ABSTRACTS SECTION

In this section are given information on methods of synthetizing 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.

CONTENTS

1 - GENERAL

72-788

BICHUL T.V., BERNOTAS V.I.

Collection of abstracts on the chemistry and technology of isotopes and labelled compounds for 1968.

Gos. Inst. Prikl. Khim. Leningrad (1970) 44 pp.

72-789

CHRISTIAN J.E.

Areas of usefulness of radioactivity to the pharmaceutical and allied sciences.

Radioisotopes (Tokyo) 20 (1971) 9, 473-83

N.S.A. 26 (1972) 12368

Current and potential applications of radioactive isotopes are discussed.

72-790

DEDEK V.

Present and future trends and activity of the Institute for Research, Production, and Application of Radioisotopes.

Radioisotopy 10 (1969) 4/5, 473-505

C.A. 74 (1971) 133095

The scientific activity of the Institute is described.

72-791

DROZ B., LAIGRA F.

Radioautography in pharmacodynamic studies.

Symp. Progr. Tech. Nucl. Pharmacodyn. (1970) 93-9

C.A. 75 (1971) 18086

The preparation of labelled compounds and the measuring techniques are reviewed.

72-792

ERTEL G.

Development of a cooperation between member countries of the Council of Mutual Economic Aid for producing isotopes and labelled compounds to achieve an effective division of labor in scientific technical studies and in production.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 475-85

C.A. 74 (1971) 105759

The progress made in 1963-8 in the Iron-Curtain countries in developing radioisotopes and labelled compounds are reviewed.

72-793

HILL H.

Physiological research with domestic animals using radioisotopes.

Dtsch. Tierarztl. Wschr. 78 (1971) 3, 60-3

Nuclear Med. (1971) 4182

Recent research carried out in an Institute of physiology utilizing radioisotopes is reviewed.

72-794

ITHAKESIOU D.S., TSOUKATOU M.P.

Use of radionuclides and labelled compounds in nuclear medicine.

Chem. Chron. Epistem. Ekdosis 15 (1970) 5/7, 66-75

C.A. 74 (1971) 50258

Preparation, detection, packaging and storing of labelled compounds are reviewed.

72-795

PECORINI V., DEGROSSI O.J. ALTSCHULER N., CAPALBO E.E.

Use of radioisotopes in biomedical research.

CONF-710901-493 (1971) 24 pp.

N.S.A. 25 (1971) 51959

Dynamics studies, kinetic studies, development of scanning techniques and in vitro techniques are briefly reviewed.

72-796

PIEPSZ A.

Scintigraphy in pediatrics.

Acta Paediat. Belg. 24 (1970) 3/4, 385-400

Nuclear Medicine (1971) 3368

The equipment and isotopes used are reviewed.

72-797

REBOLLO D.V., CASAS MEDINA F., DEL VAL COB M.

Radiopharmaceuticals.

Quim. Ind. 17 (1971) 1, 61-70

C.A. 75 (1971) 924

Methods of preparation, purification and control of radiopharmaceuticals are reviewed.

72-798

SICOT C.

Hepatic scintigraphy.

Acquisitions med. récentes (1970) 209-18

Nuclear Medicine (1971) 3461

The value of hepatic scintiscanning is compared to other methods.

72-799

STAUM M.M.

Radiopharmaceuticals.

Bull. parenter. Drug. Ass. 24 (1970) 5, 250-4

Bull. Signal. Sect. 320, 32 (1971) 4999

Radiopharmaceuticals for diagnostic use are reviewed.

72-800

VALETTE G., BRALET J.

Use of radioisotopic methods in pharmacodynamic study of catechol amines and sympathomimetics in general.

Symp. Progr. Tech. Nucl. Pharmacodyn. (1970) 83-92

C.A. 75 (1971) 18085

The use of radioisotopes is discussed.

2 - SYNTHESIS

2.0 - GENERAL

72-801

CHIOTAN C.

Preparation of radioactive isotopes in Romania.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 16-22

C.A. 74 (1971) 105751

Types of radioactive labelled compounds produced in Romania are reviewed.

72-802

DEPTULA C., JUREWICZ A., PASTERNAK A., PONINSKI M., RADOSZEWSKI T., RYBAKOW Z., ZELENAY K.

Production of radioactive preparations in Poland.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 425-36

C.A. 74 (1971) 105755

Radioisotopes and labelled compounds development since 1957 are reviewed.

72-803

GREEN B.J.

Production of tracers and radiopharmaceuticals.

Meeting on neutron sources and applications Augusta 18 Ap. 1971
Conf-710402 1 (1971) 27-35

N.S.A. 26 (1972) 12362

The availability of radiopharmaceuticals in the dose and form desired by the user is discussed.

72-804

MARTINEZ A.M., ARCHUNDIA C.

Radioisotopes production in Mexico.

IAEA - 125 (1970) 33-41

Bull. Signal. Sect. 150 32 (1971) 7789

72-805

NADEAU R.G., HANZLIK R.P.

Synthesis of labelled squalene and squalene 2,3-oxide.

Methods Enzymol. (1969) 15, 346-51

C.A. 74 (1971) 100225

72-806

PARKER W.C., ROSS W.J., CHUCHANI G.

The radiochemistry programmes at the Instituto Venezolano de Investigaciones cientificas.

IAEA - 125 (1970) 3-31

Bull. Signal. Sect. 150, 32 (1971) 7694

The preparation of radiolabelled compounds in Venezuela is discussed.

72-807

SORANTIN H.

Production of radionuclides in Austria.

IAEA - 124, 2 (1970) 287-318

Bull. Signal. Sect. 150, 32 (1971) 7799

The production and distribution of radionuclides in Austria are described.

72-808

TEREKHOVA V.N., KULISH E.E., POPOVA G.L.

Production of isotopes in the USSR and prospects for its development.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 110-8

C.A. 74 (1971) 105750

Radioisotope developments are reviewed.

72-809

VERES A., PAL I., MARTON J.

Production of new radioactive preparations in Hungary in 1966-9

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 1-15

C.A. 74 (1971) 105748

Advances made in Hungary since 1954 in producing radioactive preparations are reviewed.

2.1 - DEUTERIUM COMPOUNDS

2.1.0 - General

72-810

BOTTLER F., DIRIAN G., PAULY J. ROTH E.

Process for re-enriching hydrogen poor in deuterium in a plant for the production of deuterated products; particularly of heavy water.

B.F. 2,041,395

The title process is described.

2.1.1 - Aliphatic compounds

72-811

ANDO N., MARUYA K., MIZOROKI T. OZAKI A.

Isotopic exchange in ethylene-d_4-ethylene and molecular deuterium-molecular hydrogen catalyzed by bis (triphenylphosphine) nickel (II) halide.

J. Catal. 20 (1971) 3, 299-308

C.A. 74 (1971) 124463

The real catalyst for the title reaction is the Ni hydride complex.

72-812

ANET E.F.L.J.

Proton exchange during the conversion of hexose into 5-hydroxymethyl-2-furaldehyde.

Aust. J. Chem. 23 (1970) 11, 2383-5

C.A. 74 (1971) 31921

Low incorporation of D at the C-3 of the title compound formed by acid-catalyzed dehydrocyclization of hexoses in D_2O was explained in terms of kinetic isotope effects.

72-813

AZATYAN V.V., FILIPPOV S.B., KHACHATRYAN M.S.

Kinetics of the reactions of atomic hydrogen and deuterium with propane.

Kinet. Katal. 12 (1971) 1, 5-10

C.A. 74 (1971) 111311

The reactions of atomic H or D with C_3H_8 to give H_2 or HD and $C_3H_7^{\bullet}$ were studied by EPR.

72-814

BARNES D.J., BELL R.P.

Kinetic hydrogen isotope effects in the ionization of some carbon acids.

Proc. Roy. Soc. Ser. A 318 (1970) 1535, 421-40

C.A. 73 (1970) 92006

Rate constants are reported for H and D abstraction by a variety of bases from tricarbomethoxymethane, 2-propanone-1-sulfonate ion, 2-acetylcyclohexanone, and ethyl nitroacetate.

72-815

BELL R.P., COX B.G.

Primary hydrogen isotope effects on the rate of ionization of nitroethane in mixtures of water and dimethyl sulfoxide.

J. Chem. Soc. B (1971) 4, 783-5

C.A. 74 (1971) 140396

The rate of ionization of $EtNO_2$ and $EtNO_2$-1-d_2 was determined in solutions of NaOH in 6 aqueous solvents containing 0-58 mole % Me_2SO.

72-816

BELL R.P., COX B.G.

Properties of disulfones : acidities, rates of ionization and bromination, and hydrogen isotope effects.

J. Chem. Soc. B (1971) 4, 652-6

C.A. 74 (1971) 140487

72-817

BELL T.N., PLATT A.E.

Reactions of deuterated methyl radicals with methylfluorosilanes. Polar effects in hydrogen abstraction.

J. Phys. Chem. 75 (1971) 5, 603-7

C.A. 74 (1971) 99178

The abstraction of H by CD_3 radicals from $MeSiF_3$, Me_2SiF_2, Me_3SiF and Me_4F was studied.

72-818

GENESTE P., LAMATY G., ROQUE J.P.

Nucleophilic addition reactions of ketones. Addition of the sulphite ion : detection of hyperconjugation by measuring the secondary isotope effect of deuterium.

Tetrahedron 26 (1972) 11613

The rates of addition at 25°C in water of the $SO_3^{=}$ ion to nine saturated ketones and their α-deuterated homologs were measured.

72-819

GENESTE P., LAMATY G., ROQUE J.P.

Nucleophilic addition reactions of ketones. Addition of hydroxylamine : detection of steric factors by measuring the secondary isotope effect of deuterium.

Tetrahedron 27 (1971) 22, 5561-78

N.S.A. 26 (1972) 11614

The rates of addition of NH_2OH in water at 25°C to 17 ketones and their α-deuterated homologs were measured.

72-820

HUNTRESS W.T.Jr., ELLEMAN D.D., BOWERS M.T.

Dependence of the rates on ion kinetic energy for the reactions $D_3^+ + D_2$ and $HD^+ + HD$.

J. Chem. Phys. 55 (1971) 11, 5413-4

N.S.A. 26 (1972) 8856

It was shown that the H_2D^+/HD_2^+ ratio increases with kinetic energy.

72-821

NAITO S., SAKURAI Y., SHIMIZU H. ONISHI T., TAMARU K.

Reaction mechanism of unsaturated hydrocarbons with deuterium over zinc oxide.

Trans. Faraday Soc. 67 (1971) 5, 1529-37

C.A. 75 (1971) 19408

The addition of D to propylene, butene and 1,3-butadiene was studied over ZnO at room temperature. Propane-d_2, butane-d_2, and butene-d_2 were obtained.

72-822

SAKODYNSKII K.I., SEVAST'YANOVA A.K.

Separation of methane and methane-d_4 on saran active carbon.

Gaz. Khromatogr. (1969) 10,70-2

C.A. 74 (1971) 140765

The separation of CH_4 and CD_4 was studied on a column of saran carbon obtained by decomposing poly (vinylidene chloride).

72-823

SCHULER R.H., NETA P., HOLDREN G.R.

Rate constants for reaction of hydrogen atoms in aqueous solutions.

J. Phys. Chem. 75 (1971) 4, 449-54

C.A. 74 (1971) 99187

The rates of the title reaction were measured relative to the rate of formation of HD from deuterioisopropyl alcohol solutions in competitive experiments.

72-824

SENECHAL G., CORNET D.

Hydrogenation and deuteration of 1,2-epoxybutane and 2,3-epoxybutane on metal catalysts.

Bull. Soc. Chim. Fr. (1971) 3, 773-83

C.A. 75 (1971) 19539

The hydrogenation of the title compounds was accompanied by isomerization to the corresponding aldehydes or ketones.

72-825

SEYFERTH D., SPOHN R.J., HALLGREN J.E.

Methylenation of methylidynetricobalt nonacarbonyl with monohalomethylmercurials.

J. Organometal. Chem. 28 (1971) 3, C34-C36

C.A. 74 (1971) 142033

Treatment of $DCCo_3(CO)$ with $Hg(CH_2Br)_2$ and of $HCCo_3(CO)_9$ with $Hg(CD_2I)_2$ gave $DCCo_3(CO)_9$ and $D_2CHCCo_3(CO)_9$.

72-826

TUCKER W.P., TOVE S.B., TEPLER C.R.

Synthesis of 11,11-dideuteriolinoleic acid.

J. Label. Compounds 7 (1971) 1, 11-5

The title compound was prepared from 1-heptyne.

2.1.2 - Aromatic compounds

72-827

ASAHARA T., SENO M., TANAKA S., AKIYAMA M.

Anionic telomerizations. VI. Proton NMR spectrum of N-phenethyl-o-anisidine.

Bull. Chem. Soc. Jap. 44 (1971) 4, 1156-8

C.A. 75 (1971) 19378

o-Anisidine was deuterated with D_2O and KOD.

72-828

ATKINSON J.G., LUKE M.O.

Stable isotope chemistry. VIII. Hydrogen-deuterium exchange of medium ring cycloalkenes during deuterogenation with tris (triphenylphosphine) chlororhodium (I).

Can. J. Chem. 48 (1970) 22, 3580-2

C.A. 74 (1971) 31575

Cyclooctene, cycloheptene, and cyclododecene undergo H-D scrambling during the title deuterogenation.

72-829

BALDWIN J.E., ANDRIST A.H.

Mechanism and inverse primary kinetic isotope effect in the reaction of fluorenylidene with 3-deuteriocyclohexene.

J. Chem. Soc. D (1971) 23, 1512-3

N.S.A. 26 (1972) 8819

The mechanism of the title reaction was studied.

72-830

BALDWIN J.E., KAPLAN M.S.

Degenerate valence isomerization of bicyclo (4.2.0) octa-2,7-diene.

J. Chem. Soc. D (1970) 22, 1560-1

C.A. 74 (1971) 31423

1,6-Dideuteriobicyclo (4.2.0) octa-2,7-diene prepared from 2,2-dideuteriocyclohexane-1,3-dione rearranged to 55% dideuteriocycloocta-1,3,5-triene, 35% starting material and 10% of its 3,8-dideuterio-isomer.

72-831

BANTHORPE D.V., THOMAS J.A.

Tracer studies on the reductive coupling of 1-naphtyldiazonium ions.

J. Chem. Soc. B (1971) 2,365-6

C.A. 74 (1971) 99198

When the title ions containing D at the 2 - or 4 - positions were coupled by a buffered Na_2SO_4 under acid condition to form 1,1'azonaphtalene, the original orientations of D relative to N were preserved.

72-832

BARLTROP J.A., OWERS R.J.

Photochemical reduction of naphtalene and some of its derivatives.

J. Chem. Soc. D (1970) 21, 1462

C.A. 74 (1971) 41628

Photochemical reduction of naphtalene by Et_3N containing D_2O gave 1,4-dihydronaphtalene with 1.6 D atoms incorporated in the 1 - and 4 - positions.

72-833

BERSON J.A., HASTY N.M. Jr.

Solvolytic behavior of bicyclo-(3.1.0) hex-3-en-2-yl derivatives. Mechanism of photolysis of benzene in hydroxylic media.

J. Amer. Chem. Soc. 93 (1971) 6, 1549-51

C.A. 74 (1971) 124420

Photolysis of benzene in deuteriophosphoric acid gives exo-bicyclo (3.1.0) hex-3-en-yl alcohol in which the 6-D atom is exclusively endo.

72-834

BERSON J., VOGEL P., SAUNDERS M., HASTY N.M. Jr.

Bicyclo (3.1.0) hex-3-en-2-yl cation.

J. Amer. Chem. Soc. 93 (1971) 6, 1551-2

C.A. 74 (1971) 124562

The title cation was deuterated at the 2 position of the cyclopropane ring and at the 6-endo position.

72-835

BOYKIN D.W., TURNER A.B., LUTZ R.E., McFARLANE N.S.

Solvent effects in nuclear magnetic resonance spectroscopy. II. Transmission of substituent effects by three-membered rings.

