroxy-3-methyl-but-trans-2-enylamino)purine is described.

73-452

MEUNIER, J.C., OLSEN, R., MENEZ, A., MORGAT, J.L., FROMAGEOT, P., RONSERAY, A.M., BOQUET, P., CHANGEUX, J.P.

Physical properties of the receptor protein for acetylcholine; studies with a radioactive neurotoxin.

C.R. Acad. Sci. Ser. D 273 (1971), 5, 595-8

C.A. 76 (1972), 955

A tritiated cholinergic receptor-toxin complex was prepared from Naja nigricollis.

73-453

HILLIGAN, B., HOLT, L.A., RIVETT, D.E.

Tritiation of tryptophyl residues in proteins.

Biochemistry 10 (1971), 19, 3559-64

C.A. 75 (1972), 940

Tritiated tryptophyl residues were obtained by treatment of carboxymethyl-lysozyme, myoglobin and wool keratin with tritiated trifluoroacetic acid.

73-454

MURAWSKI, D., LINDIG, C., ZELCK, U., REPKE, K.

Catalytic tritiation of cardiac glycosides.

Isotopenpraxis 2 (1971), 7, 282-6

C.A. 75 (1971), 126494

The reaction of tritium gas with solutions of cardioactive unsaturated steroid lactones in the presence of catalysts gave

a mixture of tritiated cardenolides and cardanolides.

73-455

OGURA, H., ODA, T.

Studies on tritiated thymidine incorporation into DNA molecules by electron microscopic autoradiography.

Acta Med. Okayama 25 (1971), 1, 37-41

C.A. 75 (1971), 149896

The title incorporation was confirmed by the liquid scintillation counting of Cl_2COO_2H -soluble and -insoluble fractions after treatment of the DNA preparations with DNase or RNase.

73-456

OISHI, M.

Secondary structure of intermediates of DNA replication.

Methods Enzymol. 21 (1971), Pt. D, 304-11

C.A. 75 (1971), 126497

Escherichia coli was pulse-labelled by addition of the cell suspension to a buffer solution containing thymidine-(methyl- 3H).

73-457

PAWLOWSKI, R.

Surface-active component of dog lung; isolation by density gradient centrifugation and a study of its secretion using a lung lavage and 3H -palmitic acid incorporation.

Case West. Reserve Univ. (1970), 104 pp. Univ. Microfilms Order No. 71-1734

C.A. 75 (1971), 127488

73-458

PRESCOTT, D.M., BOSTOCK, C., GANOW, E., LAUTH, M.

Characterization of rapidly labelled RNA in *tetrahymena pyriformis*.

Exp. Cell Res. 67 (1971), 1, 124-8

C.A. 75 (1971), 72767

The rapidly labelled RNA was pre-rRNA of 34 S and heterodisperse RNA of 4 to 30 S.

73-459

SCORNIK, J.C., MACARIO, A.J.L.

Tritiated uridine uptake by histiomonocytic cells in murine lymphoid tissues.

Acta Physiol. Lat. Amer. 21 (1971), 1, 95-100

C.A. 76 (1972), 591

The histiomonocytic cells incorporated about 50% of the total radioactivity in the spleen and 33% in the mesenteric lymph node.

73-460

SMOLENSKAYA, I.N., KUTEPOVA, G.N.

Comparison of 3H -uridine and 3H -cytidine as RNA precursors in radioautographic studies.

Tsitologiya 13 (1971), 8, 965-76

C.A. 76 (1972), 923

73-461

TAKAI, K., KURASHINA, Y., SUZUKI, C., OKAMOTO, H., UEKI, A., HAYAISHI, O.

Reversibility of the adenylate cyclase reaction.

J. Biol. Chem. 246 (1971), 18, 5843-5

C.A. 76 (1972), 22329

The stoichiometric formation of doubly labelled ATP from 3H -labelled cyclic adenosine 3',5'-monophosphate and ^{32}P -labelled pyrophosphate was demonstrated.

73-462

TOROK, J., BEVAN, J.A.

Entry of ^3H -norepinephrine into the arterial wall.J. Pharmacol. Exp. Ther. 177 (1971), 3, 613-20C.A. 75 (1971), 59185The rate of entry and accumulation of norepinephrine in the rabbit aorta was studied by measuring the ^3H concentration after exposure to ^3H -norepinephrine.

73-463

WEGNEZ, M., DENIS, H.

Amplification of 5 S RNA and transfer RNA organizer cistrons in small *Xenopus laevis* oocytes.Arch. Int. Physiol. Biochim. 79 (1971), 1, 215-7C.A. 75 (1971), 127214Various forms of RNA highly labelled with uridine- ^3H were prepared from *Xenopus* kidney cell cultures by Sephadex G-100 and methylated serum albumin columns.

73-464

WILSON, P.A., HENRIKSON, R.C., DOWNES, A.M.

Incorporation of Me- ^3H methionine into wool follicle proteins. Biochemical and ultrastructural study.J. Cell Sci. 8 (1971), 2, 489-512C.A. 75 (1971), 72314

The title incorporation was studied biochemically and by autoradiography.

73-465

WILT, F.H., EKENBERG, E.

Isolation of chromatin bearing

nascent RNA from nuclei of sea urchin embryos.

Biochem. Biophys. Res. Commun. 44 (1971), 4, 831-6C.A. 75 (1971), 116160Sea urchin embryos were labelled with thymidine- ^{14}C and uridine- ^3H .

73-466

WOODWARD, C.K., ROSENBERG, A.

Hydrogen exchange in proteins. V. Correlation of ribonuclease exchange kinetics with the temperature-induced transition.

J. Biol. Chem. 246 (1971), 13, 4103-11C.A. 75 (1971), 105519

Two classes of exchanging sites in tritiated RNase can be identified and isolated by their temperature dependence.

2.2.6 - STEROIDS

73-467

CHU, T.M., SLAUNWHITE, W.R.Jr.

Formation in vitro of androst-5-ene- $3\beta,16\alpha,17\beta$ -triol from dehydroepiandrosterone by rat liver.Horm. Metab. Res. 3 (1971), 4, 293-4C.A. 75 (1971), 116428The tritiated title compound was prepared and purified by counter-current distribution in BuOH-EtOAc-cyclohexane-0,2% NH_4OH followed by paper and TLC chromatography.

73-468

FONTAINE, Y.

Biosynthesis and purification of tritiated thyrotropic hormone from the rat. Distribution in the rat after intravenous injection.

J. Physiol. (Paris) 62 (1970),
6, 489-504

C.A. 76 (1972), 10446

73-469

HALLICK, R.B., DE LUCA, H.F.

25-Hydroxydihydrotachysterol β .
Biosynthesis in vivo and in
vitro.

J. Biol. Chem. 246 (1971),
18, 5733-8

Biological Abstr. 53 (1972),
26602

1,2- ^3H -dihydrotachysterol β
was chemically synthesized
from (1,2- ^3H)5-cholestene- 3β -
yl benzoate.

2.2.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

2.3 - CARBON-14 COMPOUNDS

2.3.0 - GENERAL

73-470

BANFI, D., MLINKO, S.,
PALAGYI, T.

New synthesis for the prepara-
tion of carbon-14 labelled al-
kali cyanides.

J. Label. Compounds 7 (1971),
3, 221-3

The C content of $\text{Ba}^{14}\text{CO}_3$ used
as starting material can be
quantitatively transformed in-
to KCN in this simple process.

2.3.1 - ALIPHATIC COMPOUNDS

73-471

BOBERG, F., KHALAF, H., KIRCH-
HOFF, K.

