

ABSTRACTS SECTION

In this section are given information on methods of synthesizing 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.

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1 - GENERAL

73-1

GERRARD, M., BAKER, P.S.
Selected Abstracts of World Literature on Production and Industrial Uses of Radioisotopes (From N.S.A. July-September 1970).

ORNL-IIC-30 (1970), Pt 3, 49 pp.

C.A. 75 (1971), 70562

73-2

FORIES, W.J., KOLENICH, J.J., SEGAL, A.S.

Responsibilities for radio-

pharmaceuticals.

Trans. Amer. Nucl. Soc. 14 (1971), 2, 521

N.S.A. 26 (1972), 2405

73-3

SEAGREN, R.D., SHAPPERT, L.B.

Indexed Bibliography on Transportation and Handling of Radioactive Materials, N° 2.

ORNL-NSIC-84 (1971), 123 pp.

C.A. 75 (1971), 70565

2 - SYNTHESIS

2.0 - GENERAL

73-4

SINGER, S.J.

Affinity labelling of protein active sites.

Mol. Prop. Drug Receptors, Ciba Found. Symp. (1970), 229-46

C.A. 75 (1971), 31003

Theoretical and experimental aspects of affinity labelling are discussed.

73-5

STANGER, D., PAUCKER, K.

Preparative electrophoresis of isotopically labelled L-cell interferons.

Appl. Microbiol. 21 (1971), 6, 1067-71

C.A. 75 (1971), 46796

The preparative method of polyacrylamide gel electrophoresis was adapted for purification and characterization of isotopically labelled L-cell interferons.

73-6

SWIGON, K., MICHALIK, J., RADWAN, M.

Radioisotope method for mixing investigations of granular substances.

INR-1372 (1972), 24 pp.

N.S.A. 26 (1972), 33559

A continuous method for labelling of great masses of granular substances in iron ore sintering plants is described.

73-7

THOMAS, P.J., DUTTON, H.J.
Preparation and counting of lipophilic samples.
Curr. Status Liquid Scintill. Counting (1970), 164-9
C.A. 75 (1971), 31002
Double labelling procedures and applications are reviewed.

73-8

TODD, I.J., SCHOLER, F.R.,
BODNER, G.M., SENOR, L.E.,
CARTER, J.C.
Elucidation of the B 11 NMR spectra of some B_9H_{13} (ligand) derivatives.
AD-715649, TR-4 (1970), 23 pp.
S.T.A.R. (1971), 18687
 B_9H_{13} (ligand) derivatives with both neutral and negatively charged ligands were specifically labelled.

2.1 - DEUTERIUM COMPOUNDS

2.1.0 - GENERAL

2.1.1 - ALIPHATIC COMPOUNDS

73-9

CLARK, W.G., SETSER, D.W.,
DEES, K.
Nonequilibrium kinetic isotope effects and other aspects of models for hydrogen chloride and deuterium chloride elimination from chloroethane- d_0 , $-d_3$ and $-d_5$.

J. Amer. Chem. Soc. 93 (1971), 21, 5328-35
Chemischer Informationsdienst Organische Chemie (1971), 52, 148

73-10

NICHOLAS, J.E., BAYRAKCEKEN, F.,

FINK, R.D.

Reactions of hydrogen atoms of high translational energy with ethane.

J. Chem. Soc. A (1971), 16, 2646-8

C.A. 75 (1971), 117749

The reactions of translationally excited D with ethane were studied.

73-11

PAQUETTE, L.A., THOMPSON, G.L.

Competitive bond rotation and bond scission processes in semistabilized 1,4 diradicals. Thermal fragmentation of (4.4.2)propella-2,4-dienes.

J. Amer. Chem. Soc. 93 (1971), 19, 4920-2

C.A. 75 (1971), 129201

Three different 11-methoxy-12-deuterio(4.4.2)propella-2,4-dienes were prepared.

73-12

WILLIAMSON, D.G.

Reaction of $O(^3P)$ with di-deuterioacetylene.

J. Phys. Chem. 75 (1971), 26, 4053-6

N.S.A. 26 (1972), 11631

The title reaction was studied to determine the importance of D atom production.

73-13

YAKOVLEVA, E.A., ISAEVA, G.C.,
KALININ, V.N., SAKHARKIN, L.
I., SHATENSHEIN, A.I.

Isotopic hydrogen exchange at the C-H bond of o- and m-carboranes and their derivatives with liquid ammonia and with ethanol during catalysis by sodium ethylate.

Zh. Obshch. Khim. 40 (1970),

12, 2665-9

C.A. 74 (1971), 140498

73-14

YAKUSHIN, F.S., VUKMIROVICH, Z., YAKOVLEVA, E.A., KALININ, V.N., ZAKHARKIN, L.I., SHATEN-SHTEIN, A.I.

Kinetic isotopic effect during the hydrogen exchange of m-carboranes with bases.

Kinet. Katal. 11 (1970), 6, 1426-30

C.A. 74 (1971), 41616

The title effect was studied in catalytic exchange of C-D(T) in m-carborane with liquid NH_3 , EtOH, tert-BuOH, catalyzed by alkali alcoholates.

2.1.2 - AROMATIC COMPOUNDS

73-15

ATKINSON, J.G., LUKE, M.O.

Adamantane-d₁₆.

Can. 873,873

C.A. 75 (1971), 129415

The title compound was prepared by H-D exchange reactions over a hydrogenation catalyst.

73-16

GINZBURG, A.G., SETKINA, V.N., KURSANOV, D.N.

Effect of the radical bound to phosphorus in $\text{C}_6\text{H}_5\text{Mn}(\text{CO})_2\text{PR}_3$ complexes on the rate of hydrogen exchange in the ring and the frequency of the carbonyl valence vibration.

Izv. Akad. Nauk SSSR, Ser. Khim. (1971), 1, 177-9

C.A. 75 (1971), 19505

Exchange of H-D in $\text{C}_6\text{H}_5\text{Mn}(\text{CO})_2\text{PR}_3$ (R = cyclohexyl, iso-Pr, Bu, Et, Me, PhCH_2 , p-MeC₆H₅,

Ph, OMe, OPh) was studied at 25° under Ar with $\text{CF}_3\text{CO}_2\text{D}$.

73-17

KANG, J.W., MAITLIS, P.M.

(Pentamethylcyclopentadienyl)-rhodium and -iridium complexes. V. Complexes with oxy-ligands and the exchange of methyl protons by deuterium under basic conditions.

J. Organometal. Chem. 30 (1971), 1, 127-33

C.A. 75 (1971), 63943

$(\text{C}_5(\text{CD}_3)_5\text{Rh})_2(\text{OD})_3\text{Cl}$ was obtained by heating $(\text{C}_5\text{Me}_5\text{Rh})_2(\text{OH})_3\text{Cl}$ with OD^- in D_2O .

73-18

KOPTYUG, V.A., SHELIDER, I.A., ISAEV, I.S., VASIL'EVA, L.V., REZVUKHIN, A.I.

Rearrangement of 4-R-1,2,3,4-tetramethylcyclobutenyl cations into cyclopentenyl ions.

Zh. Org. Khim. 7 (1971), 6, 1089-96

C.A. 75 (1971), 140316

The reaction of CD_3MgI with 4-chloro-1,2,4-trimethyl-3-methylencyclobutene gave its 4-trideuteromethyl-derivative which in strong acids gave a pentamethylcyclobutenyl cation.

73-19

LAMATY, G., ROQUES, A., FONZES, L.

Secondary isotopic effect in a proton transfer reaction. Mobile hydrogen exchange of bicyclo-2,2,2-octanone and pinacolone.

C.R. Acad. Sci., Ser. C 273 (1971), 7, 521-4

C.A. 75 (1971), 129242

The deuteration of the title compounds by NaOD and by DBR

was studied.

73-20

MORRILL, T.C., GREENWALD, B.E.
Stereochemistry and mechanisms of the addition of deuterium chloride to bicyclo(2.2.1)heptadiene (norbornadiene) and to tetracyclo(3.2.0.0².7.0^{4,6})heptane (quadricyclene).

J. Org. Chem. 36 (1971), 19, 2769-73

C.A. 75 (1971), 129081

73-21

RUBIN, M.B., BEN-BASSAT, J.M.
Convenient new method for reduction of quinones and α -diketones.

Tetrahedron Lett. (1971), 37, 3403-6

C.A. 75 (1971), 129138

PhCD(OD)COPh and Ph₂CO were obtained when a mixture of benzil, benzopinacol, D₂O and Decalin was heated.

73-22

TERESHCHENKO, G.F., KOLDOBSKII, G.I., BAGAL, L.I.

Kinetic isotope effect of the Schmidt reaction.

Zh. Org. Khim. 6 (1970), 12, 2633

Chemischer Informationsdienst Organische Chemie (1971), 14, 226

The reaction of NH₃ with 2-hexanone or PhAc in D₂O-D₂SO₄ was 3-6 times as rapid as in H₂O-H₂SO₄.

73-23

TURKINA, M.Ya., GRAGEROV, I.P., DOBYCHIN, S.L.

Reactions of perfluoroalkyl radicals with benzene and cyclohexane.

Zh. Org. Khim. 7 (1971), 7, 1541-2

C.A. 75 (1971), 129102

Perfluoroalkyl radicals reacted with C₆D₆ in C₆H₆ to give RC₆D₅ traces of RC₆H₄D, C₆D₅H and C₄D₄H₂. (R = CF₃, C₂F₅, C₃F₇, iso-C₃F₇).

73-24

WERINGA, W.D.

Mass spectra of spiroalkanones with five- and six-membered rings.

Org. Mass Spectrom. 5 (1971), 9, 1055-72

C.A. 75 (1971), 139920

The fragmentation patterns for the spiro-4.4-nonanones and the spiro-5.5-undecanones were determined by using specific D labelling.

73-25

WHEELER, D.M.S., WARNET, R.J.

Action of acid on photothebainehydroquinone. Stereochemistry of opening of cyclopropanes.

J. Chem. Soc. D (1971), 11, 547

C.A. 75 (1971), 64043

The reaction of photothebainehydroquinone with PCl₃ and D₂O yielded a mixture of two deuterated compounds via cyclopropane ring cleavage.

73-26

WHITESIDES, T.H., ARHART, R.W.

Stereochemistry and mechanism of protonation of diene-iron tricarbonyl complexes.

J. Amer. Chem. Soc. 93 (1971), 20, 5296-8

C.A. 75 (1971), 140129

Reaction of 1,2,3,4-tetrahydro(1-phenyl-3-methyl-3-methyl-

butadiene) with DCl in pentane gives a π -allyl complex in which one D is incorporated into the anti Me group.

73-27

WIBERG, K.B., NAKAHIRA, T.

Solvolysis of trans-fused bicyclo-6.1.0-nonyl-2 derivatives.

J. Amer. Chem. Soc. 93 (1971), 20, 5193-9

C.A. 75 (1971), 139957

The solvolysis of α -deuterium bicyclo-6.1.0-nonyl-2 derivatives was studied and only one of the four isomers gave D scrambling.

73-28

YAKUSHIN, F.S., RANNEVA, Yu.I., MARCHENKO, V.A., ROMANSKII, I.A., SHATENSHTEIN, A.I.

Isotope effect in catalyzed hydrogen exchange reaction.

Kinet. Katal. 12 (1971), 3, 591-4

N.S.A. 26 (1972), 14837

The kinetics and the isotope effect in the system tertiary butanol-methyl sulfoxide was studied using diphenylmethane labelled with deuterium and tritium in the methylene group.

73-29

ZYAKUN, A.M., GRABLIAUSKAS, K., KOST, A.N., ZARETSKII, V.I., VUL'FSON, N.S.

Mass-spectrometric study of phthalazone, phthalazinethione, and products of their methylation.

Izv. Akad. Nauk SSSR, Ser. Khim. (1970), 10, 2208-15

C.A. 74 (1971), 14037

1(2D)-Phthalazone, 2-methyl-

d₃-1(2H)-phthalazone and the corresponding thiones were prepared with D₂O or CD₃I.

2.1.3 - HETEROCYCLIC COMPOUNDS

73-30

CHOTARD, J.C., JULIA, M.

Mechanism of the formation of Tetralin derivatives from aryl-butyl radicals.

Tetrahedron Lett. (1971), 27, 2561-4

C.A. 75 (1971), 62787

The decomposition of deuterated 5-(α -naphthyl) valeric acids with Pb(OAc)₄ gave 1,8,9,10-tetrahydrophenanthrene-1,1-d₂, 1,8,9,10-tetrahydrophenanthrene-8,8-d₂, and pleiadene-10,10-d₂.

73-31

GRAM, D.J., ROITMAN, J.N.

Electrophilic substitution at saturated carbon. XLV. Dissection of mechanisms of base-catalyzed hydrogen-deuterium exchange of carbon acids into inversion, isoinversion, and racemization pathways.

J. Amer. Chem. Soc. 93 (1971), 9, 2225-31

C.A. 75 (1971), 4964

The stereochemical course of base-catalyzed H-D exchange between carbon acid and hydroxylic solvents was studied.

73-32

CROMWELL, N.H., GLAROS, G.

