

ABSTRACTS SECTION

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

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

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

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

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

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1 - GENERAL

72-515

ANONYMOUS

Radioactive materials and radio-pharmaceuticals.

INIS - mf - 54 (1970) 8 pp.

N.S.A. 26 (1972) 4788

A list of the most important radioactive materials available at the National Commission of Atomic Energy of the Republic of Argentina is presented.

72-516

COHEN Y.

Radionuclides in pharmacokinetics.

Prod. Probl. Pharm. 26 (1971) 1, 28-36

C.A. 74 (1971) 123351

The pharmacokinetics of radionuclides and their mathematical treatment with models is discussed.

72-517

KORSHUNOV I.A.

Problems in radiochemistry.

Vysshaya Shkola Moscow (1969) 149 pp.

C.A. 74 (1971) 119992

72-518

MAHADEV V.

Scintillation scanning in the diagnosis of neurological disease.

Med. J. Malaya 24 (1970) 4, 290-6

Excerpta Medica Radiology (1971) 607

Scan agents and instrumentation available are discussed.

72-519

MANUNTA G.

Radioisotopes in experimentation and diagnosis.

Atti. Soc. Ital. Sci. Vet. (1970) 24, 27-54

C.A. 74 (1971) 120856

72-520

MARINI-BETTOLIO G.B.

Methods for studying the metabolic pathway of drugs and their interactions with receptors.

Ann. Ist. Super. Sanita (1970) 6 (Pt. 4/5), 320-32

C.A. 74 (1971) 123342

Use of labelled molecules is discussed.

72-521

NOTERMAN J.

Circulation of the CSF and isotope cisternography.

Acta Chir. Belg. 68 (1969) 5, 342-50

Excerpta Medica Radiology (1971) 590

The study of CSF circulation by isotopic cisternography is reviewed.

72-522

SCHECHTER M.M., ZINGESSER L.H.

Advances in the radiological examination of patients with brain tumors.

Ann. N.Y. Acad. Sci. 159 (1969) 2, 552-8

Nuclear Medicine (1971) 71

Recent progress are reviewed.

72-523

SCHEER K.E.

Importance of a nuclear reactor for experimental and clinical cancer research.

Aktuel. Probl. Geb. Cancerol.

Heidelberg Symp. 2nd (1967)
85-9

C.A. 74 (1971) 21175

Metabolic studies with isotopes of short half-life are reviewed.

2 - SYNTHESIS

2.0 - GENERAL

72-524

MULLER H.

Chemical effects of nuclear transformations in solids - a contribution to solid state physics.I.

A.T.K.E. 16 (1970) 43, 237-42

New radioactive labelled species may be synthesized by reaction of radioactive recoil atoms with suitable chemical compounds.

72-525

MULLER H.

Chemical effects of nuclear transformations in solids - a contribution to solid state physics.II.

A.T.K.E. 16 (1970) 57, 323-6

Radioactive atoms were used to produce various new radioactive labelled species.

2.1 - DEUTERIUM COMPOUNDS

2.1.0 - General

2.1.1 - Aliphatic compounds

72-526

BELL R.P., CRITCHLO J.E.

Reaction orders and isotope effects in the reversible addition of water to 1,3-dichloroacetone in aqueous dioxan.

Proc. Roy. Soc. (London) Ser.A
325 (1971) 1560, 35-55

N.S.A. 26 (1972) 6554

The kinetics of the title addition and kinetic isotope effects were studied using systems containing 50 and 100 atom % of deuterium.

72-527

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

Chemischer Informationsdienst
Anorganische Chemie (1971) 20,
007

The exchange of H by CD₃ radicals from the methylfluorosilanes MeSiF₃, MeSiF₂, Me₂SiF and MeF₄ was studied in the gas phase.

72-528

CHONG S-L., FRANKLIN J.L.

Ion-molecule reactions of CH₄-CD₄ mixtures at high pressures.

J. Chem. Phys. 55 (1971) 2,
641-6

N.S.A. 26 (1972) 1854

Ion-molecules reactions in mixtures of CH₄ and CD₄ were carried out in a single ion source of a quadrupole mass filter.

72-529

DONER H.E., MORTLAND M.E.

Charge location as a factor in the dehydration of 2:1 clay minerals.

Soil. Sci. Soc. Amer. Proc. 35 (1971) 2, 360-2

C.A. 74 (1971) 124137

(CH₃)₄N - montmorillonite and saponite were deuterated.

72-530

HASE T.