Labelled compounds. IX. Me-
chanism of the conversion of
hexachloropropene to tri-
chloroacrylic acid esters,

^{14}C -labelled chloro- C_3 com-
pounds.

J. Label. Compounds 7 (1971), 3,
247-53

^{14}C -labelled chloro- C_2 and
chloro- C_3 compounds were pre-
pared.

73-472

BOBERG, F., KHALAF, H.

Labelled compounds. X. Mechan-
ism of the conversion of hexa-
chloropropene to trichloro-
acrylic acid.

J. Lab. Compounds 7 (1971), 3,
255-9

^{14}C - and ^{36}Cl -labelled chloro-
 C_2 - and chloro- C_3 compounds
were prepared.

73-473

BURTON, W.B.

Synthesis of 2,2-dichlorovinyl
dimethyl phosphate labelled
with ^{14}C , ^{36}Cl and ^{32}P .

J. Agr. Food Chem. 19 (1971),
5, 869-71

C.A. 75 (1971), 117931

The title compounds were syn-
thesized and purified.

73-474

DIMITRIADES, B.

Use of carbon-14 in studying
pollution of the air by petro-
leum hydrocarbons.

Isotop. Radiat. Technol. 9
(1971), 1, 63-4

C.A. 76 (1972), 17444

The reactions of ethylene- ^{14}C ,
1-butene-1- ^{14}C and isobutylene
-1- ^{14}C with HCHO , CO and CO_2
were studied.

73-475

GARDNER, I.J., COZEWITH, C.,
VERSTRAETE, G.Infrared determination of com-
position of ethylene-propylene
copolymers.Rubber Chem. Technol. 44 (1971),
4, 1015-24C.A. 76 (1972), 15545¹⁴C-labelled ethylene-propylene
copolymers were prepared in the
presence of 2 catalyst systems.

73-476

MEDVED, T.Ya., RUDOMINO, M.V.

Ethylenediaminobis(isopropyl-
phosphoric) acid labelled with
¹⁴C.Metody Poluch. Khim. Reaktivov
Prep. (1969), 18, 324-7C.A. 75 (1971), 76939The preparation of the title
compound is described.

See also:

73-426 Synthesis of di- and tri-
radioisotopically labelled 1,2-
dipalmitoyl-sn-glycerol 3-(2-
aminoethyl hydrogen phosphate).

2.3.2 - AROMATIC COMPOUNDS

73-477

BARSON, C.A., HENBEST, R.G.C.,
ROBB, J.C.Styrene dibromide-2-¹⁴C as a
photoinitiator in the poly-
merization of styrene.Trans. Faraday Soc. 67 (1971),
8, 2365-71C.A. 75 (1971), 141232Labelled styrene was formed dur-
ing the polymerization by an ex-
change reaction involving the
transfer of Br from a labelled
bromostyryl radical to un-

labelled monomer.

73-478

BATALOV, A.P., KYASOV, A.A.,
ROSTOKIN, G.A., KORSHUNOV, I.A.Exchange of radicals in organo-
metallic compounds. XIV. Kinetics
of the exchange of radicals be-
tween substituted phenyllithium
and bromobenzene-¹⁴C in diethyl
ether.Tr. Khim. Khim. Tekhnol. (1970),
1, 40-3C.A. 75 (1971), 75898

73-479

DUGANOVA, V.V., POLUBENTSEVA,
M.F., LIPOVICH, V.G.Isomerization of alkylbenzenes.
Mechanism of the alkylation of
benzene by acyclic alcohols in
the presence of sulfuric acid.Izv. Nauch.-Issled. Inst. Nefte-
Uglekhim. Sin. Irkutsk. Univ.
(1970), 12, 11-14C.A. 75 (1971), 117800The mechanism of the title al-
kylation was studied with ¹⁴C-
labelled acyclic alcohols.

73-480

EVRARD, M., CLAUDOT, A., PETIT,
F., DEGNY, E., BLANCHARD, M.Catalytic dehydration of 2-
(hydroxymethyl)bicyclo(2.2.1)-
heptane.Bull. Soc. Chim. Fr. (1971),
7, 2725-30The title compound labelled
in the hydroxymethyl group with
¹⁴C was prepared.

73-481

EVRARD-HEUDE, M., PETIT, F.,
BLANCHARD, M.Catalytic isomerization of nor-
camphene in the vapor phase on
an acid catalyst.

Bull. Soc. Chim. Fr. (1971), 7, 2545-51

C.A. 75 (1971), 118414

The title isomerization was studied with norcamphene labelled at the exocyclic carbon.

73-482

HARRIS, T.M., HARRIS, C.M.

Synthesis of 5-oxohexenoic acid.

J. Org. Chem. 36 (1971), 15, 2181-2

C.A. 75 (1971), 76093

The 5-oxo-2-hexenoic acid labelled with ^{14}C was prepared.

73-483

LIPOVICH, V.G., SAKHABUTDINOV, A.G., KALECHITS, I.V.

Mechanism of the expansion of the ring of 1,2-benzo-1-cycloalken-3-ylmethyl tosylates in solvolysis reactions.

Zh. Org. Khim. 7 (1971), 6, 1177-82

C.A. 75 (1971), 117821

The preparation of ^{14}C -labelled exocyclic CH_2OEt groups of the title compounds is described.

73-484

MARTON, A.F., DUTKA, F.

Kinetics of acyl group exchange.

Radiochem. Radioanal. Lett. 8 (1971), 2, 129-35

C.A. 76 (1972), 18364

The acyl exchange between substituted phenyl acetates and carbonyl- ^{14}C labelled acetic anhydride in pyridine was studied.

73-485

MERRILL, E.J.

Synthesis of ^{14}C -labelled butanol.

J. Pharm. Sci. 60 (1971), 10, 1589-91

Biological Abstr. 53 (1972), 27567

The preparation of the title compound labelled in the ring is described.

73-486

PALMER, B.W.

Carbon-14 kinetic isotope effect study of the mechanism of the oxidation of substituted acetophenones with *m*-chloroperbenzoic acid.

Univ. Arkansas (1970), 115 pp. Univ. Microfilms Order N° 70-17181

C.A. 75 (1971), 151096

73-487

PEARSON, N.

Carbon-14 kinetic isotope effect study of nucleophilic substitution reactions of *p*-substituted benzyl chlorides.

Univ. Arkansas (1970), 145 pp. Univ. Microfilms Order N° 70-26219

C.A. 75 (1971), 75864

73-488

SHEVLYAKOVA, L.I., LIPOVICH, V.G.

Isomerization of 1,2-dimethylcyclohexane over aluminum halides.

Izv. Nach.-Issled. Inst. Nefte-Uglekhim, Sin. Irkutsk. Univ. (1970), 12, 15-18

C.A. 75 (1971), 117801

The title isomerization was studied by using 7- ^{14}C -1,2-dimethylcyclohexane.

73-489

SUNDBECK, B., ABRAMO, A.L., BJORKLUND, R., BORRETZEN, B., OLSSON, K.G.

Organometallic derivatives of halophenols.

Fr. 2,030,939

C.A. 75 (1971), 110414

The preparation of p-HOC₆H₄¹⁴C-O₂H is described in this patent.

2.3.3 - HETEROCYCLIC COMPOUNDS

73-490

FELDMAN, I.Kh., ZLOBINA, V.I.,
VAZHEVA, N.S., ISMERLI, L.G.

Sarcolysin-3-¹⁴C.

Mechenyte Biol. Aktiv. Veshchestva (1971), 3, 22-44

C.A. 75 (1971), 118559

Sarcolysin-3-¹⁴C was prepared by a known method based on Ba¹⁴CO₃.

73-491

KARPOV, V.L., ROMANOVA, L.G.