Mobile keto allyl systems. X. Thermal decomposition of 2-(*o*-methylbenzal)-3-amino-4,4-dimethyl-1-tetralones.

J. Org. Chem. 36 (1971), 20, 3033-8

C.A. 75 (1971), 140022

The title compounds were deuterated.

73-33

GRONOWITZ, S.

Tautomerism in the hydroxythiophene and hydroxyfuran systems.

Quantum Aspects Heterocycl. Compounds Chem. Biochem., Proc. Int. Symp., 2nd (1969), 339-48

C.A. 75 (1971), 140096

Thermodynamic parameters for D exchange and isomerization are given for a wide variety of hydroxythiophenes and hydroxyfurans.

73-34

MARSHALL, D.R., BUTLER, A.R., LLOYD, D.

Diazepines. XIII. Relative reactivities of positions 5 and 6 in electrophilic substitution reactions of 2,3-dihydro-1,4-diazepinium salts measured by deuterium exchange kinetics.

J. Chem. Soc. B (1971), 5, 795-7

C.A. 75 (1971), 4962

2.1.4 - CARBOHYDRATES

73-35

CORNEIL, I.C.

Affinity labelling studies on antibodies to a polysaccharide antigen and to a carbohydrate hapten.

Univ. California, Berkeley (1969), 123 pp.
Order n° 70-17536

C.A. 75 (1971), 33001

73-36

HABERLAND, G., MAERTEN, G.

Deuterated or tritiated cardenolides and cardenolide glycosides.

Ger. Offen. 1,959,064

C.A. 75 (1971), 130092

21,21,22-Trideuteriodigitoxigenin was obtained by heating digitoxigenin and triethylene-diamine in deuterioethanol 12 hrs at 80° followed by addition of excess HOAc, concentration and crystallization from EtOH-H₂O.

2.1.5 - PEPTIDES, AMINO ACIDS, PROTEINS

73-37

BHASKAR, K.R., PARKER, F.S.

Infrared study of the hydrogen-deuterium exchange of α -chymotrypsin and its diisopropylphosphoryl derivative.

J. Biol. Chem. 245 (1970), 13, 3302-4

The title exchange was studied at 22 ± 1° at several pH values ranging from 2 to 6.

73-38

COHEN, J.S., FEIL, M., CHAIKEN, I.M.

Proton magnetic resonance studies of the tyrosine residues of staphylococcal nuclease using (3,5-²H₂)tyrosine.

Biochim. Biophys. Acta 236 (1971), 2, 468-78

C.A. 75 (1971), 45114

Tyrosyl nuclease-3,5-²H₂ was prepared containing all 7 tyrosine residues deuterated in positions ortho to the OH group.

73-39

KAI, K., WATAYA, Y., HAYATSU, H.

Bisulfite-catalyzed isotope labelling of cytidine 5'-phosphate at its 5 position.

J. Amer. Chem. Soc. 93 (1971), 8, 2089-90

C.A. 74 (1971), 142270

Cytidine and cytidine 5'-phosphate were labelled with D or T at their 5 position by dissolution of Na₂ cytidine 5'-phosphate in D₂O (or T₂O) followed by addition of (NH₄)₂-SO₃·H₂O and NaHSO₃.

73-40

MILLER, M.S.

Hydrogen-deuterium exchange of amide groups incorporated into polymeric systems.

Evanston Univ. (1971), 111 pp. Univ. Microfilms Order 71-30893

N.S.A. 26 (1972), 14855

The title exchange is slowed by the macromolecular environment.

73-41

THANASSI, J.W.

General procedure for the preparation of deuterated and tritiated amino acids by incorporation of solvent isotope during synthesis.

J. Org. Chem. 36 (1971), 20, 3019-21

C.A. 75 (1971), 141141

The procedure involves incorporation of solvent isotopes of H into the α -position of amino acids concomitant with decarboxylation of the substituted aminomalonate precursors NH₂CR(COOH)₂.

2.1.6 - STEROIDS

2.1.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

73-42

HAULABA, E., ABDEL-WAHAB, E.M.

Catalytic studies of the gaseous exchange reaction H₂/HDO using platinum on charcoal.

Z. Anorg. Allg. Chem. 338 (1972), 2, 169-76

N.S.A. 26 (1972), 30779

The kinetics and mechanism of the title reaction are discussed.

2.2 - TRITIUM COMPOUNDS

2.2.0 - GENERAL

73-43

MOSKALEV, Yu.I.

Tritium oxide.

Okis' Tritiya, Atomizdat, Moscow (1968), 360 pp.

N.S.A. 26 (1972), 33808

2.2.1 - ALIPHATIC COMPOUNDS

73-44

FISCHER, H.A., SEILER, N., WERNER, G.

Syntheses of differently tritiated putrescines.

J. Label. Compounds 7 (1972), 2, 175-7

1,4-, 1,2,3,4-, and 2,3-tritiated putrescine were obtained by hydrogenation of NCCH₂CH₂CN, trans-NCCH:CHCN, and H₂NCH₂C(CH₂)₂NH₂ respectively in alcoholic HCN with H-T.

73-45

HAGEN, G.A., DIUGUID, L.I., KLIMAN, B., STANBURY, J.B.

Double-isotope derivative assay

of serum iodothyronines. II. Thyroxine.

Anal. Biochem. 38 (1970), 2, 517-28

Biological Abstr. 52 (1971), 71711

Tritium-labelled acetic anhydride was used to make a derivative of the unknown T4 (thyroxine) which was purified and counted.

2.2.2 - AROMATIC COMPOUNDS

73-46

DRAHOWZAL, F.A., WIESINGER, F.

Preparation of radioactive organic compounds. II. L-3-methoxy-3H- ω -(1-hydroxy-1-phenylisopropylamino)propiofenone hydrochloride.

Justus Liebigs Ann. Chem. 745 (1971), 20-2

Chemischer Informationsdienst Organische Chemie (1971), 28, 211

Radiochemically pure m-CT₃OC₆-H₄Ac was prepared by methylation of m-HOC₆H₄Ac with CT₃I. The title compound was obtained by reaction of m-CT₃OC₆H₄Ac with HCHO and l-norephedrine.

73-47

HERBAI, G.

Double isotope method for determination of the miscible inorganic sulfate pool of the mouse applied to in vivo studies of sulfate incorporation into costal cartilage.

Acta Physiol. Scand. 80 (1970), 4, 470-91

C.A. 74 (1971), 39043

Phenol-³H and sulfate-³⁵S mixed with suitable amounts of carrier are given to mice and the

tagged phenyl sulfate formed is isolated from the urine.

73-48

LEDER, O., HARMS, E., KAMMERMEIER, H.

Uptake and storage of ¹⁴C- and ³H-labelled norepinephrine in rats.

Histochemie 24 (1970), 2, 130-41

C.A. 74 (1971), 50202

The incorporation of ¹⁴C- or ³H-labelled noradrenaline in the adrenal medulla and sympathetic adrenergic plexus of rats was studied.

73-49

SCHERRER, F., AZERAD, R.

Menaquinone cis-trans isomerism and oxidative phosphorylation in Mycobacterium phlei extracts.

Experimentia 26 (1970), 11, 1201-3

C.A. 74 (1971), 10607

Double labelled dihydromenaquinone-9 was obtained by incubation of *M. phlei* washed cells with ¹⁴C and ³H double-labelled L-methionine.

73-50

STREITWIESER, A.Jr., ZIEGLER, G.R.

Acidity of hydrocarbons. XXXVI. Kinetic acidity of 2,2-paracyclophane.

Tetrahedron Lett. (1971), 5, 415-8

C.A. 74 (1971), 140654

2,2-Paracyclophane-4-t was prepared by metalating 4-bromo-2,2-paracyclophane with BuLi in ether at 0° and quenching with tritiated water. 2,2-Paracyclophane-1-t was prepared by the method of Winberg.

73-51

VAN TILBORG, H., DE BRUIJN, J.,
GOTTENBOS, J.J., KOCH, G.K.

Metabolism of o-alkylbenzene-
alkanoic acids in rats.

J. Amer. Oil Chem. Soc. 47
(1970), 11, 430-7

C.A. 74 (1971), 11149

7 different o-alkylbenzene-
alkanoic acids were labelled
with ^3H in the aromatic ring
by isotopic exchange.

See also:

73-28 Isotope effect in ca-
lyzed hydrogen exchange
reaction.

2.2.3 - HETEROCYCLIC COMPOUNDS

73-52

COBET, M., LUCKNER, M.

2,4-Dihydroxyquinoline, a di-
rect intermediate in the bio-
synthesis of the furoquinoline
alkaloids, skimmianines, in
Ruta graveolens.

Phytochemistry 10 (1971), 5,
1031-6

C.A. 75 (1971), 45687

The incorporation of radioac-
tively labelled 2,4-dihydroxy-
quinoline into skimmianines
was studied.

73-53

NERY, R.

Metabolic interconversion of
arecoline and arecoline 1-
oxide in the rat.

Biochem. J. 122 (1971), 4,
503-8

C.A. 75 (1971), 33423

The metabolism of tritium-
labelled arecoline-HCl by the
rat yielded ^3H -labelled are-
coline 1-oxide, arecaidine

1-oxide, arecaidine, N-acetyl
-S-(3-carboxy-1-methylpiperid
-4-yl)-L-cysteine.

73-54

TOMLINSON, R.V., TORRENCE, P.
F., TIECKELMANN, H.

Biosynthesis of the pyrimi-
dine and thiazole moieties of
thiamine.

Methods Enzymol. 18 (1970),
Pt A, 182-94

C.A. 74 (1971), 135359

A technique for biosynthesis
of ^{14}C -, ^3H -, or ^{35}S -labelled
pyrimidine and thiazole moi-
eties of thiamine is described.

2.2.4 - CARBOHYDRATES

See also:

73-35 Affinity labelling stu-
dies on antibodies to a poly-
saccharide antigen and to a
carbohydrate hapten.

2.2.5 - PEPTIDES, AMINO ACIDS, PROTEINS

73-55

ADDISON, G.M., HALES, Ch.N.

Two site assay of human
growth hormone.

Horm. Metab. Res. 3 (1971),
1, 59-60

C.A. 75 (1971), 45152

The preparation of a radio-
labelled antibody is des-
cribed.

73-56

AEBI, H.

Radioactive and stable iso-
topes as tools of the bio-
chemist.

Nucl.-Med. Suppl. (1968), 8,
249-56

C.A. 75 (1971), 45447

Transmethylation with methionine containing ^3H and ^{14}C in the Me group, the use of ^3H as a labelling device and the coupled oxidation of $\text{H}^{14}\text{CO}_2\text{Na}$ and $^2\text{H}^{14}\text{CO}_2\text{Na}$ by catalase are reviewed.

73-57

BARKER, G.R., HARDMAN, N., TWOSE, T.M.

Radioactive labelling of multiple-drug-resistance factor in *Escherichia coli*.

Biochem. J. 122 (1971), 5, 48p-49p

C.A. 75 (1971), 45548

A modified Freifelder and Freifelder method was presented for labelling the DNA of a fertility-depressed multiple-drug-resistance factor (R-factor).

73-58

BREMER, K., FLEIDNER, D.M.

In vitro uptake of cytidine in human blood lymphocytes.

Rev. Eur. Etud. Clin. Biol. 16 (1971), 1, 19-26

C.A. 74 (1971), 137796

It was shown that cytidine- ^3H is a suitable RNA label for human blood lymphocytes.

73-59

CUATRECASAS, P., ILLIANO, G., GREEN, I.

Production of antiglucagon antibodies in poly-L-lysine "responder" guinea pigs.

Nature New Biol. 230 (1971), 10, 60-1

C.A. 75 (1971), 33208

^3H -labelled acetyl glucagon

was prepared by ^3H -acetylation of poly-D-lysine-glucagon.

73-60

DOBBS, H.E., HALL, J.M., STEIGER, B.

Enterohepatic circulation of etorphine, a potent analgesic, in the rat.

Proc. Eur. Soc. Study Drug Toxicity (1969), 11, 73-9

C.A. 75 (1971), 33791

6,14-Endo-etheno-7-(1-R-hydroxy-1-methylbutyl)6,7,8,14 tetrahydrooripavine- ^3H was prepared by injecting etorphine- ^3H into rats and collecting bile.

73-61

GREGGERMAN, R.I., KOWATCH, M.A.

Double isotope derivative assay for angiotensin. I. Use for renin measurement.

J. Clin. Endocrinol. Metab. 32 (1971), 1, 110-4

C.A. 74 (1971), 83517

The dinitrophenyl (DNP) derivative was produced by reacting fluorodinitrobenzene- ^3H with angiotensin I (decapeptide).

73-62

HAMBERG, M., ISRAELSSON, U., SAMUELSSON, B.

Metabolism of prostaglandin E_2 in guinea pig liver.

Ann. N.Y. Acad. Sci. 180 (1971), 164-80

C.A. 75 (1971), 45214

^3H -labelled prostaglandin E_2 and ^3H -labelled prostaglandin F_{2a} were prepared.

73-63

HAYLETT, T., SWART, L.S., PARRIS, D.

High-sulfur proteins of reduced Merino wool. Amino acid sequence of protein SCMKB-IIIB₃.