J. Org. Chem. 36 (1971) 8, 1107-12

C.A. 74 (1971) 124630

A series of trans-1-(substituted phenyl)-2-benzoyl-3,3-dideuteriocyclopropanes was prepared.

72-836

BRIDGER R.F.

Kinetics of inhibition of hydrocarbon autoxidation by 1,1'-bis (N-phenyl-2-naphthylamine).

J. Org. Chem. 36 (1971) 9, 1214-6

C.A. 74 (1971) 140556

The deuterium isotope effect was measured for the autoxidation of cumene in presence of the title amine.

72-837

BROWN J.M., CAIN E.N., McIVOR M.C.

Long-range interactions. III. Comparison of arene and olefin as neighboring groups towards an allylic anion.

J. Chem. Soc. B (1971) 4, 730-3

C.A. 74 (1971) 140586

Rates of D exchange at the 4-position of benzo (6,7) bicyclo (3.2.1)octa-2,6-diene were measured.

72-838

BUBNOV Yu.N., MIKHAILOV B.M.

Allyl-type rearrangement of tribenzylborane.

Izv. Akad. Nauk SSSR, Ser. Khim.

(1970) 9, 2156-7

C.A. 74 (1971) 141936

Deuteriomethanolysis of $(PhCH_2)_3B$ gave 76% $PhCH_2D$ and 24% $o\text{-}DC_6H_4Me$ but acidolysis with CD_2CO_2D gave only $PhCH_2D$.

72-839

BUNDEL Yu.G., PANKRATOVA K.G., REALI M., PRZHEVAL'SKII N.M., REUTOV O.A.

Isomerization during solvolysis of deuterium or tritium labelled and methyl-substituted cycloheptyl- and cyclopentyl-p-toluenesulfonates.

Zh. Org. Khim. 7 (1971) 3, 425-32

C.A. 75 (1971) 4944

Monomolecular solvolysis of the title compounds was accompanied by $\leq 12\%$ isomerization of the intermediate cycloalkyl carbonium ion via 1,2-, 1,3-, and 1,4-hydride shifts.

72-840

BURSEY M.M., BENEZRA S.A., HOFFMAN M.K.

Electrophilic aromatic substitution reactions. An ion cyclotron resonance study.

J. Amer. Chem. Soc. 92 (1970) 25, 7501-2

C.A. 74 (1971) 41613

The reaction of C_6D_6 with $MeONO_2$ and $EtONO_2$ was studied by ion cyclotron double resonance.

72-841

CHALLIS B.C., LAWSON A.J.

Chemistry of nitroso compounds. II. Nitrosation of phenol and anisole.

J. Chem. Soc. B (1971) 4, 770-5

C.A. 74 (1971) 140478

The kinetics of para nitrosation of p-D derivatives of PhOH, PhOMe by $NaNO_2$ in aqueous $HClO_4$ are reported.

72-842

CRAM D.J., ROITMAN J.N.

Electrophilic substitution at saturated carbon. XLVI. Grown ethers' ability to alter role of metal cations in control of stereochemical fate of carbanions.

J. Amer. Chem. Soc. 93 (1971) 9, 2231-4

C.A. 75 (1971) 19490

The D-H exchange and racemization of (-)4-biphenylylphenylmethoxydeuteriomethane were studied in the presence of dicyclohexyl-18-crown-6 cyclic polyether.

72-843

DE ROSSET A.J., PADRTA F.G.

Benzene-deuteroxyl exchange over deuterated γ-alumina.

J. Catal. 19 (1970) 1, 49-54

C.A. 73 (1970) 92002

The exchange reaction between benzene and a large excess of deuteroxyl on deuterated γ-alumina was investigated.

72-844

DOLBIER W.R.Jr., DAI S.-H.

Ene reaction of allene with perfluorocyclobutanone : deuterium isotope effect.

J. Chem. Soc. D (1971) 3, 166-7

C.A. 74 (1971) 140465

The title reaction proceeds via a concerted mechanism and the Adelman mechanism is ruled out.

72-845

EISCH J.J., CONSIDINE J.L.

Specific ortho-arylation in the photochemical rearrangements of

the tri-m-tolyl- and tri-p-tolyl-aluminum systems.

J. Organometal. Chem. 26 (1971) 1, C1-C3

C.A. 74 (1971) 42409

Deuterolysis of $(p\text{-}MeC_6H_4)_3$ Al in PhMe yielded HD and $4\text{-}MeC_6H_4C_6H_3DMe\text{-}6,3$.

72-846

FAUVARQUE J.F.

Mechanism of the reduction of ketones with Grignards. Reduction by an exo-α-deuterated isobornyl Grignard.

C.R. Acad. Sci. Ser. C 272 (1971) 11, 1053-6

C.A. 74 (1971) 125858

Deuterated carbinol was obtained by reduction of Ph iso-Pr ketone by the title Grignard via cis elimination of the Mg and the exo-C(3)-H.

72-847

FREEMAN P.K., GROSTIC M.F., RAYMOND F.A.

Reactive intermediates in the bicyclo(3.1.0) hexyl and bicyclo(3.1.0) hexylidene systems. VI. Free radical addition of methanethiol and methanethiol-d to bicyclo(3.1.0) hex-2-ene.

J. Org. Chem. 36 (1971) 7, 905-10

C.A. 74 (1971) 124494

The title addition yielded 3-deuterio-trans-2-methylthiobicyclo(3.1.0)hexane.

72-848

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

Effect of the radical bound to phosphorus in $C_6H_5Mn\text{-}(CO)_2PR_3$ 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 the title complexes was studied.

72-849

HUNTER D.H., SHEARING D.J.

ElcB reactions. Stereochemistry and the counterion.

J. Amer. Chem. Soc. 93 (1971)9, 2348-9

C.A. 75 (1971) 5077

The stereochemistry of the base-catalyzed H-D exchange reaction and elimination reaction of three D-labelled 1-methoxyacenaphthenes was studied.

72-850

JINDAL S.P., SOHONI S.S., TIDWELL T.T.

Steric effects in bicyclic ring systems. II. Angle strain and non-bonding repulsion in base-catalyzed deuterium exchange of bicyclic ketones.

Tetrahedron Lett. (1971) 11, 779-82

C.A. 74 (1971) 140484

The study was carried out on bicyclo (2.1.1) hexan-2-one, bicyclo (2.2.2) octan-2-one and exo- and endo-bicyclo (2.2.1) hexan-2-one.

72-851

KATZ T.J., CEREFICE S.

Stereochemistry of a rhodium-catalyzed rearrangement of a cyclopropane to a propylene.

J. Amer. Chem. Soc. 93 (1971) 4, 1049-50

C.A. 74 (1971) 124554

The 3,4-dideuterio bicyclo (3.2.1) octa-2,6-diene was obtained from 3,3-dideuterio derivative of tricyclo $(3.2.1.0^{2,4})$ oct-6-ene.

72-852

KEMP D.S.

Relative ease of 1,2-proton shifts. Origin of the formyl proton of salicylaldehyde obtained by the Reimer-Tiemann reaction.

J. Org. Chem. 36 (1971) 1, 202-4

C.A. 74 (1971) 41601

Phenol is treated with Na and $CHCl_3$ in D_2O to give o-HOC_6H_4CDO.

72-853

KUENTZEL H., WOLF H., SCHAFFNER K.

Photochemical reactions. 63. Photodecarbonylation of α-aryl aldehydes.

Helv. Chim. Acta 54 (1971) 3, 868-96

C.A. 74 (1971) 140519

Photolysis at 3130 Å of deuterated $RC_6H_4CMe_2CXO$ led mainly to decarbonylation.

72-854

LAURENT A., TARDIVEL R.

Electro-oxidation of organic iodides in acetonitrile solutions. Phenethyl-1,1-d_2 iodide. Allylic rearrangement and stereochemistry of the reaction.

C.R. Acad. Sci. Ser. C 272 (1971) 1, 8-10

C.A. 75 (1971) 29261

Anodic oxidation in MeCN of $PhCH_2CD_2I$ gave equal quantities of $PhCH_2CD_2NHAc$ and $PhCD_2CH_2NHAc$

72-855

MAGID R.M., WILSON S.E.

Thermal reactions of allylic mono- and dianions.

Tetrahedron Lett. (1971) 1,19-22

C.A. 75 (1971) 5003

3,4-Diphenyl-1-butene treated with BuLi and quenched with D_2O gave cis-$PhCHDCPh{:}CHCH_2D$.

72-856

MAJERSKI Z., BORCIC S., SUNKO D.E.

Label scrambling in the hydrolysis and borohydride trapping products of $(1,1\text{-}^2H_2)$ cyclopropylmethyl, (1-^2H_1) cyclobutyl, and $(2,2,4,4\text{-}^2H_4)$ cyclobutyl methanesulphonates.

Chem. Communic. (1970) 23, 1636-7

Bull. Signal. Sect. 150, 32 (1971) 7865

72-857

PAQUETTE L.A., STOWELL J.C.

Silver (I) ion catalyzed rearrangements of strained sigma bonds. III. Synthesis and degenerate thermal valence isomerization of pentacyclo $(3.3.2.0^{2,4}.0^{3,7}.0^{6,8})$ dec-9-ene.

J. Amer. Chem. Soc. 93 (1971) 10, 2459-63

C.A. 75 (1971) 19759

The dideuteration of the title compound is described.

72-858

SEIBL J.

Mass spectra of deuterated cycloalkanones.

Arch. Mass Spectral Data 1 (1970) 4, 714-63

C.A. 74 (1971) 124381

The mass spectra of 15 deuterated cycloalkanones were observed.

72-859

SHAPIRO R.H., LEVINE S.P., DUFFIELD A.M.

Electron impact-induced hydro-

gen scrambling in cyclohexanol and methylcyclohexanols.

Org. Mass Spectrom. 5 (1971) 4, 383-8

C.A. 75 (1971) 19391

The D attached to O undergoes partial scrambling with the ring H in the 2-,3-,5- and 6-positions prior the formation of the major primary fragment ions.

72-860

SHAPIRO R.H., TOMER K.B., BEYNON J.H., CAPRIOLI R.

Expulsion of OH from the $(M-C_2H_4)^+$ ion from ethyl benzoate : ring deuterated compounds.

Org. Mass Spectrom. 3 (1970)12, 1593-8

C.A. 74 (1971) 41547

Deuterated Et benzoates o-, m-, and p-d_1 were prepared.

72-861

SINGY G.A., BUCHS A.

Mass spectrometric study of trans-1,2-cyclopentanediol.

Helv. Chim. Acta 54 (1971) 2, 537-46

C.A. 74 (1971) 141184

Specifically D-labelled derivatives of trans-1,2-cyclopentanediol were prepared.

72-862

SNEEDEN R.P.A., ZEISS H.H.

Alkyl-transition metal compounds. VIII. Hydrogen transfer reactions.

J. Organometal. Chem. 27 (1971) 1, 89-93

C.A. 74 (1971) 112171

The interaction of tris(2,2-dideuterio-4-phenylbutyl) chromium and -iron with 1,7-octadiene and 3-phenylpropene yielded deuterio-2-octene and 1,2-dideuterio-3-phenylpropane and isomerization products.

72-863

VALLET A., JANIN A., ROMANET R.

Synthesis of deuterated acetylenic compounds. IV. Synthesis of α-acetylenic aldehydes deuterated on the aldehyde function.

J. Label. Compounds 7 (1971) 1, 80-3

3-Phenylprop-2-yn-1-al-1-d was prepared from PhC:CCHO via the deuterated dithiane which was obtained by reaction of dithiane with D_2O.

72-864

WARNER P., WINSTEIN S.

Protonated cis-bicyclo (6.1.0) nona-2,4,6-triene a monocyclic 1,3-bishomotropylium ion.

J. Amer. Chem. Soc. 93 (1971) 5, 1284-5

C.A. 74 (1971) 141079

The title compound was deuterated stereoselectively on the exo side to give the title ion-d_1.

72-865

WEEDON B.C.L., ANSELL M.F., RADZIWILL A.N.

Organic reactions in strong alkalis. VII. Fission of unsaturated acids by alkali fusion in potassium deuteroxide.

J. Chem. Soc. C (1971) 10, 1851-6

C.A. 75 (1971) 19446

Under the conditions of alkali fusion at 360°, H-D exchange occured on the C_6H_6 ring in BzOH and $Ph(CH_2)_2CO_2H$ and their p-Me_3C derivatives.

2.1.3 - Heterocyclic compounds

72-866

BEAK P., WATSON R.N.

Mechanism of hydrogen-deuterium exchange of 1-methyl-4-pyrimidone.

Tetrahedron 27 (1971) 5, 953-60

C.A. 74 (1971) 140502

The title exchange which give 1-methyl-4-pyrimidone-2-d was shown to involve initial deuteration at N-3.

72-867

BEAN G.P.

Acid-catalyzed proton exchange on pyrrole and N-methylpyrrole.

J. Chem. Soc. D (1971) 9, 421

C.A. 75 (1971) 19575

The title exchange was studied for systems containing 10% deuterioacetic acid with 1% deuteriotrifluoroacetic acid as catalyst.

72-868

BROWN M.D., COOK M.J., HUTCHINSON B.J., KATRITZKY A.R.

Conformational analysis of saturated heterocycles. XL. Stereochemistry of base-catalyzed hydrogen-deuterium exchange of methylene protons alpha to a sulfonyl group.

Tetrahedron 27 (1971) 3, 593-600

C.A. 74 (1971) 140732

The rates of H-D exchange were measured in aqueous Me_2SO_4.

72-869

ENGEWALD W., MUEHLSTAEDT M., WEISS C.

Hydrogen isotopic exchange reactions of nonbenzenoid aromatics. VI. Reactivity of nonequivalent positions of indolizine in electrophilic substitution.

Tetrahedron 27 (1971) 4,851-64

C.A. 74 (1971) 140707

The relative reactivities of the nonequivalent positions of indolizine were measured by H-D exchange.

72-870

FOWLER R.G., HIGGINS R.W.

Synthesis of t butyl $^2H_9$ thiophenes.

J. Label. Compounds 6 (1970) 4, 378-85

The title thiophenes were obtained by reaction of thienylmagnesium bromide with t butyl chloride $^2H_9$ and separated by preparative gas chromatography.

72-871

HAMBRIGHT P., SHEARS B., SHAD B.

Acid-catalyzed solvolysis reaction of zinc porphyrins having various basicities and zinc N-methylporphyrins.

J. Amer. Chem. Soc. 93 (1971) 3, 776-8

C.A. 74 (1971) 99158

The solvolysis of Zn meso-, deutero-, proto-, and dibromodeuteroporphyrins substituted in the 2 and 4 positions was studied.

72-872

LOADER C.E., ANDERSON H.J.

Pyrrole chemistry. XII. Mechanism of the reaction between the pyrrole Grignard reagent and acylating agents.

Can. J. Chem. 49 (1971) 7, 1064-9

C.A. 74 (1971) 140491

The title reaction was studied using deuterated compounds.

72-873

OBOL'NIKOVA E.A., GOLOVKINA L.S., VUL'FSON N.S., SAMOKHVALOV G.I.

Synthetic studies of polyene compounds. XXXII. Mass-spectrometric study of products of the electrophilic substitution of the methoxy group during synthesis of the coenzyme Q_1.

Zh. Obshch. Khim. 40 (1970) 10, 2329-33

C.A. 74 (1971) 87053

The preparation of 2-trideuteriomethoxy-3-methoxy-5-methyl-6-dimethylallyl-1,4-benzoquinone and 2,5-bis (dimethylallyl)-3-methyl-6-trideuteriomethoxy-1,4-benzoquinone is described.

72-874

SCHWETLICK K., UNVERFERTH K.

Kinetics of acid-catalyzed hydrogen isotope exchange in the thiophene, furan, selenophene, and pyrrole, as well as furan hydrolysis.

Wiss. Z. Techn. Hochsch. Chem. "Carl Schorlemmer" Leuna-Merseburg 12 (1970) 3/4, 230

C.A. 74 (1971) 124421

H-D exchange in selectively 2- and 3-deuterated heterocycles was studied.

72-875

WARREN W.A.

Preparation of deuteroglyoxylate and (A) DPND.