Use of methionine-labelled methyl group as a source of ¹⁴C and ³H for preparative production of labelled olivomycin by biosynthesis.

Antibiotika 16 (1971), 3, 229-32

Biological Abstr. 53 (1972), 25149

It was shown that the best precursor for preparative production of ¹⁴C-olivomycin is L-methionine.

73-492

PINKHAS, J., CHIVOT, J.J.,
MICHEL, H., CAEN, J.

Autoradiochromatographic studies on adenosine deaminase activity in human plasma. II. Normal range, effect of various chemical compounds, storage, and temperature.

Rev. Eur. Etud. Clin. Biol. 15 (1970), 9, 984-8

C.A. 74 (1971), 109192

The formation of inosine from ¹⁴C-labelled adenosine by the human plasma was studied.

73-493

STOFFEL, W., DAC LE KIM, W.,
TSCHAE SANG TSCHUNG

A simple chemical method for labelling phosphatidylcholine and sphingomyelin in the choline moiety.

Hoppe-Seyler's Z. Physiol. Chem. 352 (1971), 8, 1058-64

Biological Abstr. 53 (1972), 23624

The preparation of the title ¹⁴C-labelled compounds is described.

73-494

ZIBOH, V.A., HSIA, S.L.

Prostaglandin E₂: Biosynthesis and effects on glucose and lipid metabolism in rat skin.

Arch. Biochem. Biophys. 146 (1971), 1, 100-9

Biological Abstr. 53 (1972), 18921

The biosynthesis of prostaglandins from 1-¹⁴C arachidonic acid by homogenates of rat skin was investigated.

See also:

73-433 Biochemistry of microorganisms. XXI. Biogenesis of yosimin and norridulin, metabolic products of *Aspergillus unguis*.

2.3.4 - CARBOHYDRATES

73-495

DAVIES, P.J., GALSTON, A.W.

Labelled indole-macromolecular conjugates from growing stems supplied with labelled

indoleacetic acid. I. Fractionation.

Plant Physiol. 47 (1971), 3, 435-41

C.A. 74 (1971), 110617

After incubation of pea and bean stem sections in $1\text{-}^{14}\text{C}$ -labelled indoleacetic acid, most of the label was found as nonindole- ^{14}C in high molecular weight polysaccharides.

73-496

LEPP, N.W., PEEL, A.J.

Influence of IAA (indole-3-acetic acid) upon the longitudinal and tangential movement of labelled sugars in the phloem of willow.

Planta 97 (1971), 1, 50-61

C.A. 74 (1971), 110606

73-497

SOUKUPOVA, V., VERES, K.

Synthesis of 2-deoxy-D-ribose- $1\text{-}^{14}\text{C}$.

J. Label. Compounds 7 (1971), 3, 213-20

The title compound was prepared via the prolongation of the C chain, by the method of Fischer and Sowden.

2.3.5 - PEPTIDES, AMINO ACIDS, PROTEINS

73-498

FESTOFF, B.W., APPEL, S.H., DAY, E.

Incorporation of ^{14}C -glucosamine into synaptosomes in vitro.

J. Neurochem. 18 (1971), 10, 1871-86

C.A. 76 (1972), 12376

Amino acids and carbohydrates may be incorporated into glyco-

proteins of the synaptic membranes.

73-499

LUKMANOV, F.C., MAZIL'NIKOV, G.V., SAKHIPOV, R.T.

Metabolism of carbon during photosynthesis in peas in relation to potassium fertilizer application conditions.

Miner. Elem. Mekh. Fotosin. (1969), 49-53

C.A. 74 (1971), 111017

The leaves were exposed in a photometric chamber to $^{14}\text{CO}_2$ for 5 min., fixed, ground with 80% EtOH, and analyzed by chromatography and radioautography.

73-500

MAZIL'NIKOV, G.V.

Effect of potassium spray dressing on the chemism of pea photosynthesis under drought conditions.

Funkts. Osob. Khloroplastov (1969), 101-4

C.A. 74 (1971), 110996

The leaves were enclosed in a chamber with $^{14}\text{CO}_2$, fixed, ground with 80% EtOH, and homogenized. The photosynthetic products were determined by 2-dimensional paper chromatography and autoradiography.

73-501

ZASLAVSKII, SLAVIN, M.N., TIMOFEEVA, T.P.

Synthesis of sarcosine- ^{14}C .

Zh. Prikl. Khim. (Leningrad) 44 (1971), 9, 2142-3

C.A. 76 (1972), 14876

The preparation of the title compound is described.

73-502

ZIELKE, H.R., FILNER, P.

Synthesis and turnover of nitrate reductase induced by nitrate in cultured tobacco cells.

J. Biol. Chem. 246 (1971), 6, 1772-9

C.A. 74 (1971), 108332

Proteins were labelled by arginine- ^{14}C and with ^{15}N .

See also:

73-450 Heterogeneous distribution of A protein in R17 phage preparation.

73-451 The synthesis of radioisotopically labelled zeatin.

2.3.6 - STEROIDS

73-503

ABERHART, D.J., CASPI, E.

Fate of the 6α -hydrogen of 5α -cholest-7-en- 3β -ol in the conversion to 7-dehydrocholesterol by rat liver microsomes.

J. Biol. Chem. 246 (1971), 5, 1387-92

C.A. 74 (1971), 107175

Cholesta-5,7-dien- 3β -ol- $^{14}\text{C}_5$ was prepared.

2.3.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

73-504

REICHENBACH, G.

Solvent effects on the kinetics of the exchange between $^{14}\text{CO}_2$ and $\text{Co}(\text{CO})_2(\text{NO})\text{P}(\text{C}_6\text{H}_5)_3$.

J. Organometal. Chem. 31 (1971), 1, 103-9

C.A. 75 (1971), 122654

73-505

SLYSHKINA, S.A., DERBINKII, I.A., PAVLYUCHENKO, M.M., PRODAN, E.A.

Reactivity of ^{14}C -labelled sodium bicarbonate. Thermal decomposition in vacuum.

Geterogennye Khim. Reakts. (1970), 126-38

C.A. 75 (1971), 122659

Thermal decomposition rate of 6 NaHCO_3 samples differing in particle sizes and isotopic composition was measured at 313 - 423°K and 10^{-3} - 10^{-4} torr.

2.4 - HALOGEN LABELLED COMPOUNDS

73-506

ARNIKAR, H.J., RAO, B.S.

Retention of bromine-80 in labelled bromates following isomeric transition. II. Potassium, calcium, and zinc bromates.

J. Indian Chem. Soc. 48 (1971), 4, 323-5

C.A. 75 (1971), 57429

The ^{80}Br retention at room temperature was 29, 31 and 31% in $^{80\text{m}}\text{Br}$ -labelled KBrO_3 , $\text{Ca}(\text{BrO}_3)_2$, and $\text{Zn}(\text{BrO}_3)_2$.

73-507

GROSS, U., MEINERT, H.

Reactions of fluorine-18-labelled cesium fluoride with bromine pentafluoride.

Z. Chem. 11 (1971), 9, 349-50

C.A. 76 (1972), 9999

Cs^{18}F reacts with BrF_3 to give $\text{CsBr}^{18}\text{F}_6$, CsBrF_6 , and Br^{18}F_5 .

73-508

JOVANOVIĆ, M., DJURDJEVIĆ, D.,
SINADINOVIĆ, I., KRAINČANIĆ, M.Comparative investigations on
thyroglobulin and the iodopro-
tein which appeared in the blood
of rats treated with a large
dose of radioiodine.Jugoslav. Physiol. Pharmacol.
Acta 6 (1970), 3, 381-5C.A. 74 (1971), 109405

73-509

KHALAF, H.