Biochem. J. 123 (1971), 2, 191-200

C.A. 75 (1971), 44899

C-terminal residues of protein SCMKB-IIIB₃ were tritiated.

73-64

LAU, I.F., KONG, V.C.

Deoxycytidine-stimulated basic protein synthesis in amphibian oocytes.

Exp. Cell Res. 64 (1971), 1, 77-82

C.A. 74 (1971), 84524

The incorporation of tritiated lysine into nucleoproteins extract was stimulated by deoxycytidine. The major part of the label was confined to a dibasic amino acid-rich protein.

73-65

LAUSCHKE, U., LODEMANN, E., WACKER, A.

Tritium labelling of purine polyribonucleotides.

Frankfurt Univ.

The title compounds were tritiated in the 8-position of the purine ring by heating in tritiated water.

73-66

LEE, V.F., GORDON, M.P.

In vitro labelling of polynucleotides by photoreduction.

Biochim. Biophys. Acta 238 (1971), 2, 174-9

Tritiated DNA and RNA were rapidly and economically obtained by treatment with NaB²H₄ in the presence of uv irradiation.

73-67

LENNERT, K., MITROU, P., MUELLER-HERMELINK, H.K.

Cytophotometric and autoradiographic investigations of germinal center cells in man.

Advan. Exp. Med. Biol. 5 (1969), 65-71

C.A. 74 (1971), 137644

The RNA and protein metabolism of cytophotometrically corresponding cells were labelled with uridine-³H and leucine-³H respectively.

73-68

LJUNGDAHL, A., HOKFELT, T., JONSSON, G., SACHS, Ch.

Autoradiographic demonstration of uptake and accumulation of ³H-6-hydroxydopamine in adrenergic nerves.

Experientia 27 (1971), 3, 297-9

C.A. 75 (1971), 18159

It was shown by autoradiography and fluorescence micrography of isolated mouse iris incubated with the title compound that the label was accumulated in adrenergic nerves.

73-69

MACMANUS, J.P., WHITFIELD, J.F., BRACELAND, B.

Metabolism of exogenous cyclic AMP at low concentrations by thymic lymphocytes.

Biochem. Biophys. Res. Commun. 42 (1971), 3, 503-9

C.A. 75 (1971), 2337

The incorporation of tritiated or ³²P-labelled 3',5'-cyclic AMP into isolated thymic lymphocytes was studied.

73-70

MARTY, F., COULON, J., BUSSON, F.

Incorporation of tritiated thymidine, uridine, and leucine into the blue alga, *Spirulina platensis*.

C.R. Acad. Sci., Ser. D 272 (1971), 15, 2021-4

C.A. 75 (1971), 15762

The localization in situ of nucleoplasmic areas, place of RNA synthesis, site of amino acid incorporation were studied.

73-71

NORTH, R.J.

Methyl green-pyronine for staining autoradiographs of hydroxyethyl methacrylate-embedded lymphoid tissue.

Stain Technol. 46 (1971), 2, 59-62

C.A. 74 (1971), 136270

Cells in the spleen in DNA synthesis were labelled with tritiated thymidine.

73-72

OTTEN, J., JONCKHEER, M.

In vitro synthesis of thyroalbumin by human thyroid slices.

Nucl.-Med. Suppl. (1968), 8, 239-40

C.A. 75 (1971), 46384

Normal human thyroid slices incubated in vitro incorporate leucine-³H into thyroalbumin.

73-73

PANCHEVA-GOLOVINSKA, S., ATANASOVA-KRUSTEVA, M., MANOLOVA, N.

Autoradiographic study of the influence of azarotic acid on the incorporation of ³H-thymidine in cell culture infected with Aujeszky's virus.

Dokl. Bolg. Akad. Nauk 24 (1971), 1, 123-6

C.A. 74 (1971), 136971

The incorporation of ³H-thymidine into the nuclei in the presence of azarotic acid was followed by autoradiography of fixed cultures.

73-74

BIOU, G., GUERINEAU, M., DELAIN, E., PAOLETTI, C.

Use of radioactive tracers in the study of pharmacological agents (particularly ethidium hydrobromide) acting at the level of mitochondrial and kinetoplasmic DNA.

Symp. Progr. Techn. Nucl. Pharmacodyn. (1970), 183-201

C.A. 75 (1971), 33403

Data are given on the uptake of ³H-thymidine into mitochondrial and nuclear DNA of yeast.

73-75

SAMPLE, W.F., CHRETIEN, P.B.

Thymidine kinetics in human lymphocyte transformation. Determination of optimal labelling conditions.

Clin. Exp. Immunol. 9 (1971), 3, 419-27

C.A. 75 (1971), 138393

Optimal conditions for assessing rate of DNA synthesis by incorporation of labelled thymidine in human lymphocytes were determined.

73-76

SIMMONS, D.J., KUNIN, A.S.

RNA and mucopolysaccharide metabolism in rachitic cartilage and bone.

Isr. J. Med. Sci. 7 (1971), 3, 412-3

C.A. 75 (1971), 2926

Incorporation of uridine-³H in

RNA and incorporation of sulfate- ^{35}S in mucopolysaccharide was studied in vivo.

73-77

SPIRA, O., GORDON, A., GROSS, J.

Fractionation of 3-8 S iodo-compounds of the rat thyroid. I. Dialyzable and nondialyzable iodo-compounds.

Acta Endocrinol. (Copenhagen) 67 (1971), 2, 225-40

C.A. 75 (1971), 30645

All 4 iodoproteins of the nondialyzable fraction incorporated in vitro leucine- ^3H .

73-78

THEAKSTON, R.D.G., FLETCHER, K.A., MAEGRAITH, B.G.

Use of electron microscope autoradiography for examining the uptake and degradation of hemoglobin by Plasmodium berghei.

Ann. Trop. Med. Parasitol. 64 (1970), 1, 63-71

C.A. 74 (1971), 11276

The incorporation of ^{55}Fe , ALA- ^3H , glycine- ^3H and leucine- ^3H into hemozoin and hemoglobin was studied using electron microscope autoradiography.

73-79

TORK, I.

Autoradiography of the subcommissural organ and the subfornical organ using ^{35}S - and ^3H -labelled methionine.

Zirkumventrikulaere Organe Liquor, Ber. Symp. (1968), 65-8

C.A. 74 (1971), 11093

Labelling patterns obtained with ^3H -labelled $-\text{CH}_3$ and methionine- ^{35}S differed.

73-80

TSHITENGE, G., LEDOUX, L.

Preparation, description, and properties of ^3H -DNA- ^{125}I -ribonuclease complexes.

Peaceful Uses At. Energy Afr., Proc. Symp. (1969), 283-95

C.A. 75 (1971), 30009

The title compound was obtained when tritiated bacterial DNA and pancreatic RNase labelled with ^{125}I were mixed at a high ionic strength and neutral pH, and dialyzed against 0.009 M NaCl.

73-81

UEDA, K., YAMAMURA, H.

Preparation of various labelled NAD's.

Methods Enzymol. 18 (1971), Pt B, 60-7

C.A. 75 (1971), 30035

The following compounds were prepared: NAD- ^{32}P evenly labelled in both phosphate groups, NAD labelled with ^{14}C in the adenine ring, NAD carrying ribose- ^{14}C in the NMN group and NAD-nicotinamide- ^3H .

73-82

VAN HEYDEN, H.W., ZACHAU, H.G.

Characterization of RNA in fractions of calf thymus chromatin.

Biochim. Biophys. Acta 232 (1971), 651-60

Genetic Abstr. 03 (1971), G, 11058

Tritiated tRNA and RNA were obtained by treatment with NaB^3H_4 .

73-83

WEINHOLD, P.A., SANDERS, R.D.
Phospholipid metabolism during the development of the liver. Incorporation of 1,2-¹⁴C-ethanolamine, 2-³H myo-inositol, and L-U-¹⁴C-serine into phospholipids by liver slices.

Biochemistry 10 (1971), 6, 1090-6

C.A. 74 (1971), 137666

Radioactively labelled ethanolamine and myo-inositol were incorporated intact into ethanolamine phosphoglyceride and inositol phosphoglyceride respectively.

73-84

WHUR, P., WEATHERHEAD, B.

Rates of incorporation of ³H-leucine into protein of the pars intermedia of the pituitary in the amphibian *Xenopus laevis* after change of background color.

J. Endocrinol. 51 (1971), 3, 512-32

C.A. 75 (1971), 138073

The rates of incorporation were assessed either by liquid scintillation counting of Cl₃CCO₂H precipitates or quantitative analysis of autoradiographs.

73-85

WILLIAMSON, R., MORRISON, M., PAUL, J.

Hybridization with deoxyribonucleic acid of messenger ribonucleic acid for mouse globin.

Biochem. J. 119 (1970), 5, 60P

C.A. 74 (1971), 38294

Purified mRNA for mouse globin was isolated and labelled with Me₂SO₄-³H.

73-86

ZIEVE, F.J., GUTMANN, H.R.

Reactivities of the carcinogens N-hydroxy-2-fluorenyl-acetamide and N-hydroxy-3-fluorenylacetamide with tissue nucleophiles.

Cancer Res. 31 (1971), 4, 471-6

C.A. 75 (1971), 3043

The binding of 9-¹⁴C- and 9-³H-labelled title compounds to transfer RNA was investigated.

See also:

73-39 Bisulfite-catalyzed isotope labelling of cytidine 5'-phosphate at its 5-position.

73-41 General procedure for the preparation of deuterated and tritiated amino acids by incorporation of solvent isotope during synthesis.

2.2.6 - STEROIDS

73-87

KNAPP, F.F., NICHOLAS, H.J.

Biosynthesis of 31-norcycloolaudenone in *Musa sapientum*.

Phytochemistry 10 (1971), 1, 97-102

C.A. 74 (1971), 136484

The incorporation of 2-¹⁴C-(4R)-4-³H-labelled mevalonic acid into the title compound in *Musa sapientum* indicated initial removal of the 4 α -Me group of the 4,4-dimethyl triterpene precursor.

73-88

MILEWICH, L., AXELROD, L.R.

Pregnenolone-17 α -³H. Synthesis and study of label distribution.

J. Label. Compounds 7 (1972), 2, 101-10

The title compound was prepared by reaction of 17α -bromopregnenolone with tritiated acetic acid on Zn metal dust.

73-89

SPRINGER, C., ECKSTEIN, B.

Regulation of production in vitro of 5α -androstane- 3α , 17β -diol in the immature rat ovary.

J. Endocrinol. 50 (1971), 3, 431-9

C.A. 75 (1971), 30722

Tritiated progesterone, androstenedione, testosterone, and 5α -androstene- 3α , 17β diol were obtained in radiochemical pure form with pregnenolone- 7α - $3H$ as radioactive precursor.

73-90

STARKA, L., BREUER, H.

Mechanism of aromatization of tritiated 19-hydroxy-4-androstene- 3 - 17 -dione by the microsomal fraction of human placenta.

Endocrinol. Exp. 4 (1970), 4, 201-6

C.A. 75 (1971), 30671

Tritiated estrone and 17β -estradiol were obtained by the enzymic aromatization of the title compound.

73-91

VAN CANTFORT, J.

Participation of the endogenous substrate in the in vitro 7α -hydroxylation of cholesterol.

Arch. Int. Physiol. Biochim. 79 (1971), 1, 210-2

C.A. 75 (1971), 138403

Cholesterol- $1,2$ - $3H$ and 4 - $14C$ were used to study the contribution of endogenous chole-

sterol to the activity of 7α -hydroxylase.

2.2.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

73-92

ARMSTRONG, F.E., EVANS, G.C., FLETCHER, G.E.

Tritiated water as a tracer in the dump leaching of copper.

BM-RI-7510 (1971), May, 44 pp.

U.S. Government Res. Dev. Rep. (1971), 15, 101A

Tritiated water was used as a tracer to follow the path of leach liquids.

73-93

CAILLOT, A.

Methods of labelling sediments with radioactive tracers.

Houille Blanche 25 (1970), 7, 661-71

Index Litt. Nucl. Franç. (1971), 9494

73-94

TURNOCK, A.C., BRYKS, S., BERTALANFFY, F.D.

Synthesis of tritium-labelled asbestos for use in biological research.

Environ. Res. 4 (1971), 2, 86-94

C.A. 75 (1971), 45539

Natural chrysolite was maintained in the presence of tritiated water at 300° for 20 days to produce an exchange of structural hydroxyl with tritium-oxyis (O^3H).

73-95

WARD, M., SORENSEN, R.M.

A method of tracing sediment movement on the Texas Gulf Coast.

COM-71-00694 (1970), Dec.,
120 pp.

U.S. Government Res. Dev. Rep.
(1971), 15, 096A

The sediments were coated with
acrylic lacquer, fluorescent
material and resin.

2.3 - CARBON-14 COMPOUNDS

2.3.0 - GENERAL

2.3.1 - ALIPHATIC COMPOUNDS

73-96

KOGAN, N.A., NUROVA, I.M.,
FEL'DMAN, I.Kh.

Synthesis of bis(2-chloroethyl-
1-¹⁴C)amine from carbon-14-
labelled sodium cyanide.