Improved method for the preparation of 1-deuterated aldehydes.

Acta Chem. Scand. 24 (1970) 6, 2263-4

Chemischer Informationsdienst Organische Chemie (1971) 3, 329

Benzylidene dibromide was converted into the bisiminium salt which was isolated and allowed to exchange a deuteron (from D₂O) via the ylide.

72-531

McCLOSKEY J.A., WENDT G.

Mass spectrometry of perdeuterated molecules of biological origin. Fatty acid esters from *Scenedesmus obliquus*.

Biochemistry 9 (1970) 25, 4854-66

C.A. 74 (1971) 61509

Perdeuterated fatty acid esters from *S. obliquus* which were grown in D₂O were studied using combination gas chromatography-mass spectrometry and multiple-ion detection.

72-532

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

Hydrogenation and isomerization of unsaturated hydrocarbons over zinc oxide.

Bull. Chem. Soc. Jap. 43 (1970) 7, 2274

Chemischer Informationsdienst Organische Chemie (1970) 43, 219

The formation of RCHDCH₂D by the interaction over ZnO of chemisorbed olefins with deuterium molecules in the gas is discussed.

72-533

QUINTARD J.P., PEREYRE M.

Stereochemistry of the reduction of maleic and fumaric esters by tributyltin hydride and methanol.

C.R. Acad. Sci. Ser. C 271 (1970) 14, 868-70

C.A. 74 (1971) 22299

The reduction of di-Me fumarate or di-Me maleate by Bu₃SnD in the presence of MeO⁻ was studied.

72-534

SANKO D.E., HUMSKI K., MALOJEIC R., BOREIC S.

Thermodynamic and kinetic secondary isotope effects in the Cope rearrangement.

J. Amer. Chem. Soc. 92 (1970) 2, 6534-8

C.A. 74 (1971) 12416

Thermodynamic and kinetic D isotope effects on the thermal rearrangement of 1,5 hexadienes were determined.

72-535

TAYLOR P., ORCHIN M.

Isomerization and hydrogenation of the maleate-fumarate system by cobalt hydrocarbonyl.

J. Organometal. Chem. 26 (1971) 3, 389-92

Dimethyl fumarate and dimethyl succinate were deuterated by

treatment of dimethyl maleate with $\text{DCo}(\text{CO})_4$.

2.1.2 - Aromatic compounds

72-536

NET E...L., HEINRICH S. P.M.

A convenient preparation of perdeuterated cyclooctene effect of inhibitors on catalytic exchange.

Tetrahedron Lett. (1970) 11, 829-32

Chemischer Informationsdienst Organische Chemie (1970) 23-166

The title compound was prepared by boiling a mixture of cyclooctene and deuterium oxide, magnesium turnings and NaCl in presence of alumina and palladium.

72-537

BARBORAK J.C., CHICK S., CHLEYER P.V...

Ground-state substituent effect. I. Deuterium and methyl.

J. Amer. Chem. Soc. 93 (1971) 20, 5275-81

N. ... 26 (1972) 1843

Substituent effects on cyclopropyl rings were studied using the deuterated and methylated barbaralones.

72-538

DAHN H., G. REBANO J... MURCHU C.O.

Stereochemistry of the hydrogenolysis of N-benzyl bonds. II. Deuterolysis of chiral N,N-dimethylphenylglycine and the configuration of (+)-phenylacetic acid-2-d.

Helv. Chim. Act. 53 (1970) 6, 1379-82

Chemischer Informationsdienst Organische Chemie (1970) 47, 165

(S)(+)-PhCHDCO₂H containing 70% of the monodeuterio compound with 80% configuration inversion was obtained by deutero-lysis on Pd-C of (R)(-)-PhCH(NMe₂)CO₂H.

72-539

EBERBACH W., PRINZBACH H.

Base-catalyzed rearrangement in the tetracyclo (3.3.0.0^{2,8}.0^{4,6}) octane system.

Chem. Ber. 102 (1969) 12, 4164-76

Chemischer Informationsdienst Organische Chemie (1970) 4, 041

The title rearrangement was studied using deuterium labeling.

72-540

ENZELD. C.R., WAHLBERG I.

Mass spectrometric studies of diterpenes. 7. Aromatic diterpenes.

Acta Chem. Scand. 24 (1970) 7, 2498-510

C.A. 74 (1971) 13293

Podocarpa -8,11,13-trien-7-ones deuterated in positions 2,3,5,6,16,17 and 20 were prepared.