Anal. Biochem. 38 (1970) 2, 493-8

Biological Abstr. 52 (1971) 64533

The preparation of the title compounds (deutero DPN with the deuterium on the A side of the 4 position of the dihydropyridine ring) is described.

72-876

YU C-K., OLDFIELD D., McLEAN D.B.

Mass spectra of decahydroquinolines.

Org. Mass Spectrom. 4 (1970) Suppl. 147-55

C.A. 74 (1971) 99147

Several deuterated of the N-Me title compounds were prepared.

72-877

ZOLTEWICZ J.A., SMITH C.L., KAUFFMAN G.M.

Buffer catalysis and hydrogen-deuterium exchange of heteroaromatic carbon acids.

J. Heterocycl. Chem. 8 (1971) 2, 337-8

C.A. 75 (1971) 4966

The H-D exchange in the reactions of 3,5-dichloro-1-methylpyridinium chloride and 3,5-dichloropyridine-4-d 1-oxide was not catalyzed by buffer bases.

2.1.4 - Carbohydrates

72-878

HORTON D., JEWELL J.S., JUST E.K WANDER J.D.

Specific isotopic labelling of sugars. Specific C-deuteration of 1,6-anhydro-2,3-O-isopropylidene-β-D-talopyranose through enolization of an aldosulose derivative. NMR spectral studies.

Carbohyd. Res. 18 (1971) 1, 49-56

C.A. 75 (1971) 20822

2.1.5 - Peptides, Amino acids, Proteins

72-879

COHEN J.S., PUTTER I.

Isolation of deuterated amino acids.

Biochim. Biophys. Acta 222 (1970) 2, 515-20

C.A. 74 (1971) 39020

The preparative separation of a deuterated protein hydrolyate is described.

2.1.6 - Steroids

2.1.7 - Mineral compounds and Miscellaneous compounds

72-880

CANT N.W., BETT J.A.S., WILSON G.R., HALL W.K.

The vibrational spectrum of hydroxyl groups in hydroxyapatites.

Spectrochim. Acta A 27A (1971) 3, 425-39

Physics Abstr. 74 (1971) 32595

The exchange of OH group with D_2O was studied.

72-881

GUEDEL H.U., LUDI A., FISCHER P., HAELG W.

Neutron-diffraction study of $D_3Co(CN)_6$.

J. Chem. Phys. 53 (1970) 5, 1917-23

C.A. 73 (1970) 92474

The title compound was prepared from $H_3Co(CN)_6$.

72-882

LESUR P., VIRATELLE J.

Deuterium-enriched ammonia.

Ger. Offen. 2,041,799

C.A. 74 (1971) 93613

D-enriched NH_3 was obtained by isothermal isotopic exchange between synthesis gas and NH_3.

72-883

MIN K.W., RANDS D.G., BAIN R.L.

Deuterolysis of monofluorophosphate.

Inorg. Chem. 11 (1972) 1, 184-5

N.S.A. 26 (1972) 11633

The deuterolysis of PO_3F^{2-} was studied as a function of pD and temperature.

72-884

NAZZER D.B.

Fluid flow control in an isotope exchange system.

Can. 868,273

C.A. 74 (1971) 155010

An isotope separation system for the production of D_2O using a water-H_2S exchange in a multistage set-up is described.

72-885

NORMAN A.D., SLATER J.A.

Synthesis of a 6,9-deuterium-labelled decaborane-(14).

Inorg. Chem. 10 (1971) 1, 205-6

C.A. 74 (1971) 49210

The title compound was prepared by the conversion of the bridge-deuterium labelled decaborane to the pentadecahydro-nido-decaborate ion by reaction with BD_4 in monoglyme.

72-886

WEST R., GORNOWICZ G.A.

Polylithium compounds. V. Polylithium compounds from phenylpropynes and their polysilicon derivatives.

J. Amer. Chem. Soc. 93 (1971) 7, 1720-4

C.A. 74 (1971) 125776

Derivatization of mixture of $C_9Li_6H_2$ and $C_9Li_5H_3$ with D_2O

gives a mixture of deuterated 3- and 1-phenylpropynes.

2.2 - TRITIUM COMPOUNDS

2.2.0 - General

72-887

CHORVAT K.

Production of organic compounds labelled with tritium, carbon-14 and sulfur-35 and of sealed sources in Czechoslovakia.

Radioisotopy 10 (1969) 6, 951-7

C.A. 74 (1971) 133093

The methods for preparation of specifically and uniformly labelled organic compounds are reviewed.

72-888

FILIP J.

Preparation of tritium-labelled organic compounds. Choice of reaction conditions and the mechanisms.

Radioisotopy 11 (1970) 1, 61-100

C.A. 75 (1971) 28853

A review is given with 120 references.

2.2.1 - Aliphatic Compounds

72-889

CROMBIE L., CAMPBELL R.V., PATTENDEN G.

Synthesis of presqualene alcohol.

J. Chem. Soc. D (1971) 5, 218-9

C.A. 74 (1971) 112254

The preparation of tritiated squalene is described.

72-890

EGYED J., BEKE I., URST F.

Synthesis of α-tritium-labelled esters and nitriles.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 286-9

C.A. 74 (1971) 140874

RR^1CHCO_2K (R = H, Me, Et, iso-Pr; R^1 = CN, CO_2Et) were converted to the corresponding $RR^1C^3HCO_2K$ by equilibration with ^3H_2O at 20-100°.

72-891

FUCHS B., LEHMANN J., PAECH S.

Tritium labelling of the acetyl groups in polyol acetates by tritiated water in pyridine in the presence of technical silver (I) fluoride.

Chem. Ber. 104 (1971) 2, 668-70

C.A. 74 (1971) 88247

The title process at room temperature occurred only in O-acetyl derivatives of various polyol when at least 2 neighboring acetyl group were present.

72-892

GUCZI L., SHARAN K.M., TETENYI P.

Catalytic hydrogen exchange of ethane over a nickel catalyst.

Monatsh. Chem. 102 (1971) 1, 187-99

C.A. 74 (1971) 111271

^3H-H exchange in ethane over a Ni powder catalyst was studied.

72-893

HOSAKA A.

Recoil tritium reactions with methylsilanes.

Univ. Calif. (1971) 197 pp. Univ. Microfilms Order 72,2239

N.S.A. 26 (1972) 14999

The title reactions were studied to examine the reactivity

difference of C-H and Si-H bonds.

72-894

KUSHNER R., ROWLAND F.S.

Reactions of recoil tritium atoms with 1-butene and cis-2-butene. Average energy of the addition reaction.

J. Phys. Chem. 75 (1971) 25, 3771-81

N.S.A. 26 (1972) 8987

It was shown that substantial yields of butyl-t radicals are collisionally stabilized prior to decomposition to the smaller olefinic products.

72-895

PISAREV Yu.N., ZEL'VENSKII Ya. D., SHALYGIN V.A.

Tritium-labelled heptane.

Zh. Obshch. Khim. 40 (1970) 12, 2725-8

C.A. 74 (1971) 140764

Tritiated-labelled heptane was obtained by heating heptane and T_2O with a mixture of 23% WS_2, 5% NiS and 70% Al_2O_3 in a steel vessel 5 hr at 450°.

72-896

ROWLAND F.S., PALINO G.F.

Complete retention of configuration during the replacement of hydrogen by energetic tritium in dl - and meso $(CHFCl)_2$

J. Phys. Chem. 75 (1971) 9, 1299-305

C.A. 75 (1971) 5089

The direct substitution reactions proceed with retention of configuration.

X.2.2 - Aromatic Compounds

72-897

AVDONINA E.N.

Reactions of hot hydrogen atoms in irradiated C_6H_6 - C_6H_{12} and C_6H_6 - CH_3OH mixtures.

J. Inorg. Nucl. Chem. 33 (1971) 11, 3663-9

N.S.A. 26 (1972) 8944

The recoil tritium atoms reactions in the title mixtures were studied.

72-898

CACACE F., PEREZ G.

Aromatic substitution in the gas phase. Part. 1. Reaction of the helium tritiide molecular ion with halogenobenzenes.

J. Chem. Soc. B (1971) 11, 2086-9

N.S.A. 26 (1972) 8994

The reactions of the HeT^+ ion from the β decay of molecular tritium with gaseous halogenobenzenes were studied.

72-899

CACACE F., CIPOLLINI R., CIRANNI G.

Aromatic substitution in the gas phase. Part. II. Reactions of the helium tritiide ion with anisole, t-butylbenzene and $\alpha\alpha\alpha$-trifluorotoluene.

J. Chem. Soc. B (1971) 11, 2089-92

N.S.A. 26 (1972) 8993

In the title reactions, the tritium is found mainly in the meta position.

72-900

FOX R., SHERWOOD J.N.

Self-diffusion and the isotope mass effect in single crystalline benzene.

Trans. Faraday Soc. 67 (1971) 587, 3364-71

N.S.A. 26 (1972) 8854

The tracers were ^{14}C-labelled normal benzene and ^{3}H-labelled deuterobenzene.

72-901

GOLD V., BRETT C.L.

Substituent effects on the rate of reaction of aqueous hydrogen (tritium) atoms with aromatic compounds.

J. Chem. Soc. D (1971) 3, 148-9

C.A. 74 (1971) 140701

The reactions of tritium atom with PhR (R = Me, OMe, F, Cl, Br, CN and mesitylene) were studied.

72-902

HOSAKA A., ROWLAND F.S.

Recoil tritium reactions with cyclobutane-d_8. Excitation energies accompanying substitution of energetic tritium for deuterium.

J. Phys. Chem. 75 (1971) 25, 3781-90

N.S.A. 26 (1972) 8988

The title reactions were studied.

72-903

MISHIN V.I., KAPUSTIN Yu.M., KUMAKOVSKII A.I.

Production of preparations, labelled with tritium and carbon-14, with high specific activity and radiochemical purity using gas chromatography.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 242-51

C.A. 74 (1971) 140815

$^{14}C_6H_6$ was prepared from $Ba^{14}CO_3$ via $Ca^{14}C_2$ and $^{14}C_2H_2$ and purified by preparative gas-liquid chromatography using polyethylene glycol 2000 on an inert support.

2.2.3 - Heterocyclic Compounds

72-904

BATTERSBY A.R., KELSEY J.E., STAUNTON J.

Hydroxylation at saturated carbon : hemanthamine.

J. Chem. Soc. D (1971) 4, 183-4

C.A. 74 (1971) 112266

O-methylnorbelladine carrying ^{3}H labels at known configuration was prepared.

72-905

HOWELL C.F., VAN LEAR G., HARDY R.A. Jr.

Synthesis and identification of 2-dimethylamino-5-(phenyl-2-^{3}H)-2-oxazolin-4-one.

J. Label. Compounds 6 (1970) 4, 373-85

The title compound was prepared by tritiolysis of 5-(o-bromophenyl)-2-dimethyl-amino-2-oxazolin-4-one.

72-906

MARCIANI S., DALL'ACQUA F., COLOMBINI C.

Tritium labelling of some furocoumarins.

Ann. Chim. 59 (1969) 12, 1067-74

Biological Abstr. 52 (1971) 74067

The labelling and the purification of 12 furocoumarin derivatives with the Wilzbach method are described.

72-907

VDOVENKO V.M., BOBROVA V.N., GORDEEVA L.S., DEDOVA V.K.

Preparation of tritium labelled 2-deoxy-D-erythropentopyranose.

Radiokhimiya 13 (1971) 1, 113-7

C.A. 74 (1971) 142214

The title compound was prepared by exposing it on activated C to ^{3}H for 500 hr.

2.2.4 - Carbohydrates

72-908

DAVIDSON J.B., STANACEV N.Z.

Biochemistry of polyglycerophosphatides in central nervous tissue. I. Biosynthesis, structure, and enzymic degradation of phosphatidylglycerophosphate and phosphatidylglycerol in isolated sheep brain mitochondria.

Can. J. Biochem. 48 (1970) 6, 633-42

C.A. 73 (1970) 41744

Optimal conditions for the biosynthesis of the tritiated title compounds and their isolation are described.

72-909

FEDTKE C.

Intramolecular hydrogen transfer in isomerization reactions of sugar phosphates in the Calvin cycle.

Progr. Photosyn. Res. Proc. Int Congr. (1968) 3, 1597-603

C.A. 74 (1971) 39244

Chlorella species cells were fed with glucose tritiated at C-2 and with ^{14}C at C-1 and with fructose having ^{14}C at C-1 and tritiated stereospecifically at one of the two possible C-1 position.

72-710

MURAWSKY D.

Production of tritium-labelled cardiac glycosides.

Nov. Metody Poluch. Radioaktiv Prep. Sb. Dokl. Simp. (1969) 269-74

C.A. 74 (1971) 112391

The title compounds were labelled by the modified Wilzbach procedure and purified by paper or thin-layer chromatography.

72-911

NELSESTUEN G.L., KIRKWOOD S.

Simple, economical synthesis of uridine diphospho-N-acetylgalactosamine-6-^{3}H.

Anal. Biochem. 40 (1971) 2, 359-63

C.A. 74 (1971) 136238

The preparation of the title compound is based on the reaction of galactose oxidose with uridine diphospho-N-acetylgalactosamine followed by the reduction with $NaB^{3}H_4$ of the aldehyde.

72-912

VON SCHUCHING S.L., ABT A.F.

Syntheses of specifically labelled intermediates used in the preparation of carbon- and tritium-labelled L-ascorbic acid.

Methods Enzymol. 18 (1970) Pt A 3-22

C.A. 74 (1971) 142258

The title compounds were prepared using labelled glucose and L-xylose with $K^{14}CN$ as precursors.

2.2.5 - Peptides, Amino acids, Proteins

72-913

ACHEY P.M., BILLEN D., BELTHANENA H.P.

Single-strand breaks in gamma-irradiated ϕX 174DNA induced by exposure to alkali.

Int. J. Radiat. Biol. 20 (1971) 5, 501-4

Replicative Form 1 DNA labelled with ^{3}H-thymine was prepared by

growing ØX 174DNA on the thymine-requiring host E. Coli HF 4704.

72-914

AMLACHER E.

Quantitative evaluation of light-optical autoradiograms of cell smears in lipid extraction studies following tritium labelling.

Z. Med. Labortech. 11 (1970)2, 65-74

C.A. 74 (1971) 50431

Ehrlich ascites cells were tritiated by incubation with 7,12-dimethylbenz(a)anthrene-^{3}H for 21 hr.

72-915

ANDOH T., KATO K., TAKAOKA T., KATSUTA H.

Carcinogenesis in tissue culture : XIII. Binding of 4-nitroquinoline 1-oxide-^{3}H to nucleic acids and proteins of L.P3 and JTC-25.P3 cells.

Int. J. Cancer 7 (1971) 3, 455-67

Biological Abstr. 52 (1971) 102740

72-916

ARKHANGEL'SKII V.V., KOTEL'NIKOV V.M., KONDAKOVA L.I.

Incorporation of tritiated thymidine in human brain tumor cells.

Vop. Neirokhir 35 (1971) 1, 15-21

Biological Abstr. 52 (1971) 96758

Tritiated thymidine incorporation was studied in vitro by autoradiography.

72-917

EISENBRANDT K.

^{3}H-Streptomycin through the Wilzbach reaction.

Isotopenpraxis 6 (1970) 12, 480-2

C.A. 74 (1971) 84373

Streptomycin sulfate was tritiated through the Wilzbach reaction and purified on a column containing Wofatit CP.

72-918

GALAND P., CHRETIEN J.

Is double-labelling with two levels of ^{3}H-thymidine a reliable method for evaluating mitotic parameters?

J. Nucl. Biol. Med. 13 (1970) 87-93

Genetic Abstr. 03 (1970) G 9036

In several instances, valid discrimination can be made between lightly and heavily labelled nuclei.

72-919

GARWEG G., SCHNEIDER E.J.

Regional incorporation of optical isomers of the amino acid proline-^{3}H (revealed) in mouse brain autoradiograms.

Experientia 27 (1971) 4, 377-8

C.A. 75 (1971) 2330

D,L-Proline-^{3}H and L-proline-^{3}H were injected i.p. into the mouse.

72-920

GINTSBURG G.I.

Incorporation of tritium-labelled thymidine into the cytoplasm of oocytes during different periods of their growth.