Zh. Prikl. Khim. (Leningrad)
44 (1971), 7, 1665-7

C.A. 72 (1971), 140166

Ethanolamine-1-¹⁴C was pre-
pared by treating Na¹⁴CN with
HCHO and reducing the product
with LiAlH₄. The title com-
pound was obtained by treating
ethanolamine-1-¹⁴C with ethyl-
ene oxide to give diethanol-
amine-1-¹⁴C which was treated
with SOCl₂-C₆H₆.

73-97

RAADSCHELDERS-BUIJZE, C.

Synthesis of double labelled,
high activity (1,2-¹⁴C)-pro-
pane.

Radiochem. Radioanal. Lett. 7
(1971), 5/6, 351-9

C.A. 72 (1971), 140158

Propane-1,2-¹⁴C was prepared
from labelled acetylene obtain-
ed from BaCO₃ of high specific
activity, following the method
of Cox and Warne.

73-98

SCHELENZ, R., FISCHER, E.

Carbon-14-labelled pyrocarbon-
ic acid diethyl ester. III.
Hydrolysis and alcoholysis.

Z. Lebensm.-Unters.-Forsch.
145 (1971), 5, 279-88

C.A. 72 (1971), 4940

The kinetics of the title com-
pound hydrolysis in water were
studied with pyrocarbonic acid
diethyl ester-(carbonyl-¹⁴C).

2.3.2 - AROMATIC COMPOUNDS

73-99

GENSLE, W.J., SOLOMON, D.M.,
YANASE, R., POBER, K.W.

Syntheses of carbon-14-label-
led methyl malvalates.

Chem. Phys. Lipids 6 (1971),
2, 280-90

C.A. 72 (1971), 30866

Methods for preparing malvalic-
1-¹⁴C, -10-¹⁴C, and -9-¹⁴C are
described.

73-100

KRATZL, K., VIERHAPPER, F.W.

Specifically ring-carbon-14-
labelled phenol derivatives.
II. Synthesis of ¹⁴C-vanillins
and ¹⁴C-bicresols.

Monatsh. Chem. 102 (1971), 2,
425-30

Chemischer Informationsdienst
Organische Chemie (1971), 27,
249

Vanillin ¹⁴C-labelled in the
4-, 3-, or 6-position was pre-
pared by formylation of 1-, 2-,
or 5-¹⁴C-labelled guaiacol. Bi-
cresol ¹⁴C-labelled in the
2,2'-, 3,3'-, or 6,6'-position
was prepared by dimerization
with Na persulfate, followed

by Huang-Minlon reduction of dehydrodivanillin.

73-101

LEE, C.C., LAW, J.

Protonated cyclopropanes. VI. Solvolyses of 1-¹⁴C-1-propylmercuric perchlorate.

Can. J. Chem. 49 (1971), 16, 2746-8

C.A. 75 (1971), 129064

The title solvolyses in 10% dioxane-90% H₂O, HOAc, or HCO₂H gave, respectively, about 0.6, 2.5, or 3.5% isotopic scramblings.

73-102

TAMAO, M., TERASHIMA, N.

Chemical structure of kraft lignin. IV. Treatment of dehydrodiconiferyl alcohol under sulfate cooking condition.

Mokuzai Gakkaishi 17 (1971), 1, 10-5

C.A. 75 (1971), 50610

Dehydrodiconiferyl alcohol-β,-β'-¹⁴C and -γ,γ'-¹⁴C were formed by methylation and oxidation of the sulfate pulping products.

See also:

73-48 Uptake and storage of ¹⁴C- and ³H-labelled norepinephrine in rats.

73-49 Menaquinone cis-trans isomerism and oxidative phosphorylation in *Mycobacterium phlei* extracts.

2.3.3 - HETEROCYCLIC COMPOUNDS

73-103

ADAMS, C.A., WARNES, G.M., NICHOLAS, D.J.D.

Preparation of labelled adenosine 5'-phosphosulfate using

APS (adenosine 5'-phosphosulfate) reductase from *Thiobacillus denitrificans*.

Anal. Biochem. 42 (1971), 1, 207-13

C.A. 75 (1971), 44845

The title compound labelled with either ¹⁴C or ³⁵S was prepared by incubation of AMP, Na₂SO₃, and K₂Fe(CN)₆ with APS reductase from *T. denitrificans*.

73-104

BROEKHUYSEN, J., SION, R., PACCO, M., DELTOUR, G.

Transport and metabolism of various labelled hydroxybenzoylbenzofuran derivatives.

Symp. Progr. Tech. Nucl. Pharmacodyn. (1970), 153-9

C.A. 75 (1971), 33371

73-105

KOPECKY, J.J., HOLY, A.

Preparation of 1-(β-D-ribofuranosyl)-2-pyrimidinone-2-¹⁴C.

Radiochem. Radioanal. Lett. 7 (1971), 5/6, 361-6

C.A. 75 (1971), 141099

The title synthesis involves condensation of the Na salt of 2-hydroxypyrimidine-2-¹⁴C with 5-O-(p-methoxyphenyl)diphenylmethyl-2-O-p-tolylsulfonyl-D-arabinose and the subsequent acidic removal of protecting groups.

73-106

LINTERMANS, J., BENAKIS, A., HERBERT, M., PICHAT, L.

Synthesis of carbon-14-labelled 1-(2-pyrimidinyl)-4-(3,4-methylenedioxybenzyl)piperazinium metasulfonate.

Helv. Chim. Acta 54 (1971), 6, 1713-8

Chemischer Informationsdienst
Organische Chemie (1971), 47,
350

The title compound was prepared
from 1-bromo-3,4-methylenedi-
oxybenzene.

73-107

MODENA, G., CAPOZZI, G.,
MELLONI, G.

Reactivity of vinyl sulfonic
esters. VIII. Evidence for sul-
fur participation in the cyc-
lization of 2-(arythio)-1,2-
diphenylvinyl p-bromobenzene-
sulfonates from carbon-14
labelling experiments.

J. Chem. Soc. C (1971), 18,
3018-20

C.A. 75 (1971), 129062

The title compounds were pre-
pared and cyclized to 2,3-di-
phenylbenzo(b)thiophene de-
rivatives.

See also:

73-54 Biosynthesis of the pyri-
midine and thiazole moieties
of thiamine.

2.3.4 - CARBOHYDRATES

See also:

73-35 Affinity labelling studies
on antibodies to a poly-
saccharide antigen and to a
carbohydrate hapten.

73-81 Preparation of various
labelled NAD's.

2.3.5 - PEPTIDES, AMINO ACIDS, PROTEINS

73-108

FRIEDMANN, H.C.

Preparation of DPN⁺ and MMN
labelled with carbon-14 in the
pyridine moiety.

Methods Enzymol. 18 (1971),
Pt B, 51-5

C.A. 75 (1971), 30021

¹⁴C-labelled DPN⁺ was obtained
by conversion of nicotinic acid
-7-¹⁴C by intact Propionibac-
terium shermanii and purified
by elution from DOWEX 1 and
Sephadex columns.

73-109

PICHAT, L., TOSTAIN, J.,
BARET, C.

Synthesis of DL-lysine-6-¹⁴C
from ¹⁴C-labelled sodium cy-
anide and α -benzamido- Δ -va-
lerolactone.

Bull. Soc. Chim. France (1970),
5, 1837-8

Index Litt. Nucl. Franç. (1970),
6899

The title compound was prepared
by reaction of Na¹⁴CN with α -
benzamido- Δ -valerolactone,
followed by hydrogenation.

73-110

SZPIRER, C.

Comparison of the cysteine-con-
taining peptides from rabbit
antitobacco mosaic virus anti-
body and nonspecific immuno-
globulin G by peptide mapping.

Immunology 20 (1970), 2, 137-40

C.A. 75 (1971), 33048

Carboxymethylcysteine contain-
ing peptides of Fd' fragments
and light chains were labelled
with iodoacetic acid-¹⁴C.

73-111

UEDA, K., YAMAMURA, H.,
NISHIZUKA, Y.

Preparation of labelled pyri-
dine ribonucleotides and ribo-
nucleosides.

Methods Enzymol. 18 (1971),
Pt B, 55-60

C.A. 75 (1971), 30036

Nicotinate- ^{14}C ribonucleotide was prepared from commercial nicotinate- ^{14}C and 5-phosphoribosyl-1-pyrophosphate (PRPP) with the use of nicotinate phosphoribosyltransferase. Nicotinate ribonucleotide- ^{32}P was prepared from PRPP- ^{32}P and nicotinate.

See also:

73-56 Radioactive and stable isotopes as tools of the biochemist.

73-83 Phospholipid metabolism during the development of the liver. Incorporation of 1,2- ^{14}C -ethanolamine, 2- ^3H myo-inositol, and L-U- ^{14}C -serine into phospholipids by liver slices.

73-86 Reactivities of the carcinogens N-hydroxy-2-fluorenylacetamide and N-hydroxy-3-fluorenylacetamide with tissue nucleophiles.

2.3.6 - STEROIDS

See also:

73-87 Biosynthesis of 31-norcyclo-laudenone in *Musa sapientum*.

73-91 Participation of the endogenous substrate in the in vitro 7α -hydroxylation of cholesterol.

2.3.7 - MINERAL COMPOUNDS AND MISCELLANEOUS COMPOUNDS

73-112

DOMINEY, D.A., WICKHAM, A.J.

Radiation induced isotope exchange in the CO-CO₂ system. III. The mechanism of the reaction in silica vessels.

CEGB-RD-B-N 1814 (1970), 26 pp.

Bull. Signal. Sect. 150, 32 (1971), 15520

The following exchanges were studied: ^{12}C - ^{13}C , ^{12}C - ^{14}C , and ^{16}O - ^{18}O . The ^{16}O - ^{18}O exchange was studied in the presence of SiO_2 .

2.4 - HALOGEN LABELLED COMPOUNDS

73-113

BEHRENS, H., SVOBODA, K., RECKE, W., GODOY, J., SORIÁNO, A.

Zero-time isotopic exchange in the iodine-alkyl halide system.

Second inter-American Conference on Radiochemistry, Mexico City, 26 Apr. (1968), CONF-680423, 296-8

N.S.A. 26 (1972), 14844

The existence of zero-time isotopic exchange was confirmed in the iodine-n-propyl iodide system in the absence and presence of air.

73-114

BLASCHETTE, A., HAAS, A., KLUG, W.

Pseudohalogen compounds. 13. Heterogeneous chlorine- ^{36}Cl exchange of halogenated organosulfenyl chlorides with silver chloride.

Monatsh. Chem. 101 (1970), 4, 1089-97

C.A. 73 (1970), 92251

The isotopic exchange between solid Ag^{36}Cl and liquid sulfenyl chlorides was studied.

73-115

BOONE, C.W., IRVING, D.N., RUBINSTEIN, S.

Quantitative studies on the binding of antibody to the

surface of HeLa cells.

J. Immunol. 106 (1971), 4,
879-87

A mixture of immune and normal sera was labelled with different iodine radioisotopes.

73-116

DE DEL CARRIL, S.K., LIRES,
O.A., MITTA, A.E.A.

Method for labelling iodobenzene with iodine-¹³¹I.

Radiochim. Acta 15 (1971), 3,
151

Chemischer Informationsdienst
Organische Chemie (1971), 30,
216

The title compound was obtained by reaction of PhI, Na¹³¹I and chloramine T.

73-117

DELLENBACK, R.J., CHIEN, S.

Quantitation of isotope loss with thyrosine loss in the canine fibrogen-fibrin transformation.

Proc. Soc. Exp. Biol. Med. 137 (1971), 3, 751-8

C.A. 75 (1971), 46460

Portions of the highly purified fibrinogen were labelled with ¹³¹I.

73-118

HAOUR, F.

Rapid radioimmunoassay of human chorionic somatomammotropin (HCS or HPL) using dioxane.

Horm. Metab. Res. 3 (1971), 2,
131-2

C.A. 75 (1971), 30658

Standard human chorionic hormone was labelled with radioactive iodine.

73-119

HOYTE, R.M.

Organic radiopharmaceuticals labelled with short-lived nucleides. III. ¹⁸F-labelled phenylalanines.

J. Nucl. Med. 12 (1971), 6,
280-6

C.A. 75 (1971), 47206

73-120

KRAUSS, O., MAIER-BORST, W.,
SINN, H., LORENZ, W.J.,
PRPIC, B., HARBST, H.

Pharmacokinetic studies on the behavior of fluorine-18-labelled compounds on bone scintigraphy.

Nucl.-Med. Suppl. (1968), 8,
339-43

C.A. 75 (1971), 45351

It was shown that ¹⁸F-complexes are better suited for bone scintillography than free fluoride.

73-121

KURCBART, H., COLI, A.,
VANCHERI, L., ROSA, U.

Chemical and biological effects associated with the iodination of angiotensin II.

Biochim. Biophys. Acta 130 (1971), 1, 160-9

C.A. 74 (1971), 83539

Radioiodine-labelled angiotensin was prepared.

73-122

MARK, V., WEIL, E.D.

Isomerization and chlorination of decachlorobi-2,4-cyclopentadien-1-yl.

J. Org. Chem. 36 (1971), 5,
676-85

C.A. 74 (1971), 98483

The title compound was labelled with ^{35}Cl and ^{13}C .