72-541

GENESTE P., LAMATY G., MOREAU C.

Reactivity of carbonylated cyclopentanones : cis-and trans-hydrindanones.

C.R. Acad. Sci. Ser. C 269 (1969) 18, 1012-5

Chemischer Informationsdienst Organische Chemie (1970) 5, 052

The title compounds were deuterated.

72-542

GUTHRIE R.D., JAEGER D.A.,

MEISTER W., CRAM D.J.

Electrophilic substitution at saturated carbon. XLVIII. High stereospecificity in a transamination reaction.

J. Amer. Chem. Soc. 93 (1971) 20, 5137-53

Rates of isomerization of N-(neopentylidene-1-d)- α -phenylethylamine (I-H,D) to N-(α -methylbenzylidene) neopentylamine-1-d (II-D) were examined with all combinations of isotopic labels (deuterium and protium) in the benzyl position of starting material.

72-543

HARTMANN A.A., ELIEL E.L.

Protonation and methylation of conformationally fixed 2-lithio-1,3-dithianes. Some reactions of remarkable stereoselectivity.

J. Amer. Chem. Soc. 93 (1971) 10, 2572-3

N.S.A. 25 (1971) 39508

Virtually stereoisomerically pure R-2-deuterio-cis-4, cis-6-1,3-dithiane was obtained by treatment of the lithium derivatives of cis-4,6-dimethyl-1,3-dithiane with DCl.

72-544

LEE C.C., HAHN B.S.

Temperature effects in the acetolysis of exo-dehydro-2-norbornyl brosylate.

J. Amer. Chem. Soc. 92 (1970) 8, 2583-4

Chemischer Informationsdienst Organische Chemie (1970) 30, 221

The acetolysis of the deuterated title compound was studied.

72-545

LUKE M.O., ATKINSON J.G.

Aspects of stable isotope che-

mistry. Preparation of adamantane-d₁₆.

Tetrahedron Lett. (1971) 2, 117-20

C.A. 74 (1971) 76080

Perdeuterioadamantane was prepared from the tricyclodecane.

72-546

MALLOY T.B.Jr., HEDGES R.M., FISHER F.

Deuterated olefins from the Wittig reaction.

J. Org. Chem. 35 (1970) 12, 4256-7

C.A. 74 (1971) 22468

Methylenecyclopentane 2,2,5,5-d₄ and methylene-d₂-cyclopentane-2,2,5,5-d₄ were prepared by the modified Wittig reaction of cyclopentanone-2,2,5,5-d₄ with MePh₃PBR and methyl-d₃-triphenylphosphonium bromide.

72-547

MAZZOCCHI P.H., LUSTIG R.S., CRAIG G.W.

Photoisomerizations of 2-methylphenylcyclopropanes. Deuterium labelling.

J. Amer. Chem. Soc. 92 (1970) 7, 2169-70

C.A. 72 (1970) 131773

The preparation of the deuterated title compound is described.

72-548

TANIDA H., TRUSSIMA T.

Secondary β -deuterium effects on the rates of solvolyses of benzonorbornen-2(exo)- and -2(endo)-YL p-bromobenzenesulfonates.

J. Amer. Chem. Soc. 93 (1971) 12, 3011-16

N.S.A. 25 (1971) 41801

C₃-deuterated title compounds were synthesized.

72-549

ABLEY P., McQUILIN F.J.,

Instance of trans-hydrogen addition in catalytic homogeneous hydrogenation.

J. Chem. Soc. D (1969)24,1503-4

C.A. 72 (1970) 42514

The reduction of PhC:CPh with D gas in presence of $\text{py}_3\text{Rh-Cl}_3\text{-Me}_2\text{NCHO-NaBH}_4$ involves D incorporation at the o-position of the Ph group of the product, trans-stilbene.

72-550

AHLBERG P., HARRIS D.L., WINSTEIN S.

Direct observation of the totally degenerate 9-barbaralyl cation and the bicyclo(4.3.0.) nonatrienyl cation, a 1,4 bis-homotropylum ion.

J. Amer. Chem. Soc. 92(1970) 14, 4454-6

C.A. 73 (1970) 76730

Deuterated title compounds were prepared by extraction of bicyclo (3.2.2.) nona-3,5,8-trien-2-ol from a CD_2Cl_2 solution.

72-551

AHLGREN G., AKERMARK B.

Cycloaddition reactions. 4. Addition of benzyne to 1,2-dideuteriocyclohexene.