Chlorine exchange between
1H,2H,3H-pentachloropropane
and aluminum trichloride-
³⁶Cl.Tetrahedron Lett. (1971),
45, 4239-42C.A. 76 (1972), 13709The title exchange gave 1,1,
2,3,3-pentachloropropane
labelled only in the 1- and
3-positions.

73-510

MATKOVICS, B., RAKONCZAY, Z.,
RAJKI, S.E., BALASPIRI, L.Steroids. XII. Iodination of
aromatic steroids by peroxi-
dases. (Preliminary communi-
cation).Steroidologia 2 (1971), 2,
77-9C.A. 76 (1972), 1317A significant incorporation of
¹³¹I ion was observed with
estrone and estradiol.

73-511

MOZHAIKII, A.M., KULAKOV,
V.N., STANKO, V.I.Production of radioactive
preparations. I. Optimum con-
ditions of electrophilic al-
bumin iodination.Isotopenpraxis 7 (1971), 1,
17-20C.A. 74 (1971), 107967Human serum albumin was iodina-
ted by a mixture of Na¹³¹I
and ICl.

73-512

SIMON, C., DANG, J., MIQUELIS,
R., BASTIANI, P.Iodinated particles in the rat
thyroid. I. Rapid separation
method.Acta Endocrinol. (Copenhagen)
68 (1971), 2, 367-76C.A. 75 (1971), 149316Iodinated particles were pre-
pared from thyroids obtained
from rats maintained in iso-
topic equilibrium with ¹²⁵I
and separated into physio-
logic populations by centri-
fugation.

73-513

WHEELER, O.H., CASANOVA DE
BRAS, H.Labelling of iodocytosine and
iodouracil.Int. J. Appl. Radiat. Isotop.
22 (1971), 11, 667-70C.A. 76 (1972), 13449The title compounds were label-
led by exchange reaction with
radioiodine (¹³¹I or ¹²⁸I).

See also:

73-472 Labelled compounds. X.
Mechanism of the conversion of
hexachloropropane to trichloro-
acrylic acid.73-473 Synthesis of 2,2-di-
chlorovinyl dimethyl phosphate
labelled with ¹⁴C, ³⁶Cl and
³²P.

2.5 - PHOSPHORUS-32 COMPOUNDS

73-514

EDLUND, B.

Purification of a nucleoside diphosphate kinase from pea seed and phosphorylation of the enzyme with adenosine ^{32}P -triphosphate.

Acta Chem. Scand. 25 (1971), 4, 1370-6

C.A. 75 (1971), 105359

The preparation, the purification and the degradation in alkali of a ^{32}P -labelled nucleoside diphosphate kinase are described.

73-515

LAEFFER, M.A., ANBAR, M.

Synthesis of ^{32}P -labelled polyalkyl polyphosphonates (phosphonated polyethylene).

J. Label. Compounds 2 (1971), 3, 345-7

The title compounds were prepared by the oxidative phosphorylation of polyethylene followed by hydrolysis.

See also:

73-426 Synthesis of di- and triradioisotopically labelled 1,2-dipalmitoyl-sn-glycerol 3-(2-aminoethyl hydrogen phosphate).

73-473 Synthesis of 2,2-dichlorovinyl dimethyl phosphate labelled with ^{14}C , ^{36}Cl and ^{32}P .

2.6 - SULFUR-35 COMPOUNDS

73-516

BAKER, E.M., HAMMER D.C., MARCH, S.C., TOLBERT, B.M., CANHAM, J.E.

Ascorbate sulfate. Urinary metabolite of ascorbic acid in man.

Science 173 (1971), 3999, 826-7

C.A. 75 (1971), 106982

Ascorbate-3-sulfate was labelled with ^{35}S .

73-517

BRETSCHER, M.S.

Human erythrocyte membranes. Specific labelling of surface proteins.

J. Mol. Biol. 58 (1971), 3, 775-81

C.A. 75 (1971), 58714

The sulfone of ^{35}S -labelled formylmethionyl methyl phosphate was prepared and used to label 2 proteins on the outside surface of the cell membrane.

73-518

FEL'DMAN, I.Kh., KOGAN, N.A., KOSHELEVA, I.A.

Cystine- ^{35}S .

Mechenye Biol. Aktiv. Veshchestva (1971), 3, 3-11

C.A. 75 (1971), 118557

A mixture of DL and meso stereoisomers of cystine- ^{35}S was prepared.

73-519

FORSBLIND, B.

Electron microscopic and autoradiographic study of L-cystine- ^{35}S incorporation in mouse hair follicles.

Acta Dermato-Venereol. 51 (1971), 1, 9-15

C.A. 74 (1971), 109110

73-520

HAYASHI, N.

Exchange reaction of ^{35}S between thiazolium compounds and sodium sulfide- ^{35}S .

Takeda Kenkyusho Ho 30 (1971), 1, 13-21

C.A. 72 (1971), 91840

The distribution of ^{35}S in thiothiamine molecules prepared by the reaction of ^{35}S with thiamine was determined.

73-521

ROMBOUTS, J.E.

Factors affecting the distribution pattern of systemic pesticides in plants.

Meded. Fac. Landbouwwetensch. Rijkuniv. Gent 36 (1971), 1, 63-71

C.A. 76 (1972), 21831

Sulfur- 35 labelled p-methoxyphenyl methylsulfone and p-propoxyphenyl sulfone were used to follow the probable course of pesticide translocation and localization in broad-bean plants.

73-522

ZEMAN, K., HAVLICEK, J.

A study of the antigenic complexes of the intracellular components of beta hemolytic streptococci.

Zentralbl. Bakteriolog. Parasitenk. Infektionskrankh. Hyg. Abt. I. Orig. 213 (1970), 1, 48-52

Biological Abstr. 53 (1972), 37187

Radioimmunodiffusion and radioelectrophoresis were used to study the incorporation of ^{35}S into the precipitating fractions of intracellular components of beta hemolytic streptococci.

2.7 - OXYGEN LABELLED COMPOUNDS

73-523

AGRAWAL, J.P.

Fractionation of ^{18}O and ^{13}C isotopes by chemical exchange of carbon dioxide with amine carbamates.

Separ. Sci. 6 (1971), 6, 819-29

C.A. 72 (1971), 136175

Values of overall separation varied in the range 1.50-1.96 for ^{13}C , and 1.40-2.40 for ^{18}O .

73-524

HEASLEY, L.W.

Kinetics and mechanism of ^{18}O exchange of some ^{18}O -labelled sulfur compounds.

Oregon State Univ. (1970), 118 pp. Univ. Microfilms Order No 70-14134

C.A. 72 (1971), 151000

73-525

LARSEN, B.S., KOLE, J., LAWESSON, S.O.

Photochemistry. II. Photochemistry of the 4-thioisochroman-1-one 4-oxide system.

Tetrahedron 27 (1971), 11, 5163-76

C.A. 76 (1972), 13457

^{18}O -labelled title compound was prepared.

2.8 - NITROGEN-15 COMPOUNDS

73-526

FRY, A., EVERLY, C.R.

Kinetic study of the nitrogen-15 exchange of p-substituted benzamides with ammonia.

J. Org. Chem. 36 (1971), 23, 3587-90

C.A. 76 (1972), 13596

The title exchange was studied with liquid NH_3 as function of temperature and catalyst concentration.

73-527

GOXON, B.

Studies of ^{15}N -labelled amino sugars: the synthesis and mass spectrometry of derivatives of 6-amino-6-deoxy-D-glucose-6- ^{15}N .