73-123

MORGAN, A., BLACK, A.,
BELCHER, D.R.

Excretion in breath of some aliphatic halogenated hydrocarbons following administration by inhalation.

Ann. Occup. Hyg. 13 (1970),
4, 219-33

C.A. 72 (1971), 3423

Halogenated hydrocarbons were labelled with ^{35}Cl .

73-124

MOSHAJSKI, A.M., KULAKOW,
W.N., STANKO, W.I.

Production of radioactive preparations. I. Optimum conditions of electrophilic albumin iodination.

Isotopenpraxis 7 (1971), 1,
17-20

Physikalische Berichte 50
(1970), 6, 4571

Electrophilic iodination of HSA by a mixture of Na^{131}I and ICl was optimal with a concentration of 0.01 M salts, a 3:4 M ratio of protein:I, and pH of 8.5-9.0.

73-125

SEARS, D.A., REED, C.F.,
HELMKAMP, R.W.

Radioactive label for the erythrocyte membrane.

Biochim. Biophys. Acta 233
(1971), 3, 716-9

C.A. 72 (1971), 45538

Diazotized ^{131}I -diiodosulfanilic acid was prepared and is herein described.

73-126

SHENOY, M.A., JOSHI, D.S.,
SINGH, B.B., GOPAL-AYENGAR,
A.R.

Role of bacterial membranes in radiosensitization.

Advan. Biol. Med. Phys. 13
(1970), 255-71

C.A. 74 (1971), 135994

Experiments on *Escherichia coli* B/7 with ^{131}I in iodoacetic acid and ^{60}Co irradiation showed an incorporation of I at a rate which increased with radiation dosage.

73-127

SHIMOJIMA, H., LIN, T.K.

Inorganic yields of chlorine-38 in Szilard-Chalmers reactions of α -, β -, γ -, and δ -benzene hexachlorides.

J. Nucl. Sci. Technol. 8
(1971), 4, 179-83

C.A. 72 (1971), 19615

The title compounds were irradiated in solid state, in C_6H_6 solution, and in frozen states, and the recoil ^{38}Cl retained was stripped into 0.1 M K_2SO_4 solutions.

73-128

SIROKMAN, F., HAJDU, E.

Investigation of the exchange reactions of cycloalkyl iodides of different ring size with potassium iodide- ^{131}I .

Acta Phys. Chem. 17 (1971),
1/2, 49-54

C.A. 72 (1971), 139977

It was shown that the rate of the title reactions is lower in polar solvent.

SPIRA, O., GORDON, A.,
GROSS, J.

Fractionation of 3-8S iodo-compounds of the rat thyroid. II. Presence and behavior of a thyroidal iodide-binding peptide (TIP).

Acta Endocrinol. (Copenhagen) 67 (1971), 2, 241-8

C.A. 75 (1971), 30644

The dialyzable iodo-compound was the only ^{125}I -labelled compound which was present in propyl-thiouracil-blocked glands.

73-130

URAY, Z., MANIU, M., ONISOR, M., FARCASANU, M., HOLAN, T.

Techniques for the study of the thyroid function in small laboratory animals (mice, rats) by means of radioiodine.

Stud. Cercet. Biol. Ser. Zool. 21 (1969), 3, 273-8

Biological Abstr. 52 (1971), 101097

Radiochromatography analysis of the thyroid hormones in the thyroid gland and in blood plasma is described.

73-131

VALENTA, L., LEMARCHAND-BERAUD, T.

Soluble complexes of radioiodine-labelled human and bovine thyrotropins with their antisera.

Immunochemistry 8 (1971), 1, 121-7

C.A. 74 (1971), 138520

The title compounds were prepared and studied by sucrose-gradient centrifugation, disc-electrophoresis and gel filtration before and after incubation with anti-TSH sera.

73-132

WOODS, J.D., GRUCA, J.A.,
PIETRZAK, C.M.

Comparison of chlorine-36 exchange with K_2ReCl_6 and $\text{Cs}_2\text{ReOCl}_5$.

Proc. Iowa Acad. Sci. 76 (1969), 119-26

C.A. 73 (1970), 91995

See also:

73-80 Preparation, description and properties of ^3H -DNA- ^{131}I -ribonuclease complexes.

2.5 - PHOSPHORUS-32 COMPOUNDS

73-133

AVAEVA, S.M., MEVKH, A.T.

Interaction between yeast inorganic pyrophosphatase and phosphorus-32-labelled N-benzoyl-Ornithinecarboxymethyl-L-phenylalanine.

Mol. Biol. 4 (1970), 5, 730-3

C.A. 74 (1971), 9846

73-134

COHEN, P., BROEKMAN, M.J.,
VERKLEY, A., LISMAN, J.W.W.,
DERKSEN, A.

Quantification of human platelet inositides and the influence of ionic environment on their incorporation of orthophosphate- ^{32}P .

J. Clin. Invest. 50 (1971), 4, 762-72

C.A. 74 (1971), 137645

Study of the incorporation of orthophosphate- ^{32}P into platelet phospholipids was simplified by separating 8 ^{32}P -labelled lipids with a single chromatography development on CH_2O -treated paper.

73-135

KAKIE, T.

Phosphorus metabolism in tobacco plants. Relation between ethanol-soluble phosphorus compounds with respect to photosynthesis and maturity of tobacco leaves.

Hatano Tabako Shikenjo Hokoku (1969), 63, 43-50

C.A. 75 (1971), 1498

The absorption of ^{32}P -labelled compounds in tobacco was studied by paper chromatography and autoradiography.

73-136

OLTHOFF, D., KUNZE, D.

Studies on the incorporation of ^{32}P into phosphatides of skeletal muscle in vitro.

Acta Med. Ger. 25 (1970), 5/6, 805-12

Biological Abstr. 52 (1971), 96730

Rates of ^{32}P incorporation into skeletal muscle phosphatides were studied in vitro.

73-137

STEIN, J.M., HALES, C.N.

Effect of adrenaline and of α - and β -adrenergic blocking agents on phosphorus- 32 incorporation into fat-cell phospholipids.

Biochim. J. 122 (1971), 1, 13P

C.A. 74 (1971), 135768

See also:

73-69 Metabolism of exogenous cyclic AMP at low concentrations by thymic lymphocytes.

73-81 Preparation of various labelled NAD's.

73-103 Preparation of labelled adenosine 5'-phosphosulfate using APS (adenosine 5'-phosphosulfate) reductase from *Thiobacillus denitrificans*.

73-111 Preparation of labelled pyridine ribonucleotides and ribonucleosides.

2.6 - SULFUR-35 COMPOUNDS

73-138

ASPERGER, S., HEGEDIC, D., PAVLOVIC, D., STEFANOVIC, D.

Mechanism of the desulfonylation of phenyl sulfone in molten sulfur.

J. Org. Chem. 36 (1971), 24, 3845-6

N.S.A. 26 (1972), 8842

The reaction between ^{35}S -phenylsulfone and molten sulfur in nitrogen atmosphere at 243 to 297° was studied.

73-139

BERLIER, Y., GUIRAUD, G.

Diffusion and exchange processes in the absorption and utilization of ammonium ions by roots.

C.R. Acad. Sci. Ser. D 27 (1970), 271, 1276-9

C.A. 74 (1971), 10531

The process of radicle absorption of NH_4^+ was determined by exchange of NH_4^+ with $(^{15}\text{NH}_4)_2^{35}\text{SO}_4$.

73-140

CHERKASOVA, I.B.

Dynamics of incorporation of methionine- ^{35}S into the developing myocardium in albino rat.

Tsitol. Genet. 4 (1970), 6, 506-8

C.A. 74 (1971), 137640

The incorporation of methionine-³⁵S was estimated by counting grains of reduced Ag.

73-141

KOVACS, V.

Aspects of the metabolism of ³⁵S-methionine and ⁷⁵Se-methionine in rats. III. Radiochromatographic studies of the distribution of ³⁵S amino acids in the liver, spleen and kidney proteins as a result of X-irradiation.

Rev. Roum. Biochim. 7 (1970), 4, 281-6

Biological Abstr. 52 (1971), 104373

73-142

MARCOTRIGIANO, G., BATTISTUZZI, R.

Isotopic exchange between ³⁵S-thiourea and substituted thioureas.

Atti Soc. Natur. Mat. Modena 99 (1968), 275-80

C.A. 75 (1971) 41188

The title isotopic exchange was studied using ascending chromatographic development.

73-143

SANWALD, R., RITZ, E., WIESE, G.

Acid mucopolysaccharide metabolism in early atherosclerotic lesions.

Atherosclerosis 13 (1971), 2, 247-54

C.A. 75 (1971), 46693

³⁵SO₄ incorporation rates into acid mucopolysaccharides of human aortas with sclerotic changes were observed.

73-144

SCHWABE, K., ECKARDT, A.

Radiochemical investigation of the behavior of thiocarbamide during electrolysis in cupric sulfate baths.

Monatsh. Chem. 102 (1971), 1, 64-72

C.A. 74 (1971), 133984

The behavior of thiocarbamide during electrolysis was studied using ³⁵S-thiourea.

73-145

SHEPHERD, J., MADEN, B.E.H.

Fingerprinting studies on sulfur-³⁵-labelled mammalian-cell ribosomal proteins.

Biochem. J. 123 (1971), 4, 35p-36p

C.A. 75 (1971), 84229

HeLa cells were labelled with methionine-³⁵S or cystine-³⁵S, the proteins were digested with trypsin and the resulting peptides separated by 2-dimensional electrophoresis and chromatography.

73-146

SPITSYN, V.I., MIKHAILENKO, I.E., VORONIN, Yu.V.

Dehydration of crystalline hydrates of radioactive magnesium and sodium sulfates.

Dokl. Akad. Nauk SSSR 198 (1971), 3, 645-8

N.S.A. 26 (1972), 4373

Preparations of ³⁵S-labelled MgSO₄·7H₂O and Na₂SO₄·10H₂O were grown from saturated aqueous solutions.

73-147

TEODORU, E.

Marking process for sulfurated amino-acids.

Brev. Franç. 1,566,692

73-148

TOMINAGA, F., ASHIDA, S.,
SUDO, K.

Absorption of L-glutathione-³⁵S in rats.

Takeda Kenkyusho Ho 29 (1970),
4, 680-4

C.A. 74 (1971), 137623

Orally administered glutathione-³⁵S underwent considerable hydrolysis in the intestinal lumen, but 5% was transported intact and accumulated in the liver.

73-149

VARMA, A.K., NICHOLAS, D.J.D.

Incorporation of labelled sulfate into cells and cell-free extracts of *Nitrosomonas europaea*.

Arch. Mikrobiol. 73 (1970),
4, 293-307

C.A. 74 (1971), 10594

The incorporation of ³⁵SO₄²⁻ into *Nitrosomonas* was studied.

73-150

ZUCCHINI, G.L., ZUCCHI, F.,
TRABANELLI, G.

Radiochemical measurements on inhibition phenomena.

Ann. Univ. Ferrara, Sez. 5
(1970), Suppl. 5, 577-89

C.A. 74 (1971), 145287

Benzylmercaptan labelled with ³⁵S was used to study corrosion inhibition phenomena.

See also:

73-47 Double isotope method for determination of the miscible inorganic sulfate pool of the mouse applied to *in vivo* studies of sulfate incor-

poration into costal cartilage.

73-76 RNA and mucopolysaccharide metabolism in rachitic cartilage and bone.

73-54 Biosynthesis of the pyrimidine and thiazole moieties of thiamine.

73-79 Autoradiography of the subcommissural organ and the subfornical organ using ³⁵S- and ³H-labelled methionine.

2.7 - OXYGEN LABELLED COMPOUNDS

73-151

DUNN, O.J., TROY, N.Y.

Photochemical isotopic enrichment of ¹³C and ¹⁸O in the photolysis of carbon monoxide.

Rensselaer Polytechnic Inst. (1971), 225 pp.

N.S.A. 26 (1972), 30777

The experimental conditions needed for the realization of photochemical isotopic enrichment were discussed.

73-152

GORENSTEIN, D.G.

pH-Rate profiles for the ¹⁸O exchange and epimerization of a phosphatane oxide. Rate-limiting pseudorotation.

J. Amer. Chem. Soc. 94 (1972),
8, 2808-14

N.S.A. 26 (1972), 30778

The ¹⁸O exchange of 1-phenyl-2,2,3-trimethylphosphatane-1-oxide was studied.

73-153

JOBST, H.M. zu BEXTEN

Heterogeneous isotope exchange between germanium dioxide and gaseous oxygen.

Ph. D. Thesis (1970), 118 pp.

S.T.A.R. (1971), 15983

Isotopic exchanges between hexagonal germanium dioxide and gaseous oxygen at high temperatures were studied by mass spectrometric observations of oxide reactions with ^{18}O -marked O_2 .

73-154

KADENTSEV, V.I., CHIZHOV, O.S., YANOSKAYA, L.A., KUCHEROV, V.F.

Refinement of the mechanism of the oxygen rearrangement of esters of aromatic and unsaturated acids.

Izv. Akad. Nauk SSSR, Ser. Khim. (1971), 8, 1837

C.A. 75 (1971), 139909

The RO group of the esters was labelled by ^{18}O .