Ontogenez 2 (1971) 1, 79-87

C.A. 74 (1971) 137144

Cytoplasmic labelling was most intense in medium-sized oocytes during previtellogenesis and vitellogenesis.

72-921

HAYASHI N.

Synthesis of thiamine-^{3}H by ^{6}Li (n, α)^{3}H nuclear reaction.

Takeda Kenkyusho-Ho 30 (1971)1, 22-4

N.S.A. 26 (1972) 11852

Thiamine-^{3}H hydrochloride was prepared from 2-methyl-4-amino-5-aminomethylpyrimidine which was tritiated by the title reaction in an atomic pile.

72-922

JAN K.J., BOYES J.W.

Incomplete synchrony of labelling in homologues of the autonomal pairs.

Can. J. Cytol. 12 (1970) 927-33

Genetic Abstr. 03 (1970) G 9745

The 10 autosomes of Musca domestica L. ocra str. are somatically paired and each pair was labelled by ^{3}HTdR incorporation.

72-923

JORDAN P.M., AKHTAR M.

The mechanism of action of serine transhydroxymethylase.

Biochem. J. 116 (1970) 2, 277-86

Nuclear Med. (1971) 4109

The preparation of stereospecifically tritiated glycines is described.

72-924

KIRBY G.W., MICHAEL J.

Labelling of aromatic amino acids stereoselectively with tritium in the β-methylene group : stereochemistry of hydroxylation in the biosynthesis of hemanthamine.

J. Chem. Soc. D (1971) 8, 415-6

C.A. 75 (1971) 20941

72-925

KIRBY G.W., MICHAEL J.

Labelling of aromatic amino acids stereoselectively with tritium in the β-methylene group : stereochemistry of hydroxylation in the biosynthesis of hemanthamine.

J. Chem. Soc. D (1971) 4, 187-8

Catalytic hydrogenation of acylaminocinnamic acids proceeds cis with high stereoselectively.

72-926

KOPECNY V., TREBICHAVSKY I.

Resistance of tritium activity in adenine-2,8-T labelled rabbit sperm.

Ann. Biol. Anim. Biochim. Biophys. 9 (1969) 4, 463-73

Biological Abstr. 52 (1971) 104519

Rabbit spermatozoa were labelled in vivo by injecting a male with 6mCi of 2,8-T-adenine.

72-927

KOVACS A., MEZO I., TEPLAN I., MARTON J.

Synthesis of amino acids labelled with tritium in various positions.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 275-85

C.A. 74 (1971) 142322

Tritiated phenylalanine derivative was prepared by addition of ^{3}H to Et α-benzoylamino cinnamate in EtOAc solution with Pd catalyst.

72-928

LACHAPELLE J.M.

Autoradiographic study of the in vitro incorporation of tri-

tiated thymidine in normal human skin and in certain epidermal proliferations.

Pathol. Eur. Suppl. 5 (1970) 1, 215 pp.

C.A. 74 (1971) 40585

The patterns of the autoradiographic labelling following the incorporation of thymidine-^3H into normal skin are described.

72-929

LAM THANH H., MORGAT J.L.

Process for the preparation of tritium marked molecules.

B.F. 2,039,530

The preparation of tritiated ocytocine, ACTH, insuline is described.

72-930

MORGAT J.L., LAM THANH HUNG.

Tritiation of hormone polypeptides.

Symp. Progr. Tech. Nucl. Pharmacodyn. (1970) 73-80

C.A. 75 (1971) 15523

Three methods are discussed : substitution of H by gaseous T in a heterogeneous system, incorporation of amino acids in the course of total synthesis and catalytic hydrogenolysis of halogenated polypeptides in the presence of T.

72-931

OSINSKI P.A., BLUARD-DECONINCK J.M., SCHANCK K.

Synthesis of N'-2,4-dinitrophenyl-3,5,6-^3H-L-lysine.

J. Label. Compounds 7 (1971) 1, 56-61

The title compound was prepared from the 1-fluoro-2,4-dinitrobenzene-3,5,6-^3H and from the N-α-carbobenzoxy-L-lysine.

72-932

REDDING T.W., SCHALLY A.V.

Preparation of tritiated thyrotropin releasing hormone (TRH) by the Wilzbach method.

Int. J. Appl. Radiat. Isotop 21 (1970) 12, 742-4

C.A. 74 (1971) 100401

The preparation of the title compound is described.

72-933

SIMONOV E.F.

Hot synthesis of tritium-labelled amino acids.

Vestn. Mosk. Univ. Khim. 11 (1970) 6, 739-40

C.A. 74 (1971) 88275

A mixture of glutamic acid and Li_2CO_3 was irradiated with slow neutrons. The method is unsuitable as a preparative method for ^3H labelled higher amino acids but it can be used for preparation of labelled lower amino acids.

72-934

TANACAS B., MEZO I., BURSICS L., TEPLAN I.

New data on the synthesis of organic compounds labelled with carbon-14 and tritium.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 290-300

C.A. 74 (1971) 142323

The synthesis of ^{14}C-labelled amino acids via the Strecker synthesis is described.

72-935

VAITUKAITIS J., HAMMOND J., ROSS G., HICKMAN J., ASHWELL G.

A new method of labelling human chorionic gonadotropin for physiologic studies.

J. Clin. Endocrinol. Metab. 32 (1971) 2, 290-3

Biological Abstr. 52 (1971) 65956

The title compound was tritiated by reduction with tritiated borohydride after oxidation with periodate.

72-936

VDOVENKO V.M., BOBROVA V.N., GORDEEVA L.S., DEDOVA V.K.

New process for preparing fixed tritium-labelled purine nucleotides.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 348-62

C.A. 74 (1971) 142269

8-Tritioadenosine 5' phosphate was prepared by reaction of T gas over Pd/C with 8-bromoadenosine 5' phosphate obtained by reaction of 8-bromo-2',3'-O-isopropylideneadenosine with pyrophosphoryl chloride.

72-937

VINIK A.I., JOUBERT S.M., DEPPE W.M.

Problems in the labelling of polypeptide hormones.

S. Afric. Med. J. 44 (1970) 44, 1261-4

Nuclear Med. (1971) 3772

Some of the problems involved in the labelling of polypeptide hormones are reviewed.

72-938

VISWANATHAN K.V., GARANA A.U., LAKSHMY Mrs.R., SARKAR B.R.

Preparation of high specific activity tritium labelled amino acids.

Proc. Chem. Symp. 1 st 23-26 sept. (1969) 1, 178-81

C.A. 74 (1971) 18483

The amino acids were sealed in an apparatus with T_2O, freshly reduced Pt and a trace of HOAc.

72-939

WIMBER D.E., STEFFENSON D.M.

Localization of 5 S RNA genes on Drosophila chromosomes by RNA-DNA hybridization.

Science 170 (1970) 3958, 639-41

C.A. 74 (1971) 10843

RNA-^{3}H with a high specific activity was prepared from larvae of D.melanogaster grown for 4 days in contact with uridine-^{3}H.

2.2.6 - Steroids

72-940

ABUL-HAJI Y.J.

Catalytic reduction of 3 β-hydroxyandrost-4-ene-17-one with tritium : I The distribution and configuration of label in 3 β-hydroxy-5 α-androstane-17-one.

J. Label. Compounds 7 (1971) 1, 33-9

The title reduction gave a mixture of 3 β-hydroxy-5 α-androstane-17-one and 3 β-hydroxy-5α-androstane-17-one.

72-941

BROSSER B.I., KROWAS S.T.

Acetylation of cortisol by a human astrocytoma.

J. Clin. Endocrinol. Metab. 31 (1970) 5, 589-91

C.A. 74 (1971) 51587

Cortisol-21-acetate was produced in vitro from 1,2-^{3}H-labelled cortisol.

72-942

EMILIOZZI R., CONDOS A., AUDINOT M., PICHAT L.

Synthesis of two epimeric 3-hydroxy-15-^{3}H-17-oxo androst-5-enes and related compounds.

Bull. Soc. Chim. Fr. (1971) 1, 131-5

Index Litt. Nucl. Fr. (1971) 9255

72-943

FISHMAN J., GUZIK H.

Preparation of tritium labelled estetrol testra 1,3,5 (10)triene 3,15α,16α,17β tetrol 6,7^{3}H.

J. Label. Compounds 6 (1970) 4, 340-4

The preparation of the title compound is described.

72-944

FRANTZ I.D.Jr., GREV J.E., ENER M.

Synthesis and use of labelled sterols.

Progr. Biochem. Pharmacol. (1969) 5, 24-34

C.A. 74 (1971) 39286

The chemical synthesis of cholesterol-4-^{14}C, methostenol-4-^{14}C, cholesterol-7α-^{3}H, $\Delta^{5,7,24}$cholestatrienol-3-^{3}H, demosterol-26-^{14}C and 7-dehydrocholesterol-2,4-^{3}H is described.

72-945

FREDERIKSEN D.W., WILSON J.D.

Partial characterization of the nuclear reduced nicotinamide adenine dinucleotide phosphate: Δ^{4}-3-ketosteroid 5α-oxidoreductase of rat prostate.

J. Biol. Chem. 246 (1971) 8, 2584-93

C.A. 75 (1971) 5130

Various tritiated steroids were used as substrates for the title enzyme.

72-946

THOMPSON M.J.

Preparation of tritium-labelled sterols and the synthesis of labelled-24-azacholesterol.

Lipids 6 (1971) 4, 233-7

Biological Abstr. 52 (1971) 93687

2,4-^{3}H-Sterols were prepared via the technique of exchange-labelling of keto steroids and their subsequent conversion to sterols.

72-947

WILKINSON M., COOMBS M.M., GOWER D.B.

The synthesis and purification of 4-^{14}C- and 7α-^{3}H-androsta-4,16-dien-3-one.

J. Label. Compounds 6 (1970) 4, 386-94

The title compounds were prepared using modifications of a method due to Henbest and purified by column chromatography on silicic acid impregnated with silver nitrate.

2.2.7 - Mineral compounds and Miscellaneous compounds

2.3 - CARBON-14 COMPOUNDS

2.3.0 - General

See also :

72-887 Production of organic compounds labelled with tritium carbon-14 and sulfur-35 and of sealed sources in Czechoslovakia.

2.3.1 - Aliphatic compounds

72-948

BOLGRANIS J.C., BLANCHARD M.

Catalytic oxidation of butenes by air on a V_2O_5-MoO_3 catalyst. Analysis of the various reac-

tions.

Bull. Soc. Chim. Fr. (1971) 3, 1093-7

C.A. 75 (1971) 4992

Oxidation of 1-butene-^{14}C-4 gave moleic acid labelled on the 4 C atoms.

72-949

DURST H.D., LEETE E.

Synthesis of geraniol-7-^{14}C.

J. Label. Compounds 7 (1971) 1, 52-5

The title compound was prepared from acetone-2-^{14}C.

72-950

ELIAS H., LOETZSCH K., WEIMER K.

Carbon-14 labelling of tertiary aliphatic amines by alkyl groups exchanges.

Chem. Ber. 104 (1971) 2, 683-5

C.A. 74 (1971) 87264

The preparation of $MeCH_2{}^{14}CH_2Bu_2N$, $^{14}CH_3Me_2N$, $Me^{14}CH_2Et_2N$, and $MeCH_2{}^{14}CH_2Pr_2N$ is described.

72-951

FEIL V.J., ASCHIBACHER P.W., LAMOUREUX C.H.

Synthesis of 1-(α-methylalkylthiocarb-^{14}C-amoyl)-2-(methylthiocarbamoyl)hydrazine.

J. Label. Compounds 6 (1970) 4, 401-2

The title compound was prepared by treating crotyl chloride with $KS^{14}CN$ in DMF and treating the labelled thiocyanate with $MeNHC(S)NHNH_2$.

72-952

KRITCHEVSKY D.

Synthesis of labelled lipids : early history.

Progr. Biochem. Pharmacol. 5 (1969) 1-10

C.A. 74 (1971) 38233

The early methods of synthesis of various labelled lipids such as methanol-^{14}C, palmitic acid-6-^{14}C, cholesterol-4-^{14}C and cholesterol-3-^{2}H are reviewed.

72-953

MATSUMOTO J.

Effects of high-molecular-weight sulfhydryl reagents on the erythrocyte membrane.

Ochanomizu Igaku Zasshi 18 (1970) 3, 87-102

C.A. 74 (1971) 137822

Dextran acetoxymercurianiline was labelled with ^{203}Hg or ^{14}C.

72-954

PAUL D., GROEBE A.

Electron microscopic autoradiography. Method for the study of fibers.

Nukleonika 15 (1970) 4, 355-70

Bull. Signal. Sect. 161 32 (1971) 5924

Cellulose fibers were labelled with ^{14}C or ^{65}Zn tracers.

72-955

SCHUETTE H.R., UNVERRICHT A.

Syntheses of radioactively labelled compounds. 27. Preparation of γ-aminobutyric-4-^{14}C acid.

Z. Chem. 11 (1971) 3, 107-8

C.A. 75 (1971) 19665

The title compound was obtained by reaction of $BrCH_2CH_2COOH$ with $K^{14}CN$ followed by hydrogenation in the presence of Pt.

72-956

STARK G.R.

Aspartate transcarbamylase. Use

of primary kinetic and solvent deuterium isotope effects to delineate some aspects of the mechanism.

J. Biol. Chem. 246 (1971) 9, 3064-8

C.A. 74 (1971) 135579

^{14}C- and ^{18}O-labelled carbamyl phosphates were used.

72-957

ZUPANSKA J., WIZA G.

Synthesis of trichloroacetic acid-2-^{14}C.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 335-8

C.A. 74 (1971) 140856

The title compound of 92% radiochemical purity was obtained by chlorination of $^{14}CH_3CO_2H$ with Cl at 110-70° in the presence of Ac_2O, P and I.

2.3.2 - Aromatic compounds

72-958

BANFI D., VOLFORD J., PALLOS L., ZOLYOMI G.

Labelling of 1-benzyl-1-(3'-dimethylaminopropoxy)-cycloheptane fumarate (active substance of the drug Halidor) with ^{14}C isotope.

J. Label. Compounds 7 (1971) 1, 62-8

The ^{14}C was introduced into the benzyl group and into the dimethylamino moiety of the dimethylaminopropoxy side chain.

72-959

CHRZCZONOWICZ S., OSTASZEWSKI B., REDLICHOWSKI W., WŁODARCZYK M.

Synthesis of ε-caprolactam-2-^{14}C.

Bull. Acad. Pol. Sci. Ser. Sci. Chim. 18 (1970) 9, 513-5

C.A. 74 (1971) 41646

The title compound was prepared by reaction of hydrazoic acid with cyclohexanone-1-^{14}C which was obtained by the carbonation of the $BrCH_2(CH_2)_4CH_2Br$ Grignard 1,5-dimagnesium derivative with $^{14}CO_2$.

72-960

COLLINS C.J., HARDING C.E.

Molecular rearrangements. XXVII. Relative rates of 6,2- and 3,2-hydride shift in the norbornyl cation.

Justus Liebigs Ann. Chem. 745 (1971) 124-34

C.A. 75 (1971) 19561

The preparation of 3-cyclopentenyl-1-^{14}C-ethyl tosylate and of 2-exo-norbornyl-4-^{14}C tosylate is described.

72-961

COLONNA A.O., GROS E.G.

Synthesis of 3,3-dimethylallyl-1-^{14}C alcohol and 3,3-dimethylacrylic-1-^{14}C acid.

J. Label. Compounds 7 (1971) 1, 84-6

The preparation of the title compounds is described.

72-962

DELRUE C., HEUDE M., BOUCHOULE C., BLANCHARD M.

Synthesis and cyclization of 3(carboxy-^{14}C methyl)cyclopentanecarboxylic acid.

Bull. Soc. Chim. Fr. (1971) 3, 1026-31

C.A. 74 (1971) 141056

The title compound was synthesized by the reaction of $EtO_2{}^{14}CCH_2Br$ with Et-cyclopentanone-3-carboxylate and cyclized by pyrolysis in the presence of BaO and a Pb or Th salt.

72-963

INAMOTO T., KIM S.G., TSUNO Y., YUKAWA Y.