Carbohydrates Res. 19 (1971), 2, 197-210

Biological Abstr. 53 (1972), 17730

The title compounds were synthesized by reaction of the 6-O-p-tolylsulfonyl or 6-deoxy-6-iodo derivative of 1,2:3,5-di-O-isopropylidene- α -D-glucopyranose with potassium phthalimide- ^{15}N .

73-528

LEETE, E., ISAACSON, H.V., DURST, H.D.

Synthesis of nitrogen- 15 labelled alkaloids, Coniine- ^{15}N and nicotine-1'- ^{15}N .

J. Label. Compounds 7 (1971), 3, 313-7

Coniine- ^{15}N was prepared by the reductive amination of 5-oxooctanal using NaBH_3CN and $^{15}\text{NH}_4\text{Br}$.

73-529

WILSON, R.P., BLOOMFIELD, R.A.

Improved method for separation of urea nitrogen and glutamine amide nitrogen for nitrogen- 15 metabolic studies.

Anal. Biochem. 43 (1971), 1, 1-6

C.A. 75 (1971), 72361

The title procedure overcomes the problem of alkaline hydrolysis of glutamine amide N.

2.9 - CARBON-13 COMPOUNDS

73-530

AGRAWAL, J.P.

Enrichment of carbon-13 by chemical exchange of carbon dioxide with amine carbamates in nonaqueous solvents.

Separ. Sci. 6 (1971), 6, 831-9

C.A. 75 (1971), 136176

The optimum operating conditions for the column for enriching ^{13}C are outlined.

73-531

NEIMAN, L.A., SHEMYAKIN, M.M., ZHUKOVA, S.V., NEKRASOV, Yu.S., PEHK, T., LIPPMAA, E.

Isotopic study of dual reactivity and tautomerism of triad A=B-AX systems. II. Use of carbon-13 for the determination of substitution mechanisms in allylic and methylene azomethine systems.

Tetrahedron 27 (1971), 13, 2811-21

C.A. 75 (1971), 75910

73-532

SPINNER, E.

Electrical discharge reactions of acetone. Carbon-13 double labelling study of intramolecular and intermolecular pathways.

Univ. Pennsylvania (1970), 100 pp. Univ. Microfilms Order No 71-7860

C.A. 75 (1971), 75763

See also:

73-523 Fractionation of ^{18}O and ^{13}C isotopes by chemical

exchange of carbon dioxide with amine carbamates.

2.10 - TECHNETIUM LABELLED COMPOUNDS

73-533

BENJAMIN, P.P., VOELKER, W.H., FRIEDEL, H.L.

Semiautomated laboratory production of ^{99m}Tc -albumin.

J. Nucl. Med. 12 (1971), 6, 325-6

C.A. 75 (1971), 59638

Specifications are described for a electrolytic method of complexing ^{99m}Tc with albumin through anodic dissolution of Zr.

73-534

NOVAK, D.

Applicability of ^{99m}Tc -labelled human albumin microspheres for perfusion scintigraphy of the lungs. I. Physical properties and organ distribution of ^{99m}Tc -HAM.

Strahlentherapie 142 (1971), 4, 437-46

C.A. 76 (1972), 11735

The labelling efficiency was 50% and the free radioactivity in the microspheres was only 1%.

73-535

WEBBER, M.M., CRAGIN, M.D., VICTERY, W.K.

Aluminum content in effluents from commercial technetium generators.

J. Nucl. Med. 12 (1971), 10, 700

C.A. 75 (1971), 148225

Aluminum concentrations in effluents from commercial technetium Mo-Tc generators were

investigated.

73-536

WILLIAMS, M.J., DEEGAN, T.

^{99m}Tc -labelled serum albumin in cardiac output and blood volume studies.

Thorax 26 (1971), 4, 460-5

Biological Abstr. 53 (1972), 18118

A simple 3-stage process is described for the preparation of albumin labelled with ^{99m}Tc .

2.11 - INDIUM-113 LABELLED COMPOUNDS

73-537

ADATEPE, M.H., FENDOSKE, P., VAN AMBERG, A., WHARTON, T., EVENS, R.G., POTCHEN, E.J.

Red cell and plasma protein labelling with ^{113m}In .

Int. J. Appl. Radiat. Isot. 22 (1971), 8, 498-501

Biological Abstr. 53 (1972), 17835

Indium binding to red cells is similar to that of Fe.

73-538

PAAL, G., KAMPMANN, H., SINN, H.

Scintigraphic visualization of extracranial carotid thromboses with ^{113m}In -fibrinogen.

Z. Neurol. 199 (1971), 4, 277-82

Biological Abstr. 53 (1972), 29761

2.12 - MISCELLANEOUS LABELLED COMPOUNDS

73-539

BABAYAN, S.G., ISAKHANYAN, S.S., MEDVEDEVA, L.P.

Kinetics of crystallization and isotopic exchange of iron(III) nitrate.

Radiokhimiya 13 (1971), 4, 505-8

C.A. 75 (1971), 123125

The crystallization of super-saturated solutions of $\text{Fe}(\text{NO}_3)_3$ was studied using Fe-labelled FeCl_3 .

73-540

CAVILL, I.

Preparation of iron-59 labelled transferrin for ferrokinetic studies.

J. Clin. Pathol. 24 (1971), 5, 472-4

C.A. 75 (1971), 136974

The preparation of ^{59}Fe -transferrin free of ^{59}Fe ferric citrate is described.

73-541

CHEKASOV, G.F., KHOLMANSKIKH, Yu.B., PANKRASHOVA, V.D.

Dissolution kinetics of some antimony and arsenic compounds in aqueous solutions of sulfuric acid.

Tr. Ural. Nauch.-Issled. Proekt. Inst. Mednoi Prom. (1970), 13, 266-75

C.A. 75 (1971), 153335

The title dissolution was studied by using the methods of a rotary disk and radioactive indicators.

73-542

CIFKA, J., KRONRAD, L., KACENÁ, V.

Radioactive organomercury compounds.

Czech. 138,124

C.A. 75 (1971), 151910

The title compounds are obtained

by exchange of Hg for radioactive Hg from an inorganic labelled compound.

73-543

CIFKA, J., KRONRAD, L.

Derivatives of 3-mercuri-2-methoxypropylureas (labelled with ^{197}Hg).

Czech. 138,128

C.A. 75 (1971), 151911

The title compounds were prepared by thermal neutron irradiation of the nonlabelled compounds.

73-544

CORRAN, P.H., WALEY, S.G.

Amino acid sequences around the cysteine residue of calf lens α -crystallin.

Biochem. J. 124 (1971), 1, 61-7

C.A. 75 (1971), 10520

The thiol group of calf lens α -crystallin was labelled by carboxylation with radioactive Na iodoacetate.

73-545

ELLIS, R.W., FANG, S.C.

In vivo binding of mercury to soluble proteins of the rat kidney.

Toxicol. Appl. Pharmacol. 20 (1971), 1, 14-21

C.A. 76 (1972), 670

The kinetics of the mercury binding profiles of soluble protein from the kidneys of rats receiving orally ^{203}Hg -labelled phenylmercuric acetate or mercuric acetate were studied.

73-546

FLETCHER, J.

The plasma clearance and liver uptake of iron from transferrin

of low and high iron saturation.

Clin. Sci. (Oxford) 41 (1971),
5, 395-402

Biological Abstr. 53 (1972),
32295

The serum was labelled with
radioactive Fe.

73-547

GELIS, C., MARIGNAN, R., BON-
TOUX, J., VIE, M.T.

Metal-protein complexes for med-
ical use. Copper gelatin complex.

Trav. Soc. Pharm. Montpellier 31
(1971), 1, 27-36

C.A. 75 (1971), 107412

The complex ^{64}Cu -gelatin was un-
stable at blood pH.