73-155

KOENIG, T.W., DEINZER, M., HOEBLER, J.A.

Thermal decomposition of N-nitrosohydroxylamines. III. N-Benzoyl-N-nitroso-O-tert-butylhydroxylamine.

J. Amer. Chem. Soc. 93 (1971), 4, 938-44

C.A. 74 (1971), 99285

The title compound was labelled with ^{18}O .

73-156

MAJOUBE, M.

The fractionating of ^{18}O between ice and water vapor.

J. Chimie Physique Physico-Chimie biologique 68 (1971), 4, 625-36

Index Litt. Nucl. Franç. (1971), 68

73-157

McDOWELL, R.S.

Force constants of ruthenium tetroxide and the applicability of external force fields.

J. Chem. Phys. 52 (1970), 11, 4407-8

Physic Abstr. 74 (1971), 8202

The preparation of Ru^{18}O_4 was discussed.

73-158

MOSS, R.A., FRITZ, A.W., EMERY, E.M.

Basic hydrolysis of solubilized octane-2-diazotate. Dissection of conservation and exchange pathways.

J. Org. Chem. 36 (1971), 25, 3881-5

N.S.A. 26 (1972), 11644

Four product-forming pathways were obtained: ^{18}O (from H_2^{18}O) -incorporation-retention, 18,9%; ^{18}O -incorporation-inversion, 58,5%; ^{16}O -conservation-retention, 16,5%, and ^{16}O -conservation-inversion, 6,0%.

73-159

MUNCHAUSEN, L., OOKUNI, I., ROBERTS, T.D.

New photochemical addition reactions of acetylenes. II. Synthetic potential of neighboring group participation in photolytic hydration.

Tetrahedron Lett. 22 (1971), 1917-20

C.A. 75 (1971), 62810

In the photolytic hydration of the O-ethynylacetanilide in the presence of ^{18}O -enriched water it was shown that the ^{18}O is present in the NHAc group.

73-160

MURRAY, R.W., HAEGEN, R.

Ozonolysis of cis- and trans-diisopropylethylene in the presence of ^{18}O -labelled isobutyraldehyde.

J. Org. Chem. 36 (1971), 8, 1103-6

C.A. 74 (1971), 124521

The title compounds were labelled in both the ether and peroxide bridges by ozonolysis in the presence of ^{18}O -labelled isobutyraldehyde.

73-161

NEIMAN, L.A., SMOLYAKOV, V.S., NEKRASOV, Yu.S., SHEMYAKIN, M.M.

Acyl migration to N-oxide oxygen. Mechanism of the thermal decomposition of β -phenylazoxy tosylate.

Tetrahedron 26 (1970), 21, 4963-8

C.A. 74 (1971), 41681

The thermal decomposition of the title compound was studied using ^{18}O and ^{15}N tracer techniques.

73-162

OOKUNI, I., FRY, A.

Hydrogen chloride catalyzed ^{18}O exchange between para-substituted phenyl methyl sulfoxides and water.

J. Org. Chem. 36 (1971), 26, 4097-101

N.S.A. 26 (1972), 11632

The title exchange reaction was studied in aqueous dioxane solutions of most mineral acids.

73-163

PAVLOVSKAYA, T.E., KHARCHENKO, L.I.

Reaction of oxygen during ir-

radiation of protein.

Dokl. Akad. Nauk SSSR 200 (1971), 2, 481-4

N.S.A. 26 (1972), 15406

Human serum albumin was exposed to ^{60}Co gamma radiation in the presence of pure oxygen enriched with ^{18}O .

73-164

WRAGG, R.D., ASHMORE, P.G., HOCKEY, J.A.

Selective oxidation of propene over bismuth molybdate catalysts. Oxidation of propene using oxygen- 18 -labelled oxygen and catalyst.

J. Catal. 22 (1971), 1, 49-53

C.A. 75 (1971), 19526

See also:

73-112 Radiation induced isotope exchange in the CO-CO₂ system. III. The mechanism of the reaction in silica vessels.

2.8 - NITROGEN-15 COMPOUNDS

73-165

AXENTE, D.

Technique used to separate ^{15}N on columns.

Stud. Cercet. Chim. 19 (1971), 4, 395-415

N.S.A. 26 (1972), 9026

The techniques used to separate ^{15}N by isotopic exchange, chromatographic, distillation, and thermal diffusion techniques are reviewed.

73-166

BANTHROPE, D.V., COPPER, A., PEARCE, D.A., THOMAS J.A.

Mechanism of benzidine and semidine rearrangements. XXIV.

Photochemical decomposition of hydrazoarenes.

J. Chem. Soc. B (1971), 10, 2057-60

C.A. 75 (1971), 140002

The rates of disappearance of 1,1'-hydrazonaphthalene and PhNHNHPh and their ^{15}N -labelled analogs were equal.

73-167

COXON, B.

Nitrogen-15-labelled amino sugars. Synthesis and mass spectrometry of derivatives of 6-amino-6-deoxy-D-glucose-6- ^{15}N .

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

C.A. 75 (1971), 130044

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

73-168

EVERLY, C.R.

Kinetic study of the acid- and base-catalyzed nitrogen-15 exchange of substituted benzamides with ammonia.

Univ. Arkansas, Fayetteville (1970), 100 pp. Order n $^{\circ}$ 70-17186

C.A. 75 (1971), 62881

73-169

EVERLY, C.R., FRY, A.

Kinetic study of the ^{15}N exchange of parasubstituted benzamides with ammonia.

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

N.S.A. 26 (1972), 8816

The ^{15}N exchange of parasubstituted benzamides- ^{15}N with liquid ammonia was studied as a function of temperature and catalyst concentration.

See also:

73-139 Diffusion and exchange processes in the absorption and utilization of ammonium ions by roots.

73-161 Acyl migration to N-oxide oxygen. Mechanism of the thermal decomposition of β -phenylazoxy tosylate.

2.9 - CARBON-13 COMPOUNDS

73-170

DOMINEY, D.A., WICKHAM, A.J.

Gamma-radiation induced isotope exchange in the CO-CO $_2$ system. II. Studies using ^{13}C as tracer atom.

CEGB-RD-B-N 1670 (1970), June, 17 pp.

Bull. Signal. Sect. 150, 32 (1971), 874

The title exchange was studied using CO labelled with ^{13}C .

73-171

ISHIDA, T.

Carbon isotope fractionation.

NYO-4266-1 (1972), 40 pp.

N.S.A. 26 (1972), 14846

Various equipments were constructed for investigation of the feasibility of low-temperature distillation of Freon as a process for ^{13}C isotope fractionation.

73-172

PALKO, A.A., LANDAU, L., DRURY, J.S.

Chemical fractionation of carbon

isotopes. Carbon monoxide system.

Ind. Eng. Chem., Process Des. Develop. 10 (1971), 1, 79-83

C.A. 74 (1971), 48614

The separation process is based on the exchange reaction $\text{Cu}_2(^{12}\text{CO})\text{Cl}_2 \cdot 8\text{NH}_4\text{Cl}(\text{aq}) + ^{13}\text{CO}(\text{g}) = \text{Cu}_2(^{13}\text{CO})\text{Cl}_2 \cdot 8\text{NH}_4\text{Cl}(\text{aq}) + ^{12}\text{CO}(\text{g})$.

See also:

73-112 Radiation induced isotope exchange in the CO-CO₂ system. III. The mechanism of the reaction in silica vessels.

73-122 Isomerization and chlorination of decachlorobi-2,4-cyclopentadien-1-yl.

73-151 Photochemical isotopic enrichment of ¹³C and ¹⁸O in the photolysis of carbon monoxide.

2.10 - TECHNETIUM LABELLED COMPOUNDS

73-173

BROD, K.H., SCHMIDT, K.J., HABIGHORST, L.V., WOLF, R.

Suitability of technetium-99m-containing complexes of ascorbic acid and heavy metal ions for scintigraphy.

Nucl.-Med. Suppl. (1968), 8, 363-6

C.A. 72 (1971), 45550

Solutions of ^{99m}Tc with ascorbic acid and one of the metals Fe, Mn, Cr, Co, V, Ce, Sn, Zn or Bi were studied.

73-174

BRUNO, G., HANEY, T.A.

Colloidal composition of re-active ^{99m}Tc and process for

its preparation and its application to medical diagnosis.

Brev. Franç. 2,034,469

The preparation of the title compounds was based on the use of a chelating agent.

73-175

EL-GARHY, M., EL-BAYOUMY, S., ABDULLAH, E., MADKOUR, M.K., EL-HALEEM, S.A., RAFAEL, N.

Experimental studies of the biological safety of ^{99m}Tc-coated carbon particles suspension intended for radiodiagnostic human lung scanning.

UARAE-112 (1971), 49 pp.

N.S.A. 26 (1972), 9573

73-176

HAUSER, W., ATKINS, H.L., RICHARDS, P.

Renal uptake of ^{99m}Tc-iron-ascorbic acid complex in man.

Radiology 101 (1971), 3, 637-41

N.S.A. 26 (1972), 12373

Two different methods of preparation of the title compound are described.

73-177

HEEP, J., MAIER-BORST, W., SINN, H., PRPIC, B., KRAUSS, O., HERFEL, D., LORENZ, W.J.

Pharmacokinetics of strontium-87m, technetium-99m, and indium-113m compounds in placental scintigraphy.

Nucl.-Med., Suppl. (1968), 8, 355-61

C.A. 72 (1971), 45356

Human serum albumin labelled with ^{113m}In, ^{99m}Tc, or ^{87m}Sr were tested regarding their suitability for placental scintigraphy.

73-178

WEBBER, M.M., CRAGIN, M.D.,
VICTERY, W.Pulmonary scanning using ^{99m}Tc -
labelled macroaggregates of
albumin prepared according to
a new and simplified method.Amer. J. Roentgenol., Radium
Ther. Nucl. Med. 113 (1971),
4, 690-2N.S.A. 26 (1972), 12383The preparation of macroaggre-
gates of albumin incorporat-
ing ^{99m}Tc sulfur is described.2.11 - INDIUM-113 LABELLED
COMPOUNDS

73-179

LLABADOR, Y., FRIEDT, J.M.

Moessbauer study of the after-
effects of tin- 119m isomeric
transition in stannous sul-
fate- ^{119m}Sn .Chem. Phys. Lett. 8 (1971), 6,
592-4C.A. 75 (1971), 13171 ^{119m}Sn -labelled SnSO_4 was
prepared.

See also:

73-177 Pharmacokinetics of
 ^{87m}Sr , ^{99m}Tc , and ^{113m}In com-
pounds in placental scinti-
graphy.2.12 - MISCELLANEOUS LABELLED
COMPOUNDS

73-180

CHEBOTINA, M.Ya.

Absorption of yttrium-91 into
plants through leaf surfaces.

Ekologia (1970), 83718

The absorption of $^{91}\text{YCl}_3$ and ^{91}Y -EDTA applied on the
leaves was studied.

73-181

DOKSANSKY, V.

Preparation of radioactive
kryptonates and their appli-
cation in corrosion studies.Radioisotopy 13 (1972), 1,
75-109N.S.A. 26 (1972), 38911Radioactive kryptonates of
various materials were pre-
pared.

73-182

GELSEMA, W.J., REMIJNSE, A.G.

Effect of labelling on the so-
lubility of cerium(III) oxa-
late in water. Feasibility of
the radiometric determination
of solubility.Recl. Trav. Chim. Pays-Bas 90
(1971), 3, 213-20Chemischer Informationsdienst
Anorganische Chemie (1971),
27, 062

73-183

GLOMSKI, C.A., PILLAY, S.K.K.

Tissue distribution and quan-
titation of stable ^{50}Cr de-
rived from labelled erythro-
cytes.J. Med. Exp. Clin. 1 (1970),
3, 165-73Biological Abstr. 52 (1971),
70487Stable ^{50}Cr can be used as a
label to monitor the kinetics
of Cr-labelled red cells.

73-184

HEINRICH, H.C., GABBE, E.E.,
WHANG, D.H.Physical and biological half-
life of radiochemically pure
iron-59.

Z. Naturforsch. B 26 (1971), 1, 13-20

C.A. 74 (1971), 82010

Radiochemically pure ^{59}Fe was prepared from commercial ^{59}Fe (III) contaminated with ^{60}Co , ^{65}Zn , ^{46}Sc , ^{134}Cs , by preparative anion exchange chromatography on Biorad-A-1 x 2.

73-185

HEPTNER, W.

Special problems in metabolic studies with radioactively labelled drugs, for example, the anthelmintic, WM 842 (p-phenylenediisothiocyanate). Nucl.-Med., Suppl. (1968), 8, 463-5

C.A. 75 (1971), 47227

The title compound forms a complex with the albumin in blood.

73-186

JENSIK, S.C., NORTHROP, R.L.

Incorporation of radioactive seleno ^{75}S -methionine into mumps virus.

Appl. Microbiol. 21 (1971), 3, 451-3

Biological Abstr. 52 (1971), 75763

The radioactive ^{75}S -methionine was incorporated into protein of infectious mumps virus.

73-187

KRTIL, J., MENCL, J.