Tetrahedron Lett. (1970) 35, 3047-8

C.A. 73 (1970) 87191

The addition of 1,2-dideuteriocyclohexene to benzyne from $\text{o-H}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$ and $\text{Me}_2\text{CH-CH}_2\text{CH}_2\text{NO}_2$ was studied.

72-552

ANGYAL S.J., FERNANDEZ C.M., GARRETT J.L.

Catalytic deuterium exchange

reactions with organics.

XXXVI. The labelling of (-)-inositol on self-activated platinum oxide with and without radiation. Aust. J. Chem. 20 (1967) dec. 2647-53

N.S.A. 22 (1968) 12390

Exchange of (-)-inositol with tritiated water on self-activated platinum oxide led to incorporation of tritium of which 92.5% was found at C_1 and C_6 , 3.7% at C_2 and C_5 and 3.8% at C_3 and C_4 . Exchange was accelerated with uv light.

72-553

APPLEQUIST D.E., JOHNSTON M.R., FISHER F.

Synthesis and deamination of a deuterium-labelled spiropentylamine.

J. Amer. Chem. Soc. 92 (1970)15, 4614-7

C.A. 73 (1970) 66108

Spiropentylamine which was synthesized with a D label in the 4 position gave labelled 2 -and 3 - methylene - cyclobutanols by HNO_2 deamination.

72-554

BALDWIN J.E., FOGLESONG W.D.

Stability and symmetry of the 8,9 - dehydro - 2 - adamantyl cation.

J. Amer. Chem. Soc. 90 (1968)16, 4303-10

Chemisches Zentralblatt (1969) 54, 0600

2-Deuterio -and 2-tritio labelled 8,9 - dehydro -2- adamantanol were obtained by reduction of dehydroadamantanone in methanol with sodium borodeuteride or sodium borotritide.

72-555

BELLAMY A.J., GUTHRIE R.D.

Studies on the possible inter-conversion of phenylhydrazones and phenylazoalkanes.

Part IV studies in deuterated solvents: mechanism of the interconversion of syn- and anti-acetaldehyde phenylhydrazone.

J. Chem. Soc. (London) Sect. C., (1968) 16, 2090-1

Chemisches Zentralblatt (1969) 53, 0244

The deuterium exchange of aldehyde phenylhydrazones in neutral methan (^2H)₂O has been studied.

72-556

BENNET D.J., KRIBY G.W., MOSS V.A.

Deuteration and tritiation of aryl aldehydes in the formyl group and the synthesis of (\pm) 3,4-dihydroxyphenylalanine - β , β - d_2 .

J. Chem. Soc. C (1970) 15, 2049-51

C.A. 73 (1970) 110104

Aryl aldehydes were converted into the corresponding α -aryl- α -morpholinoacetonitriles and by treatment with base into the derived benzylic anions which by quenching with D_2O or T_2O followed by hydrolysis with mineral acid, gave formyl-labelled aldehydes.

72-557

BOND F.T.

Bicyclo (2.1.1.) hex -2-ene. Electrophilic addition reactions

J. Amer. Chem. Soc. 90 (1968) 19 5326-8

Chemisches Zentralblatt (1969) 55, 0586

In this study, it was shown that DOAc adds easily to the title product.

72-558

BREVARD C., LEHN J.M.

Molecular dynamics of π - π complex formation by deuterium quadrupolar relaxation.

J. Amer. Chem. Soc. 92 (1970) 16, 4987-9

C.A. 73 (1970) 109133

Deuterium quadrupolar labelling was used to study the molecular dynamics of π - π complex formation between 1,3,5-trinitrobenzene and 3 aromatic donor molecules = fluorene- d_1 , methylfluorene- d_2 and methylene-fluorene- d_1 .

72-559

BROWN H.C., HAWAKAMI J.H., LIU K.T.,

Remarkably high stereoselectivity in the addition of acetic acid and trifluoroacetic acid to norbornene. Evidence for the capture of the norbornyl cation in an unsymmetrical state.

J. Amer. Chem. Soc. 92 (1970) 18, 5536-8

C.A. 73 (1970) 109178

Exo-norbornanol- d was obtained by treatment at 100° of norbornene with deuterioacetic acid followed by reduction with LiAlH_4 .

72-560

BUNDEL Yu.G., ROZENBERG V.I., GAVRILOVA G.U., ARBUZOVA E.A., REUTOV O.A.

Transfer of the reaction center during the deuteriodemetallation of substituted benzylmercury chlorides.