73-548

GEISEMA, W.J., REMIJNSE, A.G.

Effect of labelling on the solu-
bility of cerium(III) oxalate
in water.

Recl. Trav. Chim. Pays-Bas 90
(1971), 3, 213-20

C.A. 75 (1971), 122848

The solubilities of Ce(III) oxa-
late, both inactive and label-
led with ^{144}Ce , were identical.

73-549

GOLLAN, J.L., DAVIS, P.S.,
DELLER, D.J.

Binding of copper by human ali-
mentary secretions.

Amer. J. Clin. Nutr. 24 (1971),
9, 1025-7

C.A. 75 (1971), 106997

Human alimentary secretions were
labelled with ^{64}Cu and analyzed
by gel filtration.

73-550

GOODMAN, P.

Analytical applications of
 ^{85}Kr impregnated materials.

Amer. Lab. 3 (1971), 11,
37-45

C.A. 76 (1972), 20850

The preparation, properties
and uses of the title com-
pounds are reviewed.

73-551

LAZORENKO, G.E.

Curious properties of alginic
acid.

Priroda (Moscow) (1971), 5,
81-2

C.A. 75 (1971), 72997

Alginic acid absorbs ^{90}Sr
from seawater with coeffi-
cient of absorption up to 100
units. ^{137}Cs , ^{65}Zn and ^{204}Tl
were only slightly absorbed
but the ^{144}Ce coefficient of
absorption was more than 400
units.

73-552

MAGGIA, A., ZENI, G., LOCA-
TELLI, C., DALZOTTO, I.

Metabolism of binomial copper
-ceruloplasmin (ceruloplasmic
and nonceruloplasmic copper).
I. Biochemical and radioiso-
topic (^{64}Cu) study under phy-
siological conditions.

Acta Med. Patavina 29 (1969),
4, 163-71

C.A. 75 (1971), 73785

73-553

McBRIDE, L.C.

Distribution pattern of the
incorporation of radioiron
into rat liver ferritin.

North Carolina State Univ.
(1969), 117 pp.

Univ. Microfilms Order No 71-
13964

C.A. 75 (1971), 149477

73-554

SCHADE, A.L., PALLAVICINI, C.,
WIESMANN, U.

Ekkriosiderophilin of human
milk.

Protides Biol. Fluids, Proc.
Colloq. (1968), 16, 619-25

C.A. 75 (1971), 60797

The preparation and purification
of ⁵⁹Fe-ekkrinosidero-
philin are described.

73-555

SHAW, J.E., GIBSON, W., JESSUP,
S., RAMWELL, P.

Effect of PGE₁ [prostaglandin
E₁] on cyclic AMP and ion move-
ments in turkey erythrocytes.

Ann. N.Y. Acad. Sci. 180 (1971),
241-60

C.A. 75 (1971), 59204

Turkey erythrocytes were label-
led with ⁴⁵Ca.

73-556

SHIRSHOV, V.A., SHAIN, S.S.

Varietal features of the accu-
mulation of strontium-90 and ce-
sium-137 on leguminous crops.

Agrokhimiya (1971), 9, 107-12

C.A. 75 (1971), 150750

The soils were contaminated by
addition of SrCl₂ and Cs(NO₃)₂
solutions labelled with ⁹⁰Sr
and ¹³⁷Cs respectively.

73-557

SPURNY, K., LODGE, J.P.Jr.

Preparation of radioactively
labelled aerosols by conden-
sation. IV. Aerosols of gold,
rhenium, oxide, silver, tel-
lurium, and vanadium oxide.

Collect. Czech. Chem. Commun.
36 (1971), 9, 3358-62

C.A. 75 (1971), 144245

Monodisperse aerosols were pre-
pared by a spontaneous vapor
condensation.

73-558

SVEHAG, S.E., MANHEM, L.

In vitro opsonization test for
evaluation of ALG (antilympho-
cyte globulin) preparations.

Symp. Ser. Immunobiol. Stand.
(1970), 16, 307-13

C.A. 75 (1971), 149946

The lymphoid cells were labelled
with ⁵¹Cr and all were stable.

3 - RADIODECOMPOSITION, STABILITY, STORAGE

73-559

STAUM, M.M., KUHL, D.E

Control of oxidative degradation
in technetium-99m-labelled fer-
rous hydroxide. Simplified
method.

J. Nucl. Med. 12 (1971), 9, 629

C.A. 75 (1971), 126370

Prevention of oxidation of fer-
rous ion is aided by creating a
partial vacuum inside the product
with an ordinary needle and
syringe.

73-560

WIEGERS, U., HILZ, H.

New method using proteinase K to
prevent mRNA degradation during
isolation from HeLa cells.

Biochem. Biophys. Res. Commun.
44 (1971), 2, 513-9

C.A. 75 (1971), 105946

The degradation of mRNA during
isolation of high specific acti-
vity messenger RNA from pulse-
labelled HeLa cells was prevent-
ed by addition of proteinase K.

4 - PURIFICATION, SEPARATION

73-561

CONDORELLI, S., ERMINI, M.,
COSMI, E.V.

Study of the passage of epinephrine from the mother to the fetus through the use of thin-layer and radiochromatography.

Acta Anaesthesiol. (Padova),
21 (1970), 6, 715-27

Biological Abstr. 53 (1972),
24334

Epinephrine was separated by thin-layer chromatography on silica gel.

73-562

FORGIONE, A. MARTELLI, P., MAR-
CUCCI, F., FANELLI, R., MUSSINI,
E., JOMMI, G.C.

Gas-liquid chromatography and mass spectrometry of various benzodiazepines.

J. Chromatogr. 59 (1971), 1,
163-8

C.A. 75 (1971), 74362

Deuterated oxazepam, diazepam, N-methyloxazepam and nitrazepam were separated by gas-liquid chromatography on a 3% OV-17/Gas-Chrom Q column at 250°.

73-563

FUKAYAMA, G.M., BARRETT, C.,
WOOD, P.D.S., CROWLEY, L.G.

Extraction of radioactive estrogens and metabolites from small amounts of human or animal tissues excised following intravenous administration of (6,7-³H)-17 β -estradiol.

J. Clin. Endocrinol. Metab. 33
(1971), 4, 677-82

C.A. 76 (1972), 11734

The extraction and purification procedure is described.

73-564

HUEBERS, H., HUEBERS, E.,
FORTH, W., RUMMEL, W.

Binding of iron to a nonferritin protein in the mucosal cells of normal and iron-deficient rats during absorption.

Life Sci. 10 (1971), 20, Pt. 1,
1141-8

C.A. 76 (1972) 2078

Two ⁵⁹Fe-labelled Fe-binding proteins were isolated by electrophoresis (acrylamide) and chromatography (Sephadex).

73-565

JACOBSEN, N., POVATONG, L.,
ROLLA, G.

Isoelectric separation of proteins after in vitro cultivation of sublingual tissue.

Caries Res. 5 (1971), 3, 228-39

C.A. 75 (1971), 60827

Labelled proteins were separated by isoelectric focussing on a LKB 8101 column and the radioactive distribution was determined by scintillation counting.

73-566

KELMERS, A.D., HEATHERLY, D.E.

Columns for rapid chromatographic separation of small amounts of tracer-labelled transfer ribonucleic acids.

Anal. Biochem. 44 (1971), 2,
486-95

C.A. 76 (1972), 1510

A small reversed-phase chromatographic system for the separation of labelled aminoacyl tRNAs is described.

73-567

LEVINSON, S.S.

Fractionation of proteins from

the particulate material of a cerebral cell-free system: incorporation of labelled amino acids into some basic proteins similar in size and in charge to proteins which are known to be part of the cerebral ribosomes.