Preparation of radiolabelled ruthenium tetroxide.

Radiochem. Radioanal. Lett. 7 (1971), 3, 175-80

C.A. 75 (1971), 104570

The title compound was prepared by fusion of a mixture of carrier-free ^{103}Ru or ^{104}Ru , metallic Ru, KNO_3 and Na_2CO_3 at 600° , followed by addition of $\text{K}_2\text{S}_2\text{O}_8$ and Na_2CO_3 and distillation of RuO_4 .

73-188

NEWMAN, D.S.

Radiotracer studies of metal-metal ion-exchange inhibition using organic corrosion inhibitors.

J. Electrochem. Soc. 118 (1971), 4, 451-5

C.A. 74 (1971), 134033

The exchange between Cd and its ions and between Ag and its ions was studied with radiotracers.

73-189

PILLAY, K.K.S., HAGLE, R.E., GLOMSKY, C.A.

Studies of erythrocyte kinetics using stable chromium and neutron activation analysis.

J. Radioanal. Chem. 5 (1970), 2, 265-9

N.S.A. 26 (1972), 4241

The method presented is highly reproducible and eliminates the necessity of any chemical separation of chromium.

73-190

PONTON, D.K.

Calcium- ^{45}Ca mineralization in chicks and rats fed hydrobiotite and dienestrol.

Proc. W. Va. Acad. Sci. 41 (1969), 65-8

C.A. 74 (1971), 51084

73-191

PROKHOROV, V.M., RYZHINSKII, M.V., FRID, A.S.

Effect of calcium phosphate on the rate of strontium-90 diffusion and adsorption in soil.

Agrokhimiya (1970), 12, 68-73
C.A. 74 (1971), 140176

The rate of strontium-90 diffusion and adsorption in soil was studied using $^{90}\text{SrCl}_2$.

73-192

ROUSAR, I., HOSTOMSKY, J., CEZNER, V., STVERAK, B.

Limiting local current densities for electrodes located on the walls of a rectangular channel with laminar flow; asymptotic solution and experimental verification.

J. Electrochem. Soc. 118 (1971), 6, 881-4

C.A. 75 (1971), 29315

The validity of the equation was verified by the deposition of Ag from an electrolyte labelled with ^{110m}Ag .

73-193

SUGISHITA, Y., KAIHARA, S., YASUDA, H., IIO, M., MURAO, S., UEDA, H.

Myocardial distribution of blood flow in the dog, studies by the labelled microsphere. I. Method.

Jap. Heart J. 12 (1971), 1, 50-9

Biological Abstr. 52 (1972), 88470

Carbonized microspheres were labelled with ^{85}Sr .

73-194

SUGISHITA, Y., KAIHARA, S., YASUDA, H., IIO, M., MURAO, S., UEDA, H.

Myocardial distribution of blood flow in the dog studied by the labelled microsphere. II. Heterogeneity of myocardial blood flow in left ventricle induced by isoproterenol injection.

Jap. Heart J. 12 (1971), 1, 60-7

C.A. 75 (1971), 33685

Carbonized microspheres were labelled with ^{85}Sr and ^{141}Ce .

73-195

SUSO, F.A., EDWARDS, H.M.Jr.

Binding capacity of intestinal mucosa and blood plasma for zinc.

Proc. Soc. Exp. Biol. Med. 137 (1971), 1, 306-9

C.A. 75 (1971), 2491

The binding capacity of intestinal mucosa and blood plasma for ^{65}Zn was studied.

73-196

SUZUKI, J.B., BOOTH, R., GRECZ, N.

In vivo and in vitro release of calcium-45 from spores of *Clostridium botulinum* type A as further evidence for spore germination.

Res. Commun. Chem. Pathol. Pharmacol. 2 (1971), 1, 16-23

C.A. 74 (1971), 85384

Spores of *C. botulinum* 33A were labelled with ^{45}Ca .

73-197

TOMINAGA, T., SAKAI, T., FUJIWARA, K.

Hot-atom chemistry of ^{60}Co atoms in neutron irradiated organic solutions of tris(acetylacetonato)cobalt(III).

Bull. Chem. Soc. Jap. 44 (1971),
11, 3036-9

N.S.A. 26 (1972), 11849

The ^{60}Co retention in the irradiated solutions has been shown to be low and to decrease with the increase in the concentration of metallic salts.

73-198

UHER, M., TOLGYESSY, J.,
TOMA, S.

Radioactive kryptonates of sulfoorganic compounds. III. Sulfides and sulfones of some ferrocene derivatives.

Radiochem. Radioanal. Lett. 7
(1971), 1, 37-43

C.A. 72 (1971), 63938

The title compounds were prepared by a diffusion technique.

73-199

VAIDYA, S.G., CHAUDURI, M.A.,
MORRISON, R., WHAIT, D.

Localization of gallium-67 in malignant neoplasms.

Lancet (1970), 7679, 911-4

Biological Abstr. 52 (1971),
85279

^{67}Ga citrate administered i.v. is localized in a variety of malignant tumors and can be detected by scintiscanning.

73-200

VAN CAMPEN, D.R., KOWALSKI, T.J.

Zinc absorption. Zinc-65 binding by homogenates of rat intestinal mucosa.

Proc. Soc. Exp. Biol. Med. 136
(1971), 1, 294-7

C.A. 74 (1971), 51083

Approximately 60% of the ^{65}Zn in labelled homogenates was recovered in a 45,000 supernatant and about 50% could be

recovered in a $(\text{NH}_4)_2\text{SO}_4$ precipitate. The bound ^{65}Zn could be resolved into 2 peaks by gel filtration on Sephadex G-100.

73-201

VOLF, V., VLADAR, M.,
SEIDEL, A.

Distribution of labelled calcium-, yttrium-, and chromium-chelates of EDTA in rats.

Arch. Int. Pharmacodyn. Ther. 190
(1971), 1, 110-23

C.A. 74 (1971), 136008

The differences in the distribution of the title compounds could partly be attributed to radioactive impurities.

73-202

WAITE, D.A., RAMSDEN, D.

Production of experimentally labelled aerosols in the sub-micron range.

J. Aerosol Sci. 2 (1971),
41, 425-36

N.S.A. 26 (1972), 11920

An apparatus for the production of labelled, stable, insoluble particles of ferric oxide in the size range 0.08 to 0.5 μ is described.

73-203

WIERSUM, L.K., VONK, C.A.,
TAMMES, P.M.L.

Movement of calcium-45 in the phloem of Yucca.

Naturwissenschaften 58 (1971),
2, 99

C.A. 74 (1971), 136544

A solution containing various amounts Ca, labelled with ^{45}Ca was prepared.

73-204

ZAITOV, F.A.

Diffusion of tin in mercury telluride.

Fiz. Tverd. Tela 13 (1971), 1, 278-9

C.A. 74 (1971), 130617

The diffusion coefficients were determined by the method of labelled atoms using the ^{123}Sn isotope.

See also:

73-78 Use of electron micro-

scope autoradiography for examining the uptake and degradation of hemoglobin by *Plasmodium berghei*.

73-177 Pharmacokinetics of $^{87\text{m}}\text{Sr}$, $^{99\text{m}}\text{Tc}$, $^{113\text{m}}\text{In}$ compounds in placental scintigraphy.

73-141 Aspects of the metabolism of ^{35}S -methionine and ^{75}Se -methionine in rats.

3 - RADIODECOMPOSITION, STABILITY, STORAGE

73-205

GELLER, L.E., SILBERMAN, N.

Stability of labelled compounds after storage.

Curr. Status Liquid Scintill. Counting (1970), 137-41

C.A. 75 (1971), 30998

Recent findings related to minimizing radiochemical decomposition are reviewed.

73-206

SCHWEER, K.H.

Autoradiolysis of labelled compounds.

Nucl.-Med., Suppl. 8 (1968), 439-42

C.A. 75 (1971), 70385

The chemical contamination and decomposition are discussed.

4 - PURIFICATION, SEPARATION

73-207

ASHWORTH, L.A.E., TAYLOR, K.B.

Rat intrinsic factor. Partial purification and characterization.

Biochim. Biophys. Acta 230 (1971), 3, 468-70

C.A. 74 (1971), 137521

Rat gastric juice-cyanocobalamin- ^{58}Co was partially purified by ion-exchange chromatography and gel filtration.

73-208

EL-GARHY, M., ALY, H.F., EL-REEFY, S.A.

Separation of carrier-free manganese- 54 and iron- 59 by using reversed phase partition chromatography.

Isotopenpraxis 6 (1970), 12, 478-80

C.A. 74 (1971), 70394

The neutron-irradiated $\text{K}_4\text{Fe}(\text{CN})_6$ was dissolved in water at pH 9-10. The recoiled Fe forms an insoluble hydroxide which occludes Mn activity. The hydroxide was dissolved in 8M HCl and separated by using a column of Aliquat-336 - Celite 360.

73-209

GRESHAM, P.A., BARNETT, M.,
SMITH, S.V.

Chemical method for the rapid separation of the iron-containing compounds hemosiderin, ferritin, transferrin, and heme.

Med. Lab. Technol. 28 (1971),
2, 197-200

C.A. 75 (1971), 31112

The separation procedures were developed in mouse tissue using ⁵⁹Fe-labelled compounds.

73-210

HARTMANN, N., VOGLER, H.

Experience with the thin-layer chromatographic separation of thyroid hormones.

Acta Biol. Med. Ger. 24
(1970), 1/2, 219-21

Biological Abstr. 52 (1971),
95370

Thyroxine, 3,5,3'-triiodothyronine, 3,5-diiodothyrosine and moniodothyrosine labelled with ¹³¹I were separated by thin-layer chromatography in a 0.25 mm thick silica gel G-layer with n-butanol saturated with 2N ammonia.

73-211

HEIJINK, A., POLAK, H.L.

New radiometric titration method based on separation by means of ion exchange. VI. The reductometric determination of thallium.

J. Radioanal. Chem. 8 (1971),
1, 23-6

The separation was achieved by cation exchange.

73-212

HEIJINK, A., POLAK, H.L.

New radiometric titration method based on separation by means of ion exchange. V. The oxidimetric determination of thallium in the presence of other metals.

J. Radioanal. Chem. 8 (1971),
1, 13-21

N.S.A. 26 (1972), 6482

Some examples are given of mixtures of thallium with tin, cobalt, or iron in which both ions are determined.

73-213

KRAINCANIC, M., JOVANOVIC, M.,
DJURDJEVIC, D., SINADINOVIC,
J., KOSTIC, G.

Application of some physicochemical methods in the study of thyroid iodoproteins.

Jugoslav. Physiol. Pharmacol.
Acta 6 (1970), 3, 477-82

C.A. 74 (1971), 136235

Gel filtration through Sephadex G-200 columns was applied as a preparative method for the group separation of thyroid labelled iodoproteins.

73-214

ORAVEC, M., KORNER, A.

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

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

Genetics Abstr. 03 (1971),
G, 11007

Rapidly labelled RNA isolated from liver nuclei of rats given pulses of ³H-orotic acid were separated into 4 fractions by chromatography on methyl albumin kieselguhr columns.

73-215

RICHTER, J.A., MARCHBANKS, R.M.

Isolation of ³H-acetylcholine

pools by subcellular fractionation of cerebral cortex slices incubated with ^3H -choline.

J. Neurochem. 18 (1971), 5, 705-12

C.A. 75 (1971), 30621

Most of the bioassayable ACh, but little of the radioactive ACh in the vesicles passed through isosmotic Sephadex columns.

73-216

SNARY, D., ALLEN, A.

Gastric mucoproteins. Isolation and characterization of the mucoprotein of the water-soluble mucus from pig cardiac gastric mucosa.

Biochem. J. 123 (1971), 5, 845-53

C.A. 75 (1971), 84234

The water-soluble radioactive

mucus labelled with ^{14}C -labelled carbohydrate or with ^3H -labelled protein was separated by gel filtration on Sepharose 4B and Sephadex G-200.

73-217

VDOVENKO, V.M., BOBROVA, V.N., ZHARKOV, A.V., RYS'EV, O.A., VOLINA, V.V.

Rapid method of determining the radiochemical purity of preparations labelled with tritium using paper and thin-layer chromatography.

Sov. Radiochem. 13 (1971), 2, 254-7

N.S.A. 26 (1972), 11528

The radiochemical purity of preparations labelled with tritium was investigated using paper and thin-layer chromatography with stilbene introduced.

5 - A N A L Y S I S

5.0 - GENERAL

73-218

AITKEN, M.J.

Physics applied to archaeology. I. Dating.

Rep. Progr. Phys. 33 (1970), 10, 941-1000

Bull. Signal. Sect. 150, 32 (1971), 15543

Archeomagnetic, thermoluminescent and nuclear dating are discussed.

73-219

BARKER H.

Critical assessment of radio-carbon dating.

Philos. Trans. r. Soc. London A, 269 (1970), 1193, 37-45

Bull. Signal. Sect. 210, 32 (1971), 715

The title method was discussed.

73-220

BRAY, G.A.

Determination of radioactivity in aqueous samples.

Curr. Status Liquid Scintillation Counting (1970), 170-80

C.A. 75 (1971), 31001

The methods of preparation of aqueous samples containing ^3H or ^{14}C for assay in a liquid scintillation counter are reviewed. Methods for counting urine and serum are compared.