Izv. Akad. Nauk SSSR, Ser Khim. (1970) 5, 1155-7

C.A. 73 (1970) 66701

The deuteriomercuration with DCl in dry dioxane of *o*-, *m*- and *p*-

methyl-, 3,5-dimethyl-, and 2,4,6-trimethylbenzylmercuric chlorides was studied.

72-561

BUNDEL Yu. G., ROZENBERG V.I., KROKHINA I.N., REUTOV O.A.

Effect of specific solvation of the metal atom on transfer of the reaction center during deuteriodemetallation of benzylmercuric chloride.

Zh. Org. Khim. 6 (1970) 7, 1519

C.A. 73 (1970) 98150

Deuteriodemetallation of the title product and into the products PhMe and PhCO₂H proceeded via D incorporation when the solvent is absolute dioxane, dioxane-5% D₂O and MeOCH₂CH₂-OMe.

72-562

COATES R.M., KIRKPATRICK J.L.

Cyclopropane participation and degenerate rearrangement in the solvolysis of 9-pentacyclo (4.3.0.0^{2,4}.0^{3,5}.0^{5,7}) nonyl p-nitrobenzoate.

J. Amer. Chem. Soc. 92 (1970) 16, 4863-92

C.A. 73 (1970) 76388

5-Labelled title compound was prepared and used to study the hydrolysis of this compound.

72-563

COGAN J.F., HALLSHORN M.P., LEE J.A.J.

Stereochemistry of reaction of camphor with phenylmagnesium bromide.

Chem. Ind. (London) (1970) 35, 1145-6

C.A. 73 (1970) 120703

A mechanism involving endo-attack of Grignard reagent on carbonyl function of camphors was confirmed by using β-exo-

deuteriocamphor (31% D).

72-564

DALY J.W., JERINA D.M.

Aerobic aromatic hydroxylation catalyzed by horseradish peroxidase: absence of NIH shift.

Biochim. Biophys. Acta 208 (1970) 2, 340-2

C.A. 73 (1970) 73287

Aromatic hydroxylations of non-phenolic substrates by known mixed oxidases are accompanied by migration of D or T from the position of oxygenation to an adjacent ring position (NIH shift). Acetanilide and anisole were converted to phenols without NIH shift.

72-565

DE MAYO P., VERDUN D.L.

Flash thermolysis IV. Thermal fragmentation of cyclohexanone

J. Amer. Chem. Soc. 92 (1970) 20, 6079-80

C.A. 73 (1970) 130497

The preparation and thermolysis of labelled cyclohexanone was studied. The D distributions in the products obtained were determined.

72-566

DOLBIER W.R.Jr., SHENG-HONG DAI

A novel probe into the simultaneity of cycloaddition reactions The (2+2) and (2+4) systems.

J. Amer. Chem. Soc. 90 (1968) 18, 5028-30

Chemisches Zentralblatt (1969) 55, 0312

The reactions of 1,1-dideuterioallene with acrylonitrile and with hexachlorocyclopentadiene were studied and the kinetic deuterium effects were determined.

72-567

MORITANI I., DANNO S.,
FUJIWARA Y., TERANISHI S.

Aromatic substitution of olefins. XI. Reaction of p-substituted dideuteriostyrenes with benzene in the presence of palladium (II) acetate: mechanistic study.

J. Chem. Soc. B. (1971) 1,196-8

C.A. 74 (1971) 63699

Deuterated trans-stilbenes were formed by reaction of styrenes- β,β - d_2 with C_6H_6 in the presence of Pd (II) acetate and AcOH.

72-568

PAQUETTE L.A., ALLEN G.R.Jr.,
HENZEL R.P.

Silver (I) ion catalyzed rearrangements of strained sigma bonds. IV. Fate of tricyclo (4.1.0.0^{2,7}) heptane.

J. Amer. Chem. Soc. 92 (1970)
23, 7002-3C.A. 74 (1971) 12685

Cis,cis - 1,3 - cycloheptadiene -1,7- d_2 was obtained when dilute $CDCl_4$ solutions of the title compound were treated with $AgBF_4$.

72-569

ROBERTS M., HAMBERGER H.,
WINSTEIN S.

Bicyclo (4.3.1.)deca-2,4,7-trienyl cation. Homoconjugative protonation route to 1,4-bishomotropylium ion.

J. Amer. Chem. Soc. 92 (1970)
21, 6346-8C.A. 74 (1971) 12285

The deuterated title compound was obtained by deuteration of bicyclo (4.2.1) nona-2,4,7-triene in 1:4 FSO_3H-SO_2ClF .