Hofmann rearrangement. IV. Kinetic isotope effect of N-chlorobenzamide.

Bull. Chem. Soc. Jap. 44 (1971) 10, 2776-9

N.S.A. 26 (1972) 14828

Phenyl-1-^{14}C and carbonyl-^{14}C labelled N-chlorobenzamides were prepared.

72-964

LIGGERO S.H., MAJERSKI Z., SCHLEYER P.v.R., WOLF A.P., REDVANLY C.S., WYNBERG H., BOERMA J.A., STRATING J.

Preparation of ring-labelled adamantane derivatives. II. 2-Adamantanone-2-^{14}C, adamantane-2-^{14}C and 1-methyladamantane -2- or -4-^{14}C.

J. Label. Compounds 7 (1971) 1, 3-10

A simple synthetic route leading to the incorporation of ^{14}C into the secondary position of the adamantane nucleus is described.

72-965

MARSHALL D.R., REYNOLDS-WARNHOFF P., WARNHOFF E.W., ROBINSON J.R.

Bromination of norbornene : the question of bromonium ions vs. 6,1-hydride shift.

Can. J. Chem. 49 (1971) 6, 885-903

Norbornene-5,6-^{14}C was prepared and the degradation of the 2-exo, 3-endo-dibromonorbornane showed that norbornene-5,6-^{14}C is brominated by 2 ionic routes : from a bromonium ion and from a cation formed by 6,1-hydride shift.

72-966

SCHLEYER P.v.R., MAJERSKI Z., LIGGERO S.H., WOLF A.P.

Degenerate isomerization of adamantane.

J. Chem. Soc. D (1970) 23, 1596-7

C.A. 74 (1971) 31424

Treatment of adamantane-2-^{14}C with $AlBr_3$ in CS_2 at 110° for 8 hr gives 78,4% of adamantane with totally scrambled C atoms.

See also :

72-900 Self-diffusion and the isotope mass effect in single crystalline benzene.

72-903 Production of preparations, labelled with tritium and carbon-14, with high specific activity and radiochemical purity using gas chromatography.

2.3.3 - Heterocyclic compounds

72-967

LEETE E.

Biosynthesis of the hemlock and related piperidine alkaloids.

Accounts Chem. Res. 4 (1971) 3, 100-7

C.A. 74 (1971) 100250

The biosynthesis of ^{14}C-labelled coniine is discussed in detail.

72-968

LOWRY L.K., HERMAN Y.F., SAUBERLICH H.E.

Preparation of riboflavin (UL)-^{14}C.

J. Label. Compounds 5 (1969) 4, 363-70

The preparation of the title compound is described. Degradation of riboflavin with light and NaOH indicated that the ^{14}C

was present in both the isoalloxazine ring and in the side chain.

72-969

PICHAT L., DESCHAMPS J., MASSE B., DUFAY P.

Comparison of the influence of the trimethylsilyloxy, dimethylsilyloxy and tert-butoxy groups on the reactivity of lithiated pyridines. Preparation of thymine-methyl-^{14}C.

Bull. Soc. Chim. Fr. (1971) 6, 2110-4

Chemischer Informationsdienst Organische Chemie (1971) 38, 009

The title compound was prepared by lithiation of 5-bromo-2,4-bis (terbutoxy) pyrimidine in THF and treatment with $^{14}CH_3I$.

72-970

PLIENINGER H., WAGNER C., IMMEL H.

Synthesis and incorporation of 4-(E-4-hydroxy-3-methyl-2-butenyl-4-^{14}C) tryptophan and -tryptamine in clavine alkaloids.

Justus Liebigs Ann. Chem. 743 (1971) 95-111

Chemischer Informationsdienst Organische Chemie (1971) 17, 338

The title compounds were prepared from N-acetylindole-4-acetyldehyde and Et 2-triphenylphosphoranylidenepropionate.

72-971

PREISS M., SPENCER I.D.

Specifically carbon-14 labelled 2-allylpiperidine.

Chem. Ber. 104 (1971) 6, 1967-75

Chemischer Informationsdienst Organische Chemie (1971) 34,308

The title compound was prepared by reaction of DL-lysine-2-^{14}C with N-bromosuccinimide and reaction of the intermediate Δ^1-piperidine-2-^{14}C with CH_2CHCH_2MfCl.

2.3.4 - Carbohydrates

See also :

72-909 Intramolecular hydrogen transfer in isomerization reactions of sugar phosphates in the Calvin cycle.

2.3.5 - Peptides, Amino acids, Proteins

72-972

HOTZ G.

Uv-sensitization of phage T4 by 5-bromouracil and the occurrence of DNA strand breaks.

Stud. Biophys. 18 (1969) 1, 63-70

C.A. 74 (1971) 137012

BU-2-^{14}C phage and thymine-2-^{14}C phage were prepared from coliphage T4Bo^r.

72-973

KIMURA M., OTAKI N., NAKAE I., KOBAYASHI S.

Studies on lysozyme. II. Preparation of radioactive egg white lysozyme in vivo.

Ind. Health 8 (1970) 1/2, 17-21

Biological Abstr. 52 (1971)83825

The labelled lysozyme was prepared by a DEAE-cellulose chromatography from the radioactive egg white obtained 24-48 hr after injection of tryptophan-3-^{14}C in a white leghorn hen.

72-974

MAIER W., GROEGER D.

Nonincorporation of 5-hydroxytryptophan in the biosynthesis of Strychnos alkaloids.

Z. Naturforsch B 25 (1970) 10,

1192

C.A. 74 (1971) 39247

Strychnine, brucine, and β-colubrine were not labelled when 2 year-old Strychnos nux-vomica plants were fed with methylene-^{14}C-labelled DL-5-hydroxytryptophan.

72-975

MILLWARD D.J.

Protein turnover in skeletal muscle. I. Measurement of rates of synthesis and catabolism of skeletal muscle protein using ^{14}C-sodium carbonate to label protein.

Clin. Sci. 39 (1970) 5, 577-90

C.A. 74 (1971) 51207

The turnover of rat skeletal muscle protein was observed after the administration of ^{75}Se-selenomethionine, ^{14}C-arginine and $Na_2{}^{14}CO_3$.

72-976

NERY R.

Binding of radioactive label from labelled phenacetin and related compounds to rat tissues in vivo and to nucleic acids and bovine plasma albumin in vitro.

Biochem. J. 122 (1971) 3, 311-5

C.A. 75 (1971) 18285

The binding of Et-^{14}C-labelled p-nitrophenetole, p-phenetidine-HCl and phenacetin to bovine plasma albumin, salmon sperm DNA and yeast RNA was studied.

72-977

PICHAT L., PHUNG NHU LIEM, GUERMONT J.P.

Preparation of 2-carbon-14 labelled DL-amino acids.

Bull. Soc. Chim. Fr. (1971) 3, 837-9

Chemischer Informationsdienst Organische Chemie (1971) 24, 357

DL-Leucine-2-^{14}C and DL-valine-2-^{14}C were prepared by the reduction of acylimidazole derivatives of isovaleric acid-1-^{14}C and isobutyric acid-1-^{14}C respectively with $LiAlH_4$ followed by Strecker reaction of the aldehydes.

72-978

VANDERHEIDEN B.S.

Preparation of labelled nucleotides. III. Carbon-14-labelled adenosine, guanosine, and inosine phosphates, and phosphorus-32-labelled inosine monophosphate.

Anal. Biochem. 40 (1971) 2, 331-5

C.A. 74 (1971) 135135

The preparation of the title compounds is described.

72-979

VOLFOVA A., FRIEDRICH A., CHVOJKA L.

Electron microscopic autoradiographic study of RNA isolated from apple-tree callus tissue labelled with 6-benzylaminopurine-8-^{14}C.

Biol. Plant. 12 (1970) 5, 327-31

C.A. 74 (1971) 10455

RNA from apple-tree callus tissue was labelled with 6-benzylaminopurine-8-^{14}C and isolated from the tissue.

See also :

72-934 New data on the synthesis of arganic compounds labelled with carbon-14 and tritium.

2.3.6 - Steroids

72-980

DALY M.M.

Biosynthesis of squalene and sterols by rat aorta.

J. Lipid. Res. 12 (1971) 3, 367-75

C.A. 75 (1971) 86145

Labelled squalene, lanosterol, lathosterol, and cholesterol were biosynthesized by rat liver aorta from 2-^{14}C-labelled DL-mevalonate.

72-981

PALMER K.H., HANDY R.W., WALL M.E.

The synthesis of 6-chloro-17-hydroxypregna-4,6-diene-3,20-dione-4-^{14}C acetate (Chlormadione-4-^{14}C acetate).

J. Label. Compounds 7 (1971) 1, 16-22

The preparation of the title compound is described in detail.

See also :

72-944 Synthesis and use of labelled sterols.

72-947 The synthesis and purification of 4-^{14}C-, and 7α-^{3}H-androsta-4,16-dien-3-one.

72-1069 Purification of the testosterone binding protein.

72-952 Synthesis of labelled lipids : early history.

2.3.7 - Mineral compounds and Miscellaneous compounds

72-982

DOMINEY D.A., WICKHAM A.J.

γ-Radiation induced isotope exchange in the carbon monoxide-carbon dioxide system. Studies in silica vessels.

Trans. Faraday Soc. 67 (1971) 585, 2598-2606

N.S.A. 26 (1972) 8894

The behavior of the isotopes ^{13}C, ^{14}C and ^{18}O in the CO-CO_2 system was studied.

72-983

RYBKIN Yu. F., ZAITSEVA V.I., GEL'FMAN A.Ya.

Determination of carbonate impurities in alkali metal halide single crystals by infrared spectroscopy.

Zh. Prikl. Spektrosk. 13 (1970) 4, 643-5

C.A. 74 (1971) 93066

The NaI crystals containing Na_2CO_3 labelled with ^{14}C were manufactured by the Stockbarger method.

72-984

TEPLAN I., SZARVAS J., MEZO I., OMBOLY C.

Carbon-14 labelled alkali cyanides.

Hung. Teljes 292

C.A. 74 (1971) 27203

The preparation of K^{14}CN in > 99% purity is based on the reaction between $K_2{}^{14}CO_3$ and NH_3 at 650-700°.

72-985

YUN C.K., FREDERICKSON A.G.

Anisotropic mass diffusion in liquid crystals.

Mol. Cryst. Liquid Cryst. 12 (1970) 1, 73-91

C.A. 74 (1971) 92316

The diffusion molecules were tagged with ^{14}C.

2.4 - HALOGEN LABELLED COMPOUNDS

72-986

ANDO A., HISADA K.

Synthesis of iodine-131-labelled O-iodobenzoic acid.

Radioisotopes 19 (1970) 7, 319-21

C.A. 74 (1971) 48432

The title compound was obtained by heating a mixture of an aqueous solution of o-iodobenzoylglucoronic acid, acetate buffer, KI solution and $Na^{131}I$.

72-987

CAMNER P., PHILIPSON K., FRIBERG L., HOLMA B., LARSSON B. SVEDBORG J.

Human tracheobronchial clearance studies : with fluorocarbon resin particles tagged with ^{18}F.

Arch. Environ. Health 22 (1971) 4, 444-9

Biological Abstr. 52 (1971) 75112

An aerosol of monodisperse particles of fluorinated ethylene propylene was tagged with ^{18}F.

72-988

DEGROOT L.J., MATOVINOVIC J.

Relation of the nucleic acids and nitrogen content of subcellular fractions to the synthesis of iodotyrosine in vitro.

Arq. Brasil. Endocrinol. Metabol. 17 (1968) 1, 47-53

C.A. 74 (1971) 84910

Protein bound ^{131}I formation was determined in fractions of sheep thyroid tissue.

72-989

DEL ROSARIO C., ROSA B.

Design of the radioisotope center.

CONF. 680423 17-20

N.S.A. 26 (1972) 15385

Albumin and oleic acid labelled with ^{131}I are the most frequently prepared molecules.

72-990

DETHLEFSEN L.A.

An evaluation of radioiodine labelled 5 iodo-2'-deoxyuridine as a tracer for measuring cell loss from solid tumors.

Cell Tissue Kinetics 4 (1971) 2 123-38

Excerpta Medica Cancer (1971) 3932

The preparation and use of the title compound were discussed.

72-991

DRESSLER S., GABRIEL R.

Radiation load in the radioiodine test.

Wiss. Beitr. Martin-Luther Univ. Halle-Wittenberg (1969)1, 95-8

C.A. 74 (1971) 83713

It was shown that the 2-isotope method reduces the dose during the radioiodine test.

72-992

DUNN J.T.

Amino acid neighbors of thyroxine in thyroglobulin.

J. Biol. Chem. 245 (1970) 22, 5954-61

C.A. 74 (1971) 9974

The preparation of rabbit thyroglobulin labelled in vivo with ^{123}I is described.

72-993

GHALIOUNGUI P., ABDEL-WAHAB M., EL-MAHDI A.M., NICOLA W.G.

Studies in different types of goiter with radioactive iodine. I. Function tests and chromatographic studies on cases from Cairo.

Drug. Res. 1 (1968) 1, 58-76

C.A. 74 (1971) 85461

The ^{131}I uptake in the thyroid,

serum protein-bound ^{131}I and the conversion ratio of serum ^{131}I to PB^{131}I were studied.

72-994

GHALIOUNGUI P., ABDEL-WAHAB M.F. ASSEM S.K.

Comparative chromatographic studies on endemic and sporadic goiter.

Drg. Res. 1 (1968) 1, 77-90

C.A. 74 (1971) 85462

Stable ^{127}I and radioactive ^{131}I were determined by chromatographic techniques.

72-995

HUESTIS W.H., RAFFERY M.A.

Use of fluorine-19 nuclear magnetic resonance to study conformation changes in selectively modified ribonuclease S.

Biochemistry 10 (1971) 7, 1181-6

Biological Abstr. 52 (1971) 101233

The protein was labelled covalently with a small fluorinated molecule at a specific site.

72-996

JARBOE R.H. Jr.

Radio-labelled synthesis, purification, photodisintegration and biological fate studies of the agricultural chemicals 2,3,5-triiodobenzoic acid and 2-nitro-1,1-bis (p-chlorophenyl)-propane.

Purdue Univ. (1968) 158 pp.

Univ. Microfilms Order n° 70-4013

C.A. 74 (1971) 12084

72-997

JOERCHEL E., LANTELME F., CHEMLA M.

Kinetics of isotopic exchange between chloromethyl formate and chloride ion.

J. Chim. Phys. Physicochim. Biol. 67 (1970) 10, 1807-11

Index Litt. Nucl. Franç. (1971) 8876

The kinetics of the exchange of ^{36}Cl between LiCl and chloromethyl formate in MeCOEt was studied at -21 to + 22,5°.

72-998

KOBAYASHI I., GREER M.A.

Studies on the enzymatic hydrolysis of peptide bound iodoamino acids.

Endocrinology 88 (1971) 2, 309-17

Nuclear Medicine (1971) 2804

Thyroglobulin was labelled with radioiodine in vivo under different conditions of iodine supply.

72-999

KOLB H.J., GRODSKY G.M.

High specific activity iodination and displacement radioimmunoassay of fructose-1,6-diphosphatase.

Proc. Soc. Exp. Biol. Med. 137 (1971) 2, 464-8

C.A. 75 (1971) 15501

The preparation of radioiodinated fructose-1,6-diphosphate with high specific activity is described.

72-1000

MAKOWSKI Ch., WIZA J.

Preparation of methyl bromide labelled with bromine-82, sealed into glass ampuls.

Nov. Metody Poluch. Radioaktiv Prep. Sb. Dokl. Simp. (1969) 221-7

C.A. 74 (1971) 124691

$Me^{82}Br$ was synthesized by reac-

ting Me_2SO_4 with irradiated KBr in the presence of H_2SO_4.

72-1001

RUSIN K., WAGNER M., PSZONA B.

Electrolytic labelling of human blood serum albumin with iodine isotopes.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 80-7

C.A. 75 (1971) 15946

The preparation of human serum albumin labelled with radioiodine is described.

72-1002

STANKO V.I., IROSHNIKOVA N.G.