Univ. California (1970), 165 pp.
Univ. Microfilms Order No 71-654

C.A. 75 (1971), 126151

73-568

ORAVEC, M., KORNER, A.

Stimulation of synthesis of DNA-like and ribosomal RNP by growth hormone.

J. Mol. Biol. 58 (1971), 2, 489-98

C.A. 75 (1971), 59264

Methylalbumin kieselguhr column chromatography was used to separate rapidly labelled RNA from the liver nuclei of rats given ^3H -labelled orotic acid.

73-569

SPEVACKOVA, V., KRIVANEK, M.

Dithizone as a stationary phase in reversed-phase chromatography used in activation analysis.

Ustav. Jad. Vyzk. (1970), 2355-Ch, 7

C.A. 75 (1971), 72241

Macroporous divinylbenzene-styrene copolymer was treated with CCl_4 containing dithizone, dried and used in reversed-phase chromatography of biological material for ^{59}Fe - ^{60}Co separation.

73-570

SZANTAY, I., SZIRMAI, E.

Methionine- ^{35}S incorporation into the liver proteins of rats under immobilization-induced stress.

Acta Med. Jugoslav. 24 (1970), 4, 357-61

C.A. 75 (1971), 127561

The hydrolyzed liver proteins were separated radiochromatographically and estimated.

73-571

TAN, K.B., McAUSLAN, B.R.

Proteins of polyhedral cytoplasmic deoxyviruses. I. Structural polypeptides of FV_3 .
Virology 45 (1971), 1, 200-7

C.A. 75 (1971), 71454

The title compound labelled with radioactive amino acids was purified by velocity gradient and density gradient techniques.

See also:

73-389 Demonstration of newly replicated short DNA chains.

73-467 Formation in vitro of androst-5-ene- 3β , 16α , 17β -triol from dehydroepiandrosterone by rat liver.

73-512 Iodinated particles in the rat thyroid. I. Rapid separation method.

73-514 Purification of a nucleoside diphosphate kinase from pea seed and phosphorylation of the enzyme with adenosine ^{32}P -triphosphate.

5 - A N A L Y S I S

5.0 - GENERAL

73-572

BOGART, B.I., PRUTKIN, L.,
OCKEN, P.R.

Localization of phorbol ester acetate- ^{14}C in papillomas that were initiated with 7,12-DMBA and promoted with phorbol ester. Electron-microscopic autoradiography study.

J. Invest. Dermatol. 56 (1971), 2, 140-6

C.A. 75 (1971), 109570

73-573

BOGOMOLOV, K.S. et Al.

Autoradiographic method in electron-microscopic studies.

Lab. Delo (1971), 6, 359-62

C.A. 75 (1971), 59642

The title method was elaborated for bone marrow and peripheral blood cells.

73-574

BORG, T.K., NORRIS, D.M.

Penetration of ^3H -catechol, a feeding stimulant, into chemo-receptor sensilla of *Scolytus multistriatus*.

Ann. Entomol. Soc. Amer. 64 (1971), 3, 544-7

C.A. 75 (1971), 73167

The penetration of the title compound was studied by high resolution autoradiography.

73-575

BRESLER, S.E., DADIVANJAN, L.P.,
MOSEVITSKY, M.I.

Electron-microscopic autoradiography of recombinant DNA molecules of bacteriophage T1.

Biochim. Biophys. Acta 224

(1970), 1, 249-52

The autoradiograph was formed by silver grains in a layer of photo-emulsion covering the DNA preparation.

73-576

FORREST, I.S., BROOKES, L.G.,
FUKAYAMA, G., SERRA, M.T.

Interference of chemoluminescence with ^3H -scintillation counting.

J. Pharm. Pharmacol. 23 (1971), 9, 705-7

C.A. 76 (1972), 1559

Unextracted biological materials such as serum, urine, feces and tissues showed chemoluminescence, and treatment should precede normal scintillation counting except if scintillation solutions were used.

73-577

GEDDES, I.C.

Metabolism of local anesthetics as determined by the use of ^{14}C - and ^3H -labelled material.

Laval Med. 42 (1971), 7, 668-79

C.A. 75 (1971), 117003

The metabolites obtained were analyzed by paper chromatography and autoradiography.

73-578

JONES, G.H.

The analysis of exchanges in tritium-labelled meiotic chromosomes: II. *Stethophyma grossum*.

Chromosoma 34 (1971), 4, 367-82

Biological Abstr. 53 (1972), 19594

The autoradiographic analysis of the title exchanges is a

useful approach to the study of meiotic exchange events.

73-579

JOY, M.D.

³⁵S-Thiopentone autoradiography as a means for studying the physiological territory of supply of cerebral vessels.

J. Physiol. (London) 215 (1971), 1, 4P-5P

C.A. 75 (1971), 59397

The preparation of autoradiographs from dog brains is described.

73-580

KOBAYASHI, T., BAKAY, L.

Autoradiography for diffusible substances and its application to central nervous tissue.

J. Med. (Basel) 2 (1971), 35-44

C.A. 75 (1971), 148410

A method of microscopic autoradiography for water-soluble radioactive substances is described.

73-581

KRUPCHITSKAYA, K.I., PANKOVA, G.A., KONONENKO, G.G., GEL'FMAN, A.Ya.

Simple chemical methods for preparation of samples for scintillation determinations.

Monokrist. Stsintill. Org. Lyuminofory (1970), 5, 290-4

C.A. 75 (1971), 146893

73-582

NAKAI, Y., SHINKAWA, Y.

Electron-microscopic autoradiography on the localization of serotonin in the frog median eminence.

Z. Zell-Forsch. Mikroskop. Anat. 119 (1971), 3, 326-33

Biological Abstr. 53 (1972), 21336

An electron-microscopic autoradiography was performed with 5-hydroxytryptophane-³H which is the precursor of serotonin.

73-583

NEUBER, T.

Autoradiographic studies on so-called semithick slices.

Z. Biol. (Munich) 116 (1971), 6, 467-71

C.A. 76 (1972), 1579

The preparation of autoradiograms is described.

73-584

OTTESEN, M.

Methods for measurement of hydrogen isotope exchange in globular proteins.

Methods Biochem. Anal. (1971), 20, 135-68

C.A. 75 (1971), 148286

The methods for ¹H-²H and ¹H-³H exchange measurements in globular proteins are reviewed.

73-585

SKATKOV, M.E., SEMINA, V.F.

Method of removing the radioactive tag and repeated emulsion coating of histoautoradiographic preparations.

Byull. Eksp. Biol. Med. 71 (1971), 10, 121-2

C.A. 76 (1972), 1578

A technique for removing the radioactive tag without removal of the gelatin layer is described.

73-586

SALPETER, M.M., SALPETER, E.E.

Resolution in microscope radioautography. II. Carbon-14.

J. Cell. Biol. 50 (1971), 2, 324-32

C.A. 75 (1971), 59658

Experimental resolution values and half distances were determined.

73-587

STUMPF, W.E.

Autoradiographic techniques for the localization of hormones and drugs at the cellular and sub-cellular level.

Acta Endocrinol. (Copenhagen) Suppl. (1971), 153, 205-22

C.A. 75 (1971), 59695

Four autoradiographic techniques are described.

73-588

URIEL, J., LAVIALLE, C.

Autoradiographic method for characterization of DNA and RNA polymerases after gel electrophoresis.

Anal. Biochem. 42 (1971), 2, 509-15

C.A. 75 (1971), 58854

Radiolabelled nucleotides were added to the incubation media and allowed visualization of the catalytic activity by an autoradiographic method.

73-589

WOOLFREY, B.F.