73-221

COURTOIS, G., SAUZAY, G.

Calculation of the mass of labelled sediments to be injected in a dynamic sedimentology experiment using tracer techniques.

Houille Blanche 25 (1970), 7, 629-42

Index Litt. Nucl. Franç. (1971), 9490

73-222

JORDAN, P., MAY, K.

Radioactivity of certain stable isotope-enriched substances.

Experientia 27 (1971), 10, 1146-7

N.S.A. 26 (1972), 14853

Substances with a high content of deuterium have a specific radioactivity due to the tritium of natural origin concentrated at the same time as the deuterium.

73-223

KOBAYASHI, Y., MAUDSLEY, D.V.

Practical aspects of double isotope counting.

Curr. Status Liquid Scintill. Counting (1970), 76-85

C.A. 75 (1971), 13790

The conditions for the simultaneous counting of 2 isotopes by a liquid scintillation counter are discussed.

73-224

LITT, G.J., CARTER, H.

Sample adsorption problems in liquid scintillation counting.

Curr. Status Liquid Scintill. Counting (1970), 156-63

C.A. 75 (1971), 31107

The influence of carrier concentration was studied.

73-225

MAHIN, D.T., LOFBERG, R.T.

Determination of several isotopes in tissue by wet oxidation.

Curr. Status Liquid Scintill. Counting (1970), 212-21

C.A. 75 (1971), 45456

The wet oxidation method is described and applications are reviewed.

73-226

POCH, G.

Assay of phosphodiesterase with radioactively labelled cyclic 3',5'-AMP as substrate.

Nauny-Schmiedebergs Arch. Pharmakol. 268 (1971), 3, 272-99

Biological Abstr. 52 (1971), 77742

The determination of the title compound is based on the use of radioactively labelled cyclic 3',5'-AMP as substrate and the quantitative removal of the labelled product.

73-227

VANHA PERTTULA, T., GRIMLEY, P.M.

Loss of proteins and other macromolecules during preparation of cell cultures for high resolution autoradiography. Quantitation by a micromethod.

J. Histochem. Cytochem. 18 (1970), 8, 565-73

Nuclear Medicine (1971), 4317

A method was devised in order to measure the extraction of ³H-labelled cellular products during aldehyde fixation and subsequent processing for electron microscopic autoradiography.

73-228

WARD, F.J., NAKANISHI, M.

Comparison of Geiger-Mueller and liquid scintillation counting methods in estimating primary productivity.

Limnol. Oceanogr. 16 (1971), 3, 560-3

N.S.A. 26 (1972), 6476

Primary productivity estimated from liquid scintillation counting of the radioactivity of wet ^{14}C -labelled algae on membrane filters was about 30% greater than an estimate for Geiger-Mueller counts of comparable algae and filters that were desiccated.

5.1 - DETERMINATION OF ACTIVITY

73-229

ALEKSEEV, V.G., SAPRYKIN, P.V., CHAEV, V.A., GAVRIKOV, V.Yu.

Use of a low-background automatic β -counter for measuring the radioactivity of ^3H , ^{14}C and ^{32}P in solid samples.

Otchetnaya Nauch. Konf. Biol. Otd., Inst. At. Energ., Sb. Dokl., 1st (1969), 149-58

C.A. 75 (1971), 30863

The instrument presented is coupled to a windowless flow counter. The background amounted to 3 counts/min.

73-230

DUNN, A.

Use of cetyl trimethylammonium bromide for estimation of the in vivo incorporation of radioactive precursors into RNA.

Anal. Biochem. 41 (1972), 2, 460-5

C.A. 75 (1971), 31120

RNA was precipitated with the title compound and the precipitate was collected on glass-fiber filters from which the RNA can be quantitatively eluted with Soluene 100.

73-231

GIBSON, J.A.B., BURT, A.K.

Some techniques for the measurement of tritium.

Protection against Low Energy or Short Range Radiations and the Biological Effects of Radiation. Le Vesinet (1971), 37-44

N.S.A. 26 (1972), 12302

Tritiated water in air was measured by passing the air through a flow ionization chamber or by extracting the water vapor from the air.

73-232

JOKS, Z., SNAJBERK, J.

Tritium counting in plastic material testing.

Radioisotopy 13 (1972), 1, 139-49

N.S.A. 26 (1972), 39005

Methods of low-energy beta radiation measurement applicable in plastic material testing are described.

73-233

SASTRY, K.G.K., REDDY, A.R., NAGARATNAM, A.

Dosimetry of ^{169}Yb , ^{111}In , and $^{113\text{m}}\text{In}$ labelled pharmaceuticals.

National Symposium on Radiation Physics. Bombay, 24 Nov. (1970), CONF-701138-3, 10 pp.

N.S.A. 26 (1972), 4753

Radiation doses were estimated for the title compounds.

73-234

SHAW, W.A., HARLAN, W.R.

Improved method for counting radioisotopes adsorbed on silica gel.

Anal. Biochem. 43 (1971), 1, 119-22

N.S.A. 26 (1972), 6475

The silica gel thin-layer chromatography absorbent was dissolved with HF and the resulting mixture was counted in a toluene Triton X-100 scintillation solution.

73-235

WEINSHELBAUM, E.I.,
FERGUSON, D.J.

Localization of tritium from histamine in gastric mucosa in vivo.

Histochemie 26 (1971), 1, 9-18

C.A. 75 (1971), 46363

Gastric endocrine-like cells were differentiated on the basis of their affinity for Ag in Os fixed plastic embedded sections stained by a Bodian technique.

73-236

ZADUBAN, M., STOLLAROVA, V.,
PALAGYI, S.

Possibilities of the determination of ^3H , ^{14}C , and ^{131}I individually and in mixtures, by the method of amplitude attenuation using liquid scintillators.

J. Radioanal. Chem. 5 (1970), 1, 91-105

N.S.A. 26 (1972), 4212

The changes in the counting efficiency were determined as a function of the parameters of the measuring equipment.

5.2 - APPARATUS

73-237

BARBER, D.E.

Simplified liquid scintillation counting.

Phys. Med. Biol. 16 (1971), 4, 687-9

N.S.A. 26 (1972), 6841

The activity was measured without quenching corrections using a secondary sample vial inserted into a liquid scintillation vial containing a standard preparation.

73-238

CHUDY, M., POVINEC, P.,
SELIGA, M., SARO, S.

Carbon-14 in the atmosphere and biosphere.

Radioisotopy 11 (1970), 5, 935-51

C.A. 75 (1971), 70480

^{14}C concentration in atmospheric CO_2 and biological samples was measured by using a gas-filled proportional counter.

73-239

DOERMER, P., BRINKMANN, W.

Applications of autoradiography to clinical investigations.

Acta Histochem., Suppl. (1971), 9, 729-39

C.A. 75 (1971), 31155

Using a light microscope photometer, a system was devised for automatically recording evaluations of the Ag grain deposit.

73-240

FONTES, J.C.

Counting unit for measuring the activity of natural radiocarbon

by liquid scintillation.

Rev. Geogr. Phys. Geol. Dyn. 13 (1971), 1, 67-86

N.S.A. 26 (1972), 4415

Equipment for measuring the activity of natural radiocarbon by liquid scintillation is described.

73-241

GACS, I., MLINKO, S., PAYER, K.

Isotope gas analysis of tritium-labelled water by means of an automatic apparatus.

J. Radioanal. Chem. 10 (1972), 2, 203-12

N.S.A. 26 (1972), 33104

The method is based on the conversion of water to hydrogen, methane and carbon monoxide in a carbon-packed quartz reactor.

73-242

HAASBROEK, F.J., SCHOEMAN, E.A., DE WET, P.J., KOUSSEAU, P.C.

The use of X-ray film and ³⁵S-labelled L-cystine for the measurement of wool fibre length growth.

Agroanimalia 2 (1970), 1, 43-4

Biological Abstr. 52 (1971), 87676

Commercial X-ray film was used successfully in determining wool growth.

73-243

HELLJUNG-LARSEN, P.

Scintillation counting of aqueous solutions of ³H RNA.

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

N.S.A. 26 (1972), 14776

Nine known and to new scintillation liquids were investigated.

73-244

LATHROP, K.A., COHEN, T.D., BECK, R., HARPER, P.V.

Comparison of gallium-68, technetium-99m, and indium-113m used with the gamma camera and the 3-inch and 5-inch scanners for visualization of lesions in the brain, kidney, liver and lung.

Nucl.-Med., Suppl. (1968), 8, 265-77

C.A. 72 (1971), 45545

73-245

SEN ELECTRONIQUE

Improvements in or relating to the testing of radioactive materials.

British Patent 1,248,822

N.S.A. 26 (1972), 12012

The emission from each specimen is simultaneously detected by two or more detectors.

73-246

WEGNER, L.A., WINKELMANN, H.

Apparatus for completely burning combustible, powdery, radioactive biological samples.

Ger. Offen. 1,946,423

C.A. 72 (1971), 31182

The sample is placed in a deflagration spoon within a transparent glass bomb containing O.

73-247

WEGNER, L.A., WINKELMANN, H.

Apparatus for absorbing gaseous combustion products prior to determining the activity of radioactive biological samples.

Ger. Offen. 1,946,424

C.A. 72 (1971), 31186

The title apparatus is described.

73-248

WENZEL, M., HOFFMANN, K.

Automatic and nondestructive scanning of ^{14}C and ^3H on two-dimensional chromatograms.

Anal. Biochem. 44 (1971), 1, 97-105

N.S.A. 26 (1972), 8738

The separation of double-labelled ($^3\text{H}/^{14}\text{C}$) compounds on the same spot is possible with this equipment.

73-249

WHEELER, K.T.Jr., SHAW, E.I.

Determination of the efficiency of NTB nuclear track emulsion for the detection of tritium.

Int. J. Appl. Radiat. Isotop. 22 (1971), 12, 759-65

N.S.A. 26 (1972), 9325

73-250

WOOLFREY, B.F.

An investigation concerning the validity of thin substrate film techniques for the histochemical detection of ribonuclease activity. Negative radioautographic localization of ribonucleodepolymerase activities by the use of ^{14}C -labelled RNA, tritium-labelled RNA and tritium-labelled synthetic polyribonucleotides incorporated into thin substrate films.

COO-1089-16 (1971), 205 pp.

N.S.A. 26 (1972), 15553

5.3 - DEGRADATION

73-251

ENGLUND, P.T.

Analysis of nucleotide sequen-

ces at 3' terminal of duplex deoxyribonucleic acid by means of the T4 deoxyribonucleic acid polymerase.

J. Biol. Chem. 246 (1971), 10, 3269-76

C.A. 25 (1971), 30017

The method used in this analysis was to degrade ^{32}P -labelled DNA by the T4 polymerase in the presence of each of the 4 triphosphates.

73-252

SCOTT, T.A.

Degradation of nicotinic acid and related compounds.

Methods Enzymol. 18 (1971), Pt B, 71-90

C.A. 25 (1971), 30412

The degradation of nicotinic acid- ^{14}C was studied by hydrogenation, decarboxylation, and oxidation reactions.

73-253

SUSAN, A.B., NYSTROM, R.F.

Small scale degradation of ^{14}C -labelled carboxylic acids. I. Modification of the Hunsdiecker reaction.

J. Label. Compounds 7 (1971), 3, 269-74

The degradation of the silver salts of acetic acid- ^{14}C , acetic acid- $2\text{-}^{14}\text{C}$, propionic acid- $1\text{-}^{14}\text{C}$, propionic acid- $3\text{-}^{14}\text{C}$, n-butyric acid- $1\text{-}^{14}\text{C}$ and n-butyric acid- $2\text{-}^{14}\text{C}$ to carbon dioxide, silver bromide and an organic bromide was studied.

73-254

SUSAN, A.B., NYSTROM, R.F.
 Small-scale degradation of
¹⁴C-labelled carboxylic acids.
 II. Complete degradation of
¹⁴C-labelled propionic and n-
 butyric acids.

J. Label. Compounds 7 (1971),
 3, 275-82

This method was found to be
 isotopically reliable.

73-255

VAN DYKE, R.A., WINEMAN, C.G.
 Enzymic dechlorination. Dechlor-
 ination of chloroethanes and
 propanes in vitro.

Biochem. Pharmacol. 20 (1971),
 2, 463-70

C.A. 74 (1971), 138946

The title compounds were en-
 zymically dechlorinated by an
 enzyme system containing NADPH
 and oxygen.

6 - M I S C E L L A N E O U S

73-256

BAIRD, J.C.
 Hazards of radiation.
 Australas. J. Pharm. Sci.,
 Suppl. 52 (1971), 103, S65-8
 N.S.A. 26 (1972), 12338

The possible hazards during
 the preparation and medical
 uses of radiopharmaceuticals
 are discussed.

73-257

BALLEREAU, P.
 Oxidation of tritium to tri-
 tiated water and health physics.
 C.E.A.-BIB-179 (1970), 65 pp.
 Index Litt. Nucl. Franç.
 (1971), 8767

The oxidation of tritium to tri-
 tiated water and its implication
 to the security in laboratories
 are discussed.