Isotope exchange in various aromatic iodine compounds.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 486-510

C.A. 74 (1971) 125760

Various aromatic iodine compounds were labelled by isotope exchange with $Na^{131}I$ in THF or dioxane in the presence of CuCl Rose Bengal, was labelled by isotope exchange with ^{131}ICl in H_2O containing a phosphate buffer.

72-1003

SUNER A., DE SALAS G.N.B., MITTA A.E.A.

Variables which influence the labelling of iodoantipyrine-^{131}I.

Radiochim. Acta 14 (1970)3/4, 157

C.A. 74 (1971) 59758

The yields of the labelled iodoantipyrine obtained by isotopic exchange increased when uv light was used. A pH of 4.6 gave the maximum yields and the yields increasing temperature and with increasing concentration of AcOH.

72-1004

TROMBALLA H.W.

Preparation and determination of ^{36}Cl-labelled chloride, chlorate and perchlorate.

Radiochem. radioanal. Letters 4 (1970) 5, 285-92

Bull. Signal. Sect. 170, 32 (1971) 14822

The title compounds were prepared by electrolyse starting from $Na^{36}Cl$.

2.5 - PHOSPHORUS-32 COMPOUNDS

72-1005

ANGHILERI L.J.

Phosphorus-32 labelling of chromium complexes.

Acta Isotop. 10 (1970) 1/2, 131-8

C.A. 74 (1971) 135950

^{32}P-labelled Cr^{3+}-β-glycerophosphate complex was prepared from Na-β-glycerophosphate, $CrCl_3$ and inorganic $^{32}PO_4^{3-}$.

72-1006

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. (1971) 26, 727-8

Chemischer Informationsdienst anorganische Chemie (1971) 37, 024

The preparation of the title compound labelled with ^{14}C and ^{32}P is described.

72-1007

ZHIVKOV V.

Measurement of uridine diphosphate-glucuronic acid concentra-

tions and synthesis in animal tissues.

Biochem. J. 120 (1970) 3, 505-8

C.A. 74 (1971) 49816

The incorporation of ^{32}P-phosphate into UDP-glucuronic acid in vivo was investigated.

See also :

72-978 Preparation of labelled nucleotides. III. Carbon-14-labelled adenosine, guanosine and inosine phosphates and phosphorus-32-labelled inosine monophosphate.

2.6 - SULFUR-35 COMPOUNDS

72-1008

FITZGERALD J.W., THOMAS P., TUDBALL N., WINTERBURN P.J.

Preparation of D-glycerate 3-O-sulfate, DL-glycerate 3-O-sulfate-^{35}S and D-glucose 6-O-sulfate.

Biochem. J. 121 (1971) 3, 529-30

C.A. 74 (1971) 100312

Di-K DL-glycerate 3-O-sulfate-^{35}S was prepared by direct sulfation of Ca DL-glycerate with a mixture of $ClSO_3H$ and $Cl^{35}SO_3H$.

72-1009

HAMAMURA K., MATOURA T., KUJIRA S.

Synthesis of sulfur-35-labelled dl-α-tocopherolthiol acetate.

Radioisotopes 19 (1970) 10, 465-8

C.A. 75 (1971) 20690

The title compound was obtained by reaction of diazotized dl-α-tocopheramine with alkaline $Na_2{}^{35}S_2$ followed by treatment with powdered Zn in $(AcO)_2O$.

72-1010

KOLINA J., FEJTEK J., HORAK F.

Preparation of thyreostatic substances labelled with sulfur-35.

Radioisotopy 10 (1969) 6, 825-88

C.A. 74 (1971) 135951

Many thiopyrimidine derivatives were labelled by isotopic exchange between elementary ^{35}S and thiopyrimidine derivatives in pyridine.

72-1011

LLOYD A.G., EMBERY G., FOWLER L.J.

Heparin degradation. I. Preparation of ^{35}S-sulfamate derivatives for studies on heparin-degrading enzymes of mammalian origin.

Biochem. Pharmacol. 20 (1971) 3, 637-48

C.A. 75 (1971) 715

The preparation of the K salts of 2-deoxy-2-^{35}S-sulfoamino-D-glucose, ^{35}S-sulfoamino-L-serine, ^{35}S-sulfoamino-heparin and ^{35}S-sulfoaminochitosan is described.

See also :

72-887 Production of organic compounds labelled with tritium, carbon-14 and sulfur-35 and of sealed sources in Czechoslovakia.

2.7 - OXYGEN LABELLED COMPOUNDS

72-1012

ANTOSHIN G.V., MINACHEV Kh.M., MASHKOVICH A.Ya., TKACHENKO O.P.

Radiation isotopic exchange between aluminum oxide and molecular oxygen.

Khim. Vys. Energ. 5 (1971) 1, 76

C.A. 74 (1971) 70503

Redistribution of ^{18}O was studied on an Al_2O_3-O system in which the Al_2O_3 was degassed at 400° and the O adsorbed at liquid N temperature during their γ-irradiation.

72-1013

CANONICA L., MANITTO P., VALCAVI U.

Mechanisms of biological lactonization. Conversion of 3-methyl-4-phenyl-3-butenamide into 3-benzyl-4-hydroxy-2-butenoic acid lactone.

Gazz. Chim. Ital. 101 (1971) 3, 217-24

C.A. 75 (1971) 86118

The title conversion was studied using ^{18}O-3 methyl-4-phenyl-3-butenamide. It was shown that ^{18}O was localized on the lactone ring carbonyl group.

72-1014

JOHNSON E.R., LADOV E.N., HOLTZSCHEITER E.W.Jr.

Method of increasing the concentration of ^{18}O in an oxygen-containing compound.

U.S. Patent 3,622,480

N.S.A. 26 (1972) 14856

The method comprises irradiating a compound containing an oxygen-containing anion with high energy radiation in the presence of a gas containing ^{18}O.

72-1015

JOHNSON E.R., LADOV E.N.

Method of producing compounds enriched in ^{18}O.

U.S. Patent 3,622,481

N.S.A. 26 (1972) 14857

The ^{18}O concentration is increased by irradiating KNO_3 with high energy radiation and separating the resulting ^{18}O enriched KNO_2 from the KNO_3.

72-1016

KUKHTENKO I.I.

Mechanism of the rearrangement of N-phenyl-hydroxylamine into p-aminophenol.

Zh. Org. Khim. 7 (1971) 2, 330-3

C.A. 74 (1971) 111362

PhNHOH rearranged to p-$H^{18}OC_6H_4NH_2$ in $H_2{}^{18}O$ containing HCl or H_2SO_4.

See also :

72-956 Aspartate transcarbamylase. Use of primary kinetic and solvent deuterium isotope effects to delineate some aspects of the mechanism.

2.8 - NITROGEN-15 COMPOUNDS

72-1017

ARENAS R.J., GOMEZ V., PARALLADA BELLOD R.

Direct synthesis of nitrogen-15 labelled succinimide using nitrogen-15 labelled ammonium chloride.

An. Quim. 67 (1971) 1, 23-4

C.A. 75 (1971) 5175

The title compound was prepared from succinic anhydride and $^{15}NH_4Cl$ by dry distillation at $<200°$.

72-1018

HOLM A., JENSEN G.M.

Sulfur extrusion reactions. I. Decomposition of S-(alkoxythiocarbonyl) thiohydroxylamines.

Acta Chem. Scand. 25 (1971) 1, 339-40

C.A. 74 (1971) 124584

Decomposition of a mixture of $ROCS_2{}^{15}NH_2$ (R = Me, iso-Pr) and $EtOCS_2NH_2$ at room temperature produced scrambling of the ^{15}N in the products $ROCS_2{}^{15}NH_2$ (R = Me, iso-Pr).

72-1019

JANZEN A.F., KRAMER E.A.

Cyclic imides. Preparation of silylphthalimides and characterization by infrared and mass spectrometry.

Can J. Chem. 49 (1971) 7, 1014-8

C.A. 74 (1971) 141958

A series of silylphthalimides labelled with ^{15}N were prepared.

72-1020

STRUKOV O.G., SMIRNOV S.K., DUBOV S.S., DANILINA L.L.

Nitrogen-15 substituted amides and nitriles. VI. Synthesis and ir spectra of nitrogen-15 substituted diamide and dinitrile of adipic acid.

Zh. Org. Khim. 7 (1971) 4, 693-5

Chemischer Informationsdienst Organische Chemie (1971) 30, 197

The first title compound was obtained by reaction of $ClCO(CH_2)_4COCl$ with aqueous $^{15}NH_3$.

72-1021

TILBURY R.S., DAHL J.R., MONAHAN W.G., LAUGHLIN J.S.

Production of ^{13}N labelled ammonia for medical use.

Radiochem. Radioanal. Lett. 8 (1971) 6, 317-23

N.S.A. 26 (1972) 11844

The production of ^{13}N-labelled ammonia for medical use by irradiating methane gas with 7.5 MeV deuterons is described.

2.9 - CARBON-13 COMPOUNDS

72-1022

AGRAWAL J.P.

Enrichment of ^{13}C by chemical exchange of carbon dioxide with amine carbamates in non-aqueous solvents.

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

N.S.A. 26 (1972) 11887

A comparison of the title method with other competitive methods indicates that the process is fairly attractive at its present stage of development.

72-1023

BROWN L.L.

Chemical exchange method of concentrating carbon isotopes.

U.S. PAT. 3,607,010

N.S.A. 26 (1972) 9050

This method of concentrating carbon isotopes comprises contacting a liquid organic phase containing a cyanohydrin with an aqueous phase containing a cyanide. The cyanohydrin is enriched in ^{13}C.

72-1024

CLARK J.C., BUCKINGHAM P.D.

Preparation of carbon-11-labelled carbon monoxide and carbon dioxide.

Radiochem. Radioanal. Lett. 6 (1971) 5, 281-6

C.A. 75 (1971) 43645

A target system is described for production of the title compounds by d bombardment of B_2O_3.

72-1025

DE JONG F., SINNIGE H.J.M., JANSSEN M.J.

Carbon skeletal rearrangement and hydrogen migration in thiophene.

Org. Mass. Sectrom. 3 (1970) 12 1539-48

C.A. 74 (1971) 41546

The preparation of ^{13}C-labelled thiophenes is described.

72-1026

VENEMA A., NIBBERING N.M.M., DE BOER T.J.

Mass spectrometry of aralkyl compounds with a functional group. X. Reinvestigation of the structure of the $(C_8H_9)^+$ ion from 1-phenylethyl bromide and of the molecular ion $(C_8H_8)^+$ from styrene by use of carbon-13 labelling.

Org. Mass Spectrom. 3 (1970) 12, 1589-92

C.A. 74 (1971) 41548

The side-chain of 1-phenylethyl bromide and of styrene was specifically labelled with ^{13}C.

72-1027

WENDISCH D., NAEGELE W., FELTKAMP H.

NMR investigations of dialkyl-substituted piperidines. II. 2,5-, 2,6-, and 3,5-dimethyl-piperidine.

Org. Magn. Resonance 2 (1970) 6, 561-8

C.A. 74 (1971) 124367

The preparation of 3,5-dimethylpiperidines labelled with ^{13}C is described.

72-1028

WILLIAMS D.H., DICKINSON R.J.

Possible isomerization reactions in benzene, iodobenzene, and phenol upon electron impact.

J. Chem. Soc. B (1971) 2, 249-51

C.A. 74 (1971) 99136

Benzene-1-^{13}C-1-d and PhI-1-^{13}C were prepared.

2.10 - TECHNETIUM LABELLED COMPOUNDS

72-1029

ANONYMOUS

Radioisotopes derived from generators.

Radioisotope Production and Quality Control IAEA (1971) 657-743

N.S.A. 26 (1972) 11834

Procedures are described for ^{113}Sn-^{113}In, ^{115}Cd-^{115m}In, ^{87}Y-^{87m}Sr, and ^{99}Mo-^{99m}Tc generators and preparations incorporating radioisotopes.

72-1030

BERGER R., JOHANNSEN B.

Technetium-99m labelling of spherical human serum albumin particles.

Isotopenpraxis 7 (1971) 5, 188-9

C.A. 75 (1971) 85068

Spherical HSA particles are put into short column in batches of 100 mg followed by 10 ug of Sn^{2+} from an aqueous $SnCl_2$ solution. After 5 min the HSA particles can be labelled with ^{99m}Tc.

72-1031

BURDINE J.A., RYDER L.A., SONNEMAKER R.E., DE PUEY G., CALDERON M.

^{99m}Tc-human albumin microspheres (HAM) for lung imaging.

J. Nucl. Med. 12 (1971) 3, 127-30

Biological Abstr. 52 (1971) 75115

The title compound is simple and rapid to prepare using a commercial kit.

72-1032

DAVIS M.A.

^{99m}Tc iron hydroxide macroaggregates. Stability studies.

Radiology 98 (1971) 2, 448-9

Nuclear Medicine (1971) 2475

The exclusion of oxygen during the formation of the title compound leads to higher binding efficiencies and a shelf life of at least 2 months.

72-1033

EL-GARHY M., ABDULLAH E., EL-BAYOUMY S.

Production of technetium-99m and ^{99m}Tc-labelled compounds.

IAEA - 124 (1970) 141-7

Bull. Signal. Sect. 150 32 (1971) 7787

72-1034

EL-GARHY M., KASSEM A.A., AB-DULLAH E.

Milking system for the preparation of technetium-99 m labelling tyrosine.

Strahlentherapie 139 (1970) 6, 713-5

C.A. 74 (1971) 10114

A method for the labelling of the title compound with a ^{99}Mo-^{99m}Tc milking system is described.

72-1035

FEW J.D., SHORT M.D., THOMSON M.L.

Preparation of technetium-99m labelled particles for aerosol studies.

Radiochem. Radioanal. Lett. 5 (1970) 6, 275-7

C.A. 74 (1971) 83819

The title compounds were prepared by chloroform extraction of labelled Na pertechnetate as the tetraphenylarsonium pertechnetate from a ^{99}Mo-^{99m}Tc generator. The solvent was removed, the residue dissolved in a xylene-methyl isobutyl ketone polystyrene solution and the resulting solution was converted to aerosol particles by an air pressure driven disk.

72-1036

HICKL E.J., DELUCCA A., HAUBOLD U.

Comparative studies on placental localization by means of ultrasound and radioactive isotopes.

Geburtsh. Frauenheilk. 30 (1970) 4, 316-27

Nuclear Medicine (1971) 3989

Erythrocytes were marked with ^{99m}Tc and serum protein with ^{113m}In.

72-1037

HONDA T., KAZEM I., CROLL M.N., BRADY L.W.

Instant labelling of macro- and micro-aggregated albumin with ^{99m}Tc.

J. Nucl. Med. 11 (1970) 10, 580-5

C.A. 74 (1971) 10256

The title compounds were obtained by mixing denatured human serum albumin with pertechnetate-^{99m}Tc followed by removal of the nonbound free pertechnetate.

72-1038

LEACH K.G., EYNON A.L.

Preparation of ^{99m}Tc-labelled albumin.

Int. J. Appl. Radiat. Isotop. 22 (1971) 1, 53-4

C.A. 74 (1971) 135946

The title compound was prepared by a modified Persson and

Lidén method.

72-1039

GILL G.D.

Rapid preparation of macroaggregates of ^{99m}Tc-sulfur and human serum albumin.

Int. J. Appl. Radiat. Isotop. 22 (1971) 1, 42-4

C.A. 75 (1971) 929

The title compound was prepared by reacting HSA with a suspension of technetium sulfide-S particles.

72-1040

PERSSON R.B.R., NAVERSTEN Y.

Technetium 99m sulfide colloid preparation for scintigraphy of the reticuloendothelial system.

Acta Radiol. Ser. Tpb 9 (1970) 6, 567-76

Nuclear Medicine (1971) 2481

The preparation of the title colloid is described.

72-1041

SCHWARTZ K.D., KRUEGER M.

Experiences with an improved method for spleen scintigraphy with technetium-99m.

Strahlentherapie Sonderb. 70 (1970) 422-5

C.A. 70 (1971) 83907

The labelling of the title compound was improved when $SnCl_2$ was used.

72-1042

TANTIC H.N., EL-SAADANI A.M., EL-GENGEHY M.T., EL-SAYED A.L.