Validity of thin-film techniques for histochemical detection of ribonuclease activity. Negative radioautographic localization of ribonucleodepolymerase activities using ^{14}C -labelled RNA, ^3H -labelled RNA and ^3H -labelled synthetic polyribonucleotides incorporated into the films.

Univ. Minnesota (1970), 214 pp.
Univ. Microfilms Order N° 70-27181

C.A. 75 (1971), 137069

73-590

ZUCKERMAN, J.J.

Applications of tin-119m Moessbauer spectroscopy to the study of organotin compounds.

Advan. Organometal. Chem. (1970), 9, 21-134

C.A. 75 (1971), 75546

Applications of $^{119\text{m}}\text{Sn}$ Moessbauer spectroscopy to problems in organotin chemicals are reviewed.

5.1 - DETERMINATION OF ACTIVITY

73-591

BASSI, M., FAVALI, M.A.,
CONTI, G.G., BETTO, E.

Uridine- ^3H incorporation in leaf cells infected with lucerne mosaic virus. A quantitative electron-microscopic autoradiographic study.

Phytopathol. Z. 69 (1970), 3, 247-55

C.A. 74 (1971), 108334

73-592

BENES, J., TOMASEK, M.

Dosimetrical checking of strontium in the biological chain.

Radioisotopy 11 (1970), 5, 823-34

C.A. 75 (1971), 59637

A procedure suitable for the dosimetric determination of ^{90}Sr is described.

73-593

DOWNES, A.M.

Radioassay of some β -emitting isotopes in wool.

Org. Scintill. Liquid Scintill.

Counting Proc. Int. Conf.
(1970), 1031-54

C.A. 76 (1972), 101013

The amount of selfabsorption of β -particles in wool was shown to increase with fiber diameter.

73-594

FURST, P., JOHNSON, A.

Control and modification of methods for determination of nitrogen-15 in biological material.

Acta Chem. Scand. 25 (1971), 3, 930-8

C.A. 75 (1971), 72365

The modifications include special precautions for N_2 distillation, technical improvements of the mass spectrometer and the mass-spectrometric technique and corrections for air contamination.

73-595

HELLUNG-LARSEN, P.

Scintillation counting of aqueous solutions of 3H -RNA.

Acta Chem. Scand. 25 (1971), 4, 1359-69

C.A. 75 (1971), 105932

The radioactivity was determined in 9 known and 2 new scintillation liquids by direct addition to the scintillation liquids; prior treatment with solubilizer; and prior plating on filters.

73-596

KRAMER, S.G., POTTS, A.M., MANGNALL, Y.

Dopamine. Retinal neurotransmitter. II. Autoradiographic localization of dopamine- 3H .

Invest. Ophthalmol. 10 (1971), 8, 617-24

C.A. 75 (1971), 115793

73-597

KULEBA, L.G.

Method for determination of radioactive and stable strontium in sea organisms and water.

Radioekologicheskie Issled. Sredizemnogo Morya (1970), 89-94

C.A. 72 (1971), 59643

^{90}Sr was determined in biological materials on the basis of ^{90}Y content.

73-598

LENART, G., ARKY, I., RISCCHAK, G.

Determination of the ^{85}Sr ion/calcium ion ratio in bone.

Acta Biochim. Biophys. 2 (1970), 3, 295-7

C.A. 74 (1971), 108036

A method was developed for the quantitative determination of the ratio of $^{85}Sr^{2+}$ to Ca^{2+} in bones.

73-599

LISSNER, W., GREENLEE, J.E., CAMERON, J.D., GOREN, S.B.

Localization of tritiated digoxin in the rat eye.

Amer. J. Ophthalmol. 72 (1971), 3, 608-14

Biological Abstr. 53 (1972), 21911

Autoradiographic and scintillographic techniques were used.

73-600

NIVELEAU, A.

Autoradiography of isolated DNA molecules.

J. Microsc. (Paris) 11 (1971), 1, 175-8

C.A. 75 (1971), 105910

DNA was extracted into PhOH and prepared for electron microscopy. Pt-C shadowing was followed by application of Ilford I4 emulsion.

73-601

PERSCHKE, H., PROKSCH, G.

Analysis of ^{15}N abundance in biological samples by emission spectrometry.

Nitrogen-15 Soil-Plant Stud. Proc. Res. Co-ord. Meet. (1969), 223-5

C.A. 75 (1971), 150682

The spectrometric analysis of $^{15}\text{N}/^{14}\text{N}$ ratios in biological samples is described.

73-602

RAMBOURG, A., BENNETT, G., KOPRIWA, B., LEBLOND, C.P.

Radioautographic detection of the glycoproteins in the intestinal epithelium of rats after fucose- ^3H injection. Electron-microscopic study of thick (0,5 μ) sections stained with a hydrochloric-phosphotungstic acid mixture.

J. Micros. (Paris) 11 (1971), 1, 163-8

C.A. 75 (1971), 116376

Portions of duodenum were embedded in glycol-methacrylate, sectioned and dipped in Ilford I4 emulsion.

73-603

WAREMBOURG, M.

Historadioautographic study of gonadohypothalamic hormonal retroactions.

Lille Med. 16 (1971), 4, 507-14

C.A. 75 (1971), 105702

Slices of brain (10-15 μ) were covered with Kodak AR 10 film, dried at room temperature and

refrozen at 0°. Two-months exposure was given. The sections were fixed in MeOH and 30% Na thiosulfate and stained with Me pyronine.

73-604

WEINSTOCK, A., LEBLOND, C.P.

Elaboration of the matrix glycoprotein of enamel by the secretory ameloblasts of the rat incisor as revealed by radiography after galactose- ^3H injection.

J. Cell Biol. 51 (1971), 1, 26-51

C.A. 75 (1971), 116364

The formation of glycoprotein was traced radioautographically.

5.2 - APPARATUS

73-605

CULLEN, M.C., MCGUINNESS, E.T.

Radiochromatographic assay for thiol groups of soluble proteins using ^{203}Hg -labelled methylmercury.

Anal. Biochem. 42 (1971), 2, 455-69

C.A. 75 (1971), 59714

^{203}Hg -Methylmercury labelled proteins were continuously monitored by the readout of a column chromatography effluent directed through an anthracene packed flow-cell detector mounted in a liquid scintillation counter.

73-606

STRONG, C., DILLS, R., GALLIARD, T.

Applications of radio gas chromatography.

Column (1971), 13, 2-5

C.A. 76 (1972), 20961

This radio gas chromatography system consists of a Pye series 104 chromatograph, a Panax Radiogas Detector system and a combustion tube packed with 15 cm CuO, 6 mm silica wool, and 21 cm electrolytic Fe filings.

5.3 - DEGRADATION

73-607

SHIPLEY, W.U., BAKER, A.R., COLTEN, H.R.

DNA degradation in mammalian cells following complement mediated cytolysis.

J. Immunol. 106 (1971), 2, 576-9

C.A. 74 (1971), 109741

The degradation of tritiated DNA was studied.

See also:

73-514 Purification of a nucleoside diphosphate kinase from pea seed and phosphorylation of the enzyme with adenosine ³²P-triphosphate.

73-388 Biosynthesis and degradation of isotopically labelled ascorbic acid (plants).

6 - MISCELLANEOUS

73-608

KOCH, A.L.

Evaluation of the rates of biological processes from tracer kinetics data. IV. Digital simulation of nucleic acid metabolism in bacteria.

J. Theor. Biol. 32 (1971), 3, 451-69

C.A. 75 (1971), 105268

A flexible computer program was set up to simulate the kinetics of the amounts of radioactivity in various classes of nucleic acids for a generalized biological system.