New method for blood volume estimation using ^{99m}Tc-labelled erythrocytes.

J. Egypt. Med. Ass. 53 (1970)1, 29-33

C.A. 74 (1971) 50425

The preparation of the title compound is described.

72-1043

VARAGNOLO C., VIOZZI A., MINCATO C.

Localization of the placenta with radioactive isotopes. First experiences with erythrocytes labelled with ^{99m}Tc.

Minerva Ginec. 22 (1970) 9, 477-9

Nuclear Medicine (1971) 4421

Erythrocytes were labelled with radiotechnetium.

72-1044

WEINSTEIN M.B., JOENSUU O.I. DUFFY P., BENNETT B.

Technetical difficulties in labelling erythrocytes with ^{99m}Tc. Identification of agglutinating substance.

J. Nucl. Med. 12 (1971) 4. 183-5

C.A. 74 (1971) 136126

Al was shown to be the agglutinating substance.

2.11 - INDIUM-113 LABELLED COMPOUNDS

72-1045

TANNO K.

Preparation of indium-113-EDTA.

Radioisotopes 19 (1970) 10. 458-61

C.A. 75 (1971) 938

The title compound was obtained by mixing the eluate of ^{113m}In from ^{113}Sn - ^{113m}In Ster-cow with $FeCl_3$ and NaCl dissolved in 0,04N HCl. This mixture is then added to EDTA, NaOH and NaOAc in H_2O.

72-1046

HUHN E.A., FASSBENDER C.W.

Indium 113m in nuclear medical diagnostics. III. Radioprotection problems for patients and personnel.

Aerztl. Lab. 16 (1970) 9, 275-83

Nuclear Medicine (1971) 3365

The physical parameters of ^{113}Sn - ^{113m}In are described in detail.

72-1047

FLOYRAC R., ITTI R., BESNARD J.C.

Measurement of renal function and glomerular filtration rate using ^{113m}In-diethyltriaminopentacetic acid.

Ann. Phys. Biol. Med. 4 (1970) 3, 115-38

Nuclear Medicine (1971) 4418

The glomerular renal function was studied using ^{113m}In DTPA.

See also :

72-1036 Comparative studies on placental localization by means of ultrasound and radioactive isotopes.

2.12 - MISCELLANEOUS LABELLED COMPOUNDS

72-1048

COMAR D., LOC'H C., RIVIERE R., KELLERSHOHN C.

Use of radioactivation analysis and whole-body counting for studying rubidium metabolism in normal subjects.

Strahlentherapie Sonderb. 70 (1970) 245-52

C.A. 74 (1971) 84988

The use of Rb as a tracer for studying K metabolism is shown to be not rigorously valid.

72-1049

GLADYSHEV V.P., RUBAN L.M., PETROVA L.P.

Cementation of metals by amalgams in nonaqueous solutions. II. Cementation of antimony from solutions of its halides in nonpolar organic solvents by a sodium amalgam.

Elektrokhimiya 5 (1969) 9, 1067-70

C.A. 72 (1970) 135268

Sb was labelled with ^{137}Sb by an ion exchange technique using radioactive Sb powder.

72-1050

HIGASI T., HISADA T., NAKAYAMA Y., KINOSITA Y., KAWAI K., SUZUKI S., KATO H. et al.

Diagnosis of malignant tumor with ^{67}Ga-labelled citrate.

Radioisotopes 19 (1970) 7, 311-8

C.A. 74 (1971) 10183

The use of ^{67}Ga-citrate was discussed.

72-1051

KOMOR M., VERTES A., DEZSI I., RUFF I.

Investigation of the electron exchange reaction between iron (II) and iron(III) by Moessbauer effect in solution.

Acta Chim. (Budapest) 66 (1970) 3, 285-92

C.A. 74 (1971) 68384

$Fe(ClO_4)_3$ solution was labelled with ^{57}Fe.

72-1052

KRONRAD L., RATUSKY J., MALEK P., VAVREJN B., KOLC J.

Preparation of some mercuric derivatives of fluorescein labelled with isotopes mercury-197 or mercury-203. II. Condi-

tions for optimum yield of individual fractions.

J. Label. Compounds 6 (1970) 4, 319-25

The detailed procedures for preparing difluoresceinyl-mercury-^{203}Hg and hydroxymercuriofluorescein-^{203}Hg are given.

72-1053

MADDOCK A.G., PENGER J., SIEKIERSKA K.E.

Chemical consequences of the nuclear reactions ^{58}Fe (n γ) ^{59}Fe and ^{57}Co(EC)^{57}Fe in soluble Prussian blue.

J. Chem. Soc. A (1970) 19, 3255-61

C.A. 74 (1971) 37085

K Fe Fe(CN)$_6$. H_2O was prepared with ^{58}Fe in either the cation or the complex.

72-1054

MIKHAILOV M., SORANTIN H.

Preparation of oil-soluble zinc-65.

Kerntechnik 12 (1970) 11, 482-5

C.A. 74 (1971) 93605

The preparation of the title compound was investigated.

72-1055

OTTO P.P.H.L.

Radioactive selenomethionine.

Ger. Offen 2,026,937

C.A. 74 (1971) 126057

The title compound was prepared from Se enriched with ^{75}Se via MeSeLi, MeSeOH and MeSeNa and reaction with bis (haloethyl) dioxopiperazine.

72-1056

RATUSKY J., KRONRAD L., MALEK P., VAVREJN B., KOLC J.

Preparation of some mercuric-derivatives of fluorescein labelled with isotopes mercury-197 or mercury-203. I. Preparation methods.

J. Label. Compounds 6 (1970) 4, 311-8

The preparation of the title compounds is described.

See also :

72-953 Effect of high-molecular-weight sulfhydryl reagents on the erythrocyte membrane.

72-975 Protein turnover in skeletal muscle. I. Measurement of rates of synthesis and catabolism of skeletal muscle protein using ^{14}C-sodium carbonate to label protein.

3 - RADIODECOMPOSITION, STABILITY, STORAGE

72-1057

BABERNICS L.

Reactions of the gaseous carbonium ions from the decay of (1,2-$^3H_2$) - cyclopentane.

J. Chem. Soc. B (1971) 12, 2313-6

N.S.A. 26 (1972) 11858

The nature and the reactions of the gaseous ions formed from the β decay of a tritium atom in cyclopentane were investigated.

72-1058

BANCROFT K.C.C., HOWE G.R.

Reactivity parameters and aromatic systems. II. Detritiation of substituted fluoranthenes.

J. Chem. Soc. B (1971) 2, 400-3

C.A. 74 (1971) 99219

Rates of detritiation in CF_3CO_2H were determined for bromo- and nitro-substituted 2-, 3-, and 8-tritiofluoranthenes.

72-1059

JONES J.R., ELVIDGE J.A., O'BRIEN C., EVANS E.A.

Isotopic hydrogen exchange in purine, adenine, adenosine, and benzimidazole.

J. Chem. Soc. D (1971) 8, 394-5

C.A. 74 (1971) 140700

Rates of detritiation at 85° are given for the title compounds catalyzed with H_2O or D_2O.

72-1060

LAL M.

Hydrogen peroxide yields in γ-radiolysis of deaerated cysteine solutions.

Proc. Chem. Symp. 1 st 2 (1969) 219-21

C.A. 74 (1971) 105628

In irradiated air-free cystine solution the reaction between cysteine and H_2O_2 to produce cysteine is very slow.

72-1061

PRITASIL L., FILIP J., EKL J. NEJEDLY Z.

Stability of labelled organic compounds.

Radioisotopy 10 (1969) 4/5, 525-63

C.A. 74 (1971) 132959

The stability of labelled organic compounds was studied under various storage conditions.

72-1062

RING M.A., BAIRD R.B., SEFCIK M.D.

Thermal decomposition of methyldisilane and 1,2-dimethyldisilane.

Inorg. Chem. 10 (1971) 5, 883-6

C.A. 75 (1971) 6012

The gas-phase pyrolyses of the title compounds were examined in the presence of excess $EtSiD_3$.

4 - PURIFICATION, SEPARATION

72-1063

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

N.S.A. 26 (1972) 11886

The distribution of ^{18}O and ^{13}C isotope by chemical exchange of carbon dioxide with amine carbamates was investigated.

72-1064

BOURQUE D.P., NAYLOR A.W.

Simple electrophoretic procedure for separation of RNA on mixed agarose-acrylamide gel columns.

J. Chromatogr. 56 (1971) 1, 79-86

C.A. 74 (1971) 136300

The preparation of mixed agarose-acrylamide gels for the separation of high-molecular weight species of RNA is described.

72-1065

GULYASSAY P.F., OKEN R.L.

Assay of cyclic 3',5'-nucleotide phosphodiesterase in tissue homogenates.

Proc. Soc. Exp. Biol. Med. 137 (1971) 1, 361-5

C.A. 75 (1971) 449

Cyclic AMP-^{3}H was separated from labelled derivatives by chromatographic separation using thin-layer plates of polyethylenimine cellulose.

72-1066

HENNIG W., KUNZ W., SCHNIEDERS B., WILLIAMS K.

Comparative analysis of the extraction methods of Kirby and Georgiev in extracting mouse liver RNA fractions.

Z. Naturforsch. B 26 (1971) 3, 235-43

C.A. 75 (1971) 15870

Only 50% of the total labelled RNA was extracted by the Kirby method.

72-1067

MALESZEWSKA H., DYBCZYNSKI R.

Use of labelled atoms for developing a method of separating gold from platinum and platinum-group metals on cation-exchange resins.

Simp. Ispol'z. Metod. Mechen At. Soversh. Tekhnol. Protsessov Proizvod Primen. Yad.-Fiz. Metod Anal. Sostava Veshchestva (1968) 182-94

C.A. 74 (1971) 18599

The strongly acidic cation exchange resin DOWEX 50W and acidic Amberlite IRC were used.

72-1068

MARTIN L.C., VAGUE P.

Simple method of purification by silica in microgranular form of the somatotropic hormone.

C.R. Soc. Biol. 164 (1970) 2, 338-41

Nuclear Medicine (1971) 2766

The labelling and purification can be done in a single tube.

72-1069

MERCIER B.C., ALFSEN A., BAULIEU E.E.

Purification of the testoterone binding protein.

Ann. Endocrinol. 31 (1970) 4 bis, 833-4

C.A. 74 (1971) 83145

The title tritiated compound was purified by Cohn fractionation, chromatography on DEAE-cellulose and DEAE-Sephadex A-50 and filtration through Sephadex G-75.

72-1070

PAUS P.N.

Liquid scintillation counting of RNA : A simple procedure for extraction from sucrose gradients.

Anal. Biochem. 38 (1970) 2, 364-73

Biological Abstr. 52 (1971)

81988

The method permits quantitative extraction of RNA from a range of aqueous solutions.

72-1071

PLETNER D.

Use of preparative thin-layer chromatography for purifying phosphorus-32 labelled organic esters of phosphoric acid.

Nov. Metody Poluch. Radioaktiv. Prep. Sb. Dokl. Simp. (1969) 408-24

C.A. 75 (1971) 5156

Preparative thin-layer chromatography on kieselgel N was used for purification of the title compounds.

72-1072

QUABBE H.J.

Double antibody separation technique.

Int. Congr. Clin. Chem. (Proc.) 7th 3 (1969) 148-54

C.A. 75 (1971) 86617

Both free and bound radiolabelled hormones were separated by chromatography.

72-1073

SHAW W.A., HARLAN W.R.

An accurate, high-efficiency radioassay for carbon-14 and tritium compounds separated by silica gel thin layer chromatography.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10031

72-1074

VANDENHEUVEL W.J.A., SMITH J.L., COHEN J.S.

Gas-liquid chromatography and mass spectrometry of carbon-13 enriched and deuterated amino acids as trimethylsilyl derivatives.

Advan. Chromatogr. Proc. Int. Symp. 6th (1970) 293-306

C.A. 74 (1971) 112411

The retention times of the deuterated Me_3Si amino acids derivatives were shorter than those of the protium analogs.

See also :

72-822 Separation of methane and methane-d_4 on saran active carbon.

72-870 Synthesis of t butyl $^2H_9$ thiophenes.

72-879 Isolation of deuterated amino acids.

72-884 Fluid flow control in an isotope exchange system.

72-917 ^3H-Streptomycin through the Wilzbach reaction.

72-910 Production of tritium-labelled cardiac glycosides.

72-947 The synthesis and purification of 4-^{14}C- and 7α-^3H-androsta-4,16-dien-3-one.

5 - ANALYSIS

5.0 - GENERAL

72-1075

ANONYMOUS

Analytical control of radiopharmaceuticals. Proceedings of a panel. Vienna 7-11 July 1969.

I.A.E.A. (1970) 223 pp.

Bull. Signal. Sect. 320, 22 (1971) 7570

72-1076

BARTIK M., MESTER J.

Use of radioisotopes in the determination of enzyme activity.

Chem. Listy 65 (1971) 1, 61-70

C.A. 74 (1971) 83283

The methods useful in the quantitative estimate of 50 enzymes by means of labelled substrates are reviewed.

72-1077

BENAKIS A.

Liquid scintillation techniques applied to the study of drug metabolism.

Symp. Progr. Tech. Nucl. Pharmacodyn. (1970) 133-42

C.A. 75 (1971) 18089

The liquid scintillation techniques are reviewed.

72-1078

BENSON R.H.

Analysis process and device for the detection and measurement of small quantities of mixture components.

B.F. 2,027,689

Labile hydrogen-containing compounds were analyzed by passing the samples on a labile tritium substrate and by measuring the radioactivity of the resulting compound.

72-1079

BENSON R.H.

Radioactive analysis of labile hydrogen-containing compounds.

U.S. Pat. 3,560,158

C.A. 74 (1971) 82824

The title compounds were analyzed by passing the samples through a T-containing substrate and by measuring the radioactivity of the resulting T-containing compounds.

72-1080

BRANSOME E.D. Jr., GROWER M.F.

Liquid scintillation counting of ^{3}H and ^{14}C on solid supports. A warning.

Anal. Biochem. 38 (1970) 2, 401-8

Biological Abstr. 52 (1971) 75022

It was shown that the efficiency of counting labelled molecules decreases when the molecules are small enough to penetrate into the matrix of the support.

72-1081

BRANSOME E.D. Jr., GROWER M.F.

Local absorption of low energy β by solid supports.

Scintillator and liquid scintillation counting San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10560

The detection efficiency of ^{3}H and ^{14}C on a variety of solid support was examined.

72-1082

CHIBA M.

A simple method of correcting autoradiographic background : Estimation of labelling index in cell nuclei.

Radioisotopes 19 (1970) 11, 501-6

Biological Abstr. 52 (1971) 104399

The labelling index $Li=1-Yo/Po$ where Yo is the proportion of cell nuclei without silver grains to the total cell nuclei in a given population and Po is that of control animals.

72-1083

ENGLAND J.M., ROGERS A.W.

The statistical analysis of autoradiographs. I. Grain count distributions over uniformly labelled sources.

J. Microsc. 92 (1970) 3, 159-65

Nuclear Medicine (1971) 3545

Repeated visual grain counts and photometric measurement of grain density showed good agreement with predictions from a Poisson distribution.

72-1084

JAVOY M., FOURCADE S., ALLEGRE C.J.

Graphical method for examination of $^{18}O/^{16}O$ fractionations in silicate rocks.

Earth Planet. Sci. Lett. 10 (1970) 1, 12-6

Geology Exclusive of North America (1971) 04861

72-1085

KALBHEN D.A., REZVANI A.

Comparative studies on sample preparation methods, solutes, and solvents for liquid scintillation counting.

Scintillator and liquid scintillation counting San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10545

Sample preparation methods, solutes, and solvents are reviewed.

72-1086

KIM S.H.

Low-level scintillation counting and evaluation of counting solutions of ^{14}C and ^{3}H.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Electrical Electronics Abstr. 74 (1971) 8644

Sample preparation method and counting instruments are described.

72-1087

LARRA F., DROZ B.

Radioautographic techniques and their application to the study of the renewal of cell components.

J. Micros. (Paris) 9 (1970) 7, 845-80

Biological Abstr. 52 (1971) 92712

The techniques for light and electron microscopic radioautography are extensively described.

72-1088

MISON P., TRNKA L., MEISSNER J.

Comparative studies on liquid scintillation counting, using labelled mycobacteria.

GIT Fachz. Lab. 15 (1971) 2, 139-41

C.A. 74 (1971) 136242

The possibilities and limitations of liquid scintillation counting were studied.

72-1089

MOGHISSI A.A.

Low-level liquid scintillation counting of α-and β-emitting nuclides.

Curr. Status Liquid Scintill. Counting (1970) 86-94

C.A. 75 (1971) 13801

Methods for low-level liquid scintillation counting are reviewed.

72-1090

MORTIMER C., CLARK A.H., SCHUFLE J.A.

Ion exchange and radiocarbon dating of alluvial sediments from the lower Rio Copiapo, Chile.

Nature Phys. Sci. 229 (1971) 2, 54-5

Radiocarbon dating of a sample of peat and fossil wood yielded an age of 1018 ± 73 yr.

72-1091

NEARY M.P., BUDD A.L.

Color and chemical quench.

Curr. Status Liquid Scintill. Counting (1970) 273-82

C.A. 75 (1971) 13951

The effects of the difference between color and chemical quenching on the quench corrections of ^{14}C and ^{3}H in PhMe samples are discussed.

72-1092

NOUJAIM A., EDISS C., WIEBE L.

Precision of some quench correction methods in liquid scintillation counting.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10022

The departure of coloured samples from chemical correction curves could give rise to serious errors if a ^{137}Cs external standard was used.

72-1093

OEHMICHEN M.

Combined autoradiographic enzyme-histochemical studies on blood cell types : description of a method.

Klin. Wochenschr. 49 (1971) 5, 282-4

C.A. 74 (1971) 138481

The preparations were air-dried, dipped in Kodak NTB 3 emulsion, dried again, and stored.

5.1 - DETERMINATION OF ACTIVITY

72-1094

BLOHM D., IRMLER R.

Spectrometric analysis of nitrogen-15 in the presence of borate.

Isotopenpraxis 7 (1971) 4, 149-50

C.A. 75 (1971) 29587

The spectrometric ^{15}N determination can be used in conjunction with H_3BO_3 titrations of Kjeldahl NH_3 for determining the isotopic composition of N samples.

72-1095

CALF G.E.

Exchange reactions for the determination of low levels of tritium in aqueous samples.

Scintillator and liquid scintillation counting 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10033

The method involves the heterogeneous metal catalytic hydrogen exchange between tritiated water and ortho-xylene. Tritiated ortho-xylene is then counted in a liquid scintillation system.

72-1096

DARRAH H.K., HEDLEY-WHYTE J., HEDLEY-WHYTE E.T.

Radioautography of cholesterol in lung. Assessment of different tissue processing techniques.

J. Cell Biol. 49 (1971) 2, 345-61

C.A. 74 (1971) 136035

Lung tissue was embedded in an Epon mixture after dehydration.

72-1097

DE TURCKHEIM M., ROBERT A., RIGAUDIERE N., MEYNIEL G., DELOST P.

Automatic analysis of ^{127}I. labelled amino acids in the thyroid gland of the water vole (Arvicola amphibius) by chromatography and colorimetric determination.

C.R. Soc. Biol. 164 (1970) 2, 307-12

Bull. Signal. Sect. 361, 32 (1971) 4653

The lower limit of 0,5 nM is insufficient for triiodothyranine.

72-1098

DULICH G.K., PETROV A.A., FAVORSKAYA M.P.

Simultaneous determination of nitrogen and oxygen in titanium and its alloys by a spectral-isotopic method.

Zavod. Lab. 37 (1971) 4, 436-7

C.A. 75 (1971) 29680

The method consists of isotopic exchange of the sample with a gaseous mixture with known content of $^{15}N_2$ and $C^{18}O_2$ at 1600-1700°. High frequency generator induced fluorescence is employed for the determination of $^{15}N_2$ and $C^{18}O_2$.

72-1099

EGOROV V.N., GRYZLOV Yu. N.

Spectral-isotopic method for determining oxygen in refractory metals and metals forming heat-resistant oxides.

Zh. Prikl. Spektrosk. 14 (1971) 4, 579-82

C.A. 75 (1971) 29595

The method consists of isotopic exchange of the sample with a mixture of He and $C^{18}O$ in an electric arc.

72-1100

GAUTHERON C., CHEVALLIER F.

Problems presented by high resolution radioautography of tissue cholesterol, in particular cerebral (tissue).

J. Microsc. (Paris) 10 (1971) 1, 99-106

C.A. 75 (1971) 15908

None of the techniques proposed for the preparation of liver and cerebral tissue is satisfactory probably because of the diversity of bonding of free and esterified cholesterol.

72-1101

LONGIN R.

New method of collagen extraction for radiocarbon dating.

Nature 230 (1971) 5291, 241-2

Bull. Signal. Sect. 210, 32 (1971) 1036

The method is based on the solubility of collagen in slighthy acidic hot water after acid (8%HCl) pretreatment of bones.

72-1102

PACKARD Instrument C°

Preparing liquid samples for analysis for radiology.

Ger. Offen. 1,949.048

C.A. 74 (1971) 71374

The samples were burned by an electric current. Inactive CO_2, H_2O or SO_2 are added to the O and the gas was absorbed in suitable liquids.

72-1103

QUEVEDO J.C.

RNA, hippocampus and learning : an autoradiographic study.

Acta Anat. 75 (1970) 1, 27-36

Biological Abstr. 52 (1971) 79470

The stripping-film autoradiographical technique was used to study the incorporation of uridine-5-^{3}H into the RNA of the pyramidal hippocampal cells.

72-1104

TAMERS M.A.

Validity of radiocarbon dates on terrestrial snail shells.

Amer. Antiquity (1970) 35, 94-100

C.A. 74 (1971) 38191

The snail shells were washed with dilute HCl and the C converted to C_6H_6 for counting in a liquid scintillation spectrometer.

72-1105

TOMLINSON F.K., SMITH W.H., EPPINK D.W., HAGEE G.R.

Two methods of determining ppm quantities of ^{236}Pu in ^{238}Pu.

Nucl. Technol. 12 (1971) 3, 314-9

N.S.A. 25 (1971) 51402

One method involves the direct measurement of ^{236}Pu in the presence of $^{238}PuO_2$, in the second method, the ratio of daughter products from ^{236}Pu and ^{238}Pu is measured by indirect radiochemical determination.

72-1106

ZHUKOVSKAYA L.P., KARAVAEV F.M., SOKOLOVA I.A.

Preparation of gas samples from carbonates and their solutions for measuring the activity of carbon-14.

Radiokhimiya 13 (1971) 1, 163-4

C.A. 74 (1971) 119271

The ^{14}C was converted into CO_2 by treating with $HClO_4$ at room temperature; the CO_2 collected in a trap cooled by liquid N was mixed with CH_4.

5.2 - APPARATUS

72-1107

BAKAY B.

Detection of radioactive components in polyacrylamide gel disc electropherograms by automated mechanical fractionation.

Anal. Biochem. 40 (1971) 2, 429-39

C.A. 74 (1971) 136182

Gels were fractionated following disc gel electrophoresis with a mechanical fractionator mixed with an eluent carrier and with scintillation solution.

72-1108

BIRJULIN Ju. F., KOLESNIKOV N.V.

Stabilization of the amplification factor of a scintillation counter for recording carbon-14

Pribory Tekh. Eksper. (1970) 4, 100-1

Bull. Signal. Sect. 150, 32 (1971) 1336

The instability was 0,5% during 7 hr with a noise increase of 3 pulses/min.

72-1109

BOGEN D.C., WELFORD G.A.

Radioactive gas assay using solid plastic scintillators.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 10021

The gases are filled into a standard liquid scintillation glass counting vial coated with a thin plastic phosphor film.

72-1110

CARTER G.W., VAN DYKE K.

Superior counting solution for water-soluble tritiated compounds.

Clin. Chem. 17 (1971) 7, 576-80

C.A. 75 (1971) 85009

The qualities and drawbacks of a simple liquid scintillation solution (PPO, POPOP, toluene, Bio-Solv.) are described.

72-1111

CAVINESS V.S.Jr., BARKLEY D.S.

Section thickness and grain count variation in tritium autoradiography.

Stain Technol. 46 (1971) 3, 131-5

C.A. 75 (1971) 1129

^{3}H-labelled styrene-glycol-methacrylate was used as a standard source for autoradiographic model studies.

72-1112

FIGGE K., PIATEK H., OSSENBRUEGGEN H.

Radio thin-layer chromatography of weak β-emitters.

GIT Fachz. Lab. 14 (1970) 8, 900-4, 907-10, 913-5, 1013-6, 1019-22, 1025-6

C.A. 74 (1971) 37959

The various methods available for the assaying of chromatographic separated radioactive substances are reviewed. The application of windowless gas-flow proportional counters is described and the properties of 2 commercial radio thin-layer chromatographs are discussed.

72-1113

FISCHER H.A., KOSE H., THIELE H., WOERNER G.

Shorter autoradiographic exposure of electron-microscopic preparations by addition of scintillators.

Naturwissenschaften 58 (1971) 2, 101-2

C.A. 74 (1971) 136258

Additions of 2,5-diphenyloxazole as scintillator to Epon mixture increased the autoradiography induced Ag grain yield per area.

72-1114

GLASS D.S.

A versatile computer oriented liquid scintillation counting system using the double ratio technique.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Electrical Electronics Abstr. 74 (1971) 8639

A three channel liquid scintillation counting system is described.

72-1115

HERBERG R.J.

An investigatfon of a commercial liquid scintillation counter-computer.

Scintillator and liquid scintillation counting. San Francisco 7-10 July (1970) 1 pp.

Physics Abstr. 74 (1971) 7555

Packard Tri-Carb Model 3380-544 involves a liquid scintillation counter and a dedicated computer.

72-1116

HRIBAR M., VARL B., KELSIN D.

Analysis of the ^{131}I Bengal red test by means of an analog computer.

Wien. Zinn. Med. 51 (1970) 11, 527-32

Nuclear Medicine (1971) 4882

A simple analog computer and an xy recorder were used for analysis of the ^{131}I Bengal red.

72-1117

HUELSEN W.

Measurement of the radioactivity of gas chromatographic fractions.

Ger. Offen. 1,918,180

C.A. 74 (1971) 37545

The individual fractions leaving the gas chromatograph are recorded by a detector, oxidized in an oven and distributed among different vessels by a multiway valve controlled by the detector.

72-1118

HUELSEN W.

Totally automatic combustion apparatus for the measurement of tritium and carbon-14 in the liquid scintillation spectrometer.

Experientia 26 (1970) 12, 1406-17

C.A. 74 (1971) 27291

The apparatus is connected to the counter, burns each sample and dissolves the combustion products in the scintillator solution which is introduced into the liquid scintillation counter.

72-1119

KISELA F.

Counter for measuring the activity of low-energy β-emitters of hydrogen-3 and carbon-14.

Ispol'z. Isotop. Izluch. Issled Sel. Khoz. Mater. Nauch.-Metod. Soveshch (1968) 149-52

C.A. 74 (1971) 135949

This methane flow counter is composed of a steel cylinder with a very thin plastic window and a Mo wire anode.

72-1120

LAUBER A., WOLGAST M.

Needle type solid state detectors for in vivo measurement of tracer activity.

Ab. Atomenergi Stockholm (Rapp.) (1970) AE-401, 33 pp.

C.A. 74 (1971) 10113

The probes use a Li-compensated p-i-n Si detector as sensing element enclosed in a stainless steel tube.

72-1121

MOWBRAY J., OTTAWAY J.H.

The preparation of α-oxo acid derivatives suitable for specific radioactivity determination

Biochem. J. 120 (1970) 1, 171-5

Nuclear Medicine (1971) 3654

The title compounds are colorless, soluble in dioxan based scintillators and a strong absorption coefficient of uv light.

72-1122

PAJEDA R., VISOCKAITE S., POSKUTE Z.

Effect of 1,4-benzodioxan series compounds on the determination of carbon-14 in liquid scintillators.

Liet. TSR Aukst. Mokyklu Mokslo Darb. Chem. Chem. Technol. 11 (1970) 145-50

C.A. 75 (1971) 29051

It was shown that the title compounds increased the efficiency in liquid scintillators.

72-1123

PROVINEC P., CHUDY M., SELIGA M

Equipment for absolute age determination by using carbon-14.

Cesk. Cas. Fys. 21 (1971) 1, 17-25

C.A. 74 (1971) 119245

This radiocarbon dating apparatus is composed of a 2.8 l. CO_2 filled proportional counter.

72-1124

SCHMIDT P.F., ASHNER J.D.

Tracer investigation of hydroxyls in silicon dioxide films on silicon.

J. Electrochem. Soc. 118 (1971) 2, 325-30

C.A. 74 (1971) 68593

The Beckmann Low Beta II was used for counting T from a thin solid film. The detection efficiency was excellent : 82.4% for betas actually emerging from the front surface of the samples.

72-1125

SHULIYA K.S., LUYANAS V.Yu., BANUS Yu. et al.

The use of a liquid scintillometer in the carbon-14 dating method.

Nauchnaya Konferentsiya Molodykh Uchenykh Geologov Litvy Materialy (1968) 78

Geology Exclusive of North America (1971) 04004

72-1126

TANAKA E.

Techniques in utilization of radioisotopes in nuclear medicine : A study on radioisotope imaging.

Radioisotopes 20 (1971) 1, 38-47

Biological Abstr. 52 (1971) 92706

Recent progresses in techniques of radioisotope imaging and radioisotope cameras are reviewed.

5.3- DEGRADATION

72-1127

DEHLINGER P.J., SCHIMKE R.J.

Size distribution of membrane proteins of rat liver and their relative rates of degradation.

J. Biol. Chem. 246 (1971) 8, 2574-83

Biological Abstr. 52 (1971) 93736

The relatives rates of degradation of the proteins were studied by administration to rats of ^{14}C- and ^{3}H-leucine.

72-1128

EMBERY G., LLOYD A.G., FOWLER L.J.

Heparin degradation. II. Metabolic fate of the potassium salts of (^{35}S-sulfoamino) heparin, (^{35}S-sulfoamino) chitosan, 2-deoxy-2-^{35}S-sulfoamino-D-glucose and ^{35}S-sulfoamino-L-serine in the rat.

Biochem. Pharmacol. 20 (1971) 3, 649-58

C.A. 74 (1971) 138941

72-1129

GILLARD R.D., BEAUMONT A.G., LYONS J.R.

Reactions of complex compounds of cobalt. VII. Mechanism of degradation of coordinated salicylic acid.

J. Chem. Soc. A (1971) 9, 1361-5

C.A. 75 (1971) 5015

The degradation of salicylatobis (ethylenediamine) cobalt (III) ion labelled with ^{14}C was investigated.

72-1130

MASUIKE T., FURUKAWA N., OAE S.

Mechanism of silver perchlorate

catalyzed solvolysis of 2-chlorocyclohexanone-1-^{14}C.

Bull. Chem. Soc. Jap. 44 (1971) 2, 448-50

C.A. 75 (1971) 19410

The solvolysis of the title compound in ethanol-water solution gives 2-ethoxycyclohexanone -x-^{14}C which was studied by successive degradation.

See also :

72-968 Preparation of riboflavin UL-^{14}C.

72-965 Bromination of norbornene : the question of bromonium vs 6,1-hydride shift.

6 - MISCELLANEOUS

72-1131

MAUSHART R.

Practical protection against radiation in the isotopes laboratory. Measuring and protection procedures for the safe handling of radioactive substances in scientific B and C type laboratories.

GIT Fachz. Lab. 14 (1970) 1153-4, 1157-9, 1285-92, 1411-2, 1415-7

C.A. 74 (1971) 119289

72-1132

MILLER J.P., CRAWFORD L.E.M.

Toxicologic evaluation of radiopharmaceuticals.

Kaku Igaku 6 (1970) 3, 213-6

C.A. 74 (1971) 41065

The existing literature was reviewed and extensive animal studies carried out in order to obtain data relating to nuclide decay schemes, biological distribution and biological half-life.