72-570

SCHEYER P.V.R., BARBOURAK J.C.,
SU T.M., BOCHE G., SCHNEIDER G.

Thermal bicyclo (6.1.0.) nonatrienyl chloride-dihydroindenyl chloride rearrangement.

J. Amer. Chem. Soc. 93 (1971) 1,
279-81C.A. 74 (1971) 52819

Deuterated syn-9-chlorobicyclo (6.1.0) nona - 2,4,6-triene was prepared.

72-571

SHUBIN V.G., TABATSKAYA A.A.,
DERENDYAEV B.G., KORCHAGINA
D.V., KOPTYUG V.A.

Isotopic exchange of the hydrogen of arenonium ions and their precursors.

Zh. Org. Khim. 6 (1970) 10,
2072-80C.A. 74 (1971) 12377

The deuterated 2,2,3,4,5,6- and 2,3,4,4,4,6-hexamethyl-cyclohexadienones were obtained by isotopic exchange in acidic media via formation of the parent exomethylene compounds.

72-572

SHUBIN V.G., TABATSKAYA A.A.,
KOPTYUG V.A.

Isotopic exchange of the hydrogen in the α -positions of alkyl group of aromatic hydrocarbons with deuteriotrifluoroacetic acid.

Zh. Org. Khim. 6 (1970) 10,
2081-4C.A. 74 (1971) 12380

Deuterated 1,3,5- $C_6H_3Me_3$, C_6Me_6 , C_6Et_6 , 9,10-dimethylantracene and phenanthrene and dodecahydrotriphenylene were obtained by isotopic exchange of α -H with D in CF_3CO_2D .

72-573

SMITH B.W., TURNER M.J.,
HASLAM E.

Stereochemical course of the 3-dehydroquininate dehydratase reaction and a novel preparation of shikimic acid labelled with isotopic hydrogen at C-2.

J. Chem. Soc. D. (1970) 13, 842-3

C.A. 74 (1971) 12674

The preparation of shikimic acid labelled with D in the 2 position is described.

72-574

STILLE J.K., HUGHES R.D.

Additions of protonic acids to 2,3-dideuterionorbornene. Evidence for the existence of a classical norbornyl cation.

J. Org. Chem. 37 (1971) 2, 340-4

C.A. 74 (1971) 52691

The synthesis of 2,3-dideuterionorbornene is described.

72-575

WEISS R.G., SNYDER E.I.

Stereochemistry of displacement reactions at the neopentyl carbon. Further observations on the triphenyl-phosphine-polyhalomethane-alcohol reaction.

J. Org. Chem. 36 (1971) 3, 403-6

C.A. 74 (1971) 75932

(R)-tert-BuCHDOH was obtained by asymmetric reduction of pivaldehyde-1-d₁ with isobornyloxymagnesium bromide.

2.1.3 - Heterocyclic compounds

72-576

BELOZERSKAYA L.P., DENISOV G.,
TUPICYN I.F.

Kinetics of deuterium exchange

in the NH group of pyrrole, indole and carbazole.

Teor. Eksp. Khim. 6 (1970) 3, 408-13

Chemischer Informationsdienst Organische Chemie (1970) 41, 166

The reaction $RNH + CD_3OD = RND + CD_3OD$ ($R =$ radical of pyrrole, indole and carbazole) in CCl_4 was studied.

72-577

CLEZY P.S., MORELL D.B.

Chemistry of pyrrolic compounds XI. Acetylation of deuteriochlorin IX.

Aust. J. Chem. 23 (1970) 7, 1491-3

Chemischer Informationsdienst Organische Chemie (1970) 40, 351

Acetylduteriochlorin IX di-methyl ester was obtained by reaction of ferriduteriochlorin IX with Ac_2O and $SnBr_4$ followed by esterification.

72-578

GRIGG R., SWEENEY M.,
JOHNSON A.M.

Electrophilic substitution reactions of metalloporphines.

J. Chem. Soc. D. (1970) 19, 1237-8

C.A. 74 (1971) 22307

Metallooctaalkylporphines were treated with 1:1 $CF_3CO_2D-CHCl_3$ to give deuteration at all 4 mesopositions via rapid exchange.

72-579

MEYERS A.I., GORRINGT N.E.,

Synthesis via 2-oxazolines. I. Formylation of Grignard reagents in the presence of hexamethyl-phosphoramide.

J. Amer. Chem. Soc. 92 (1970) 22, 6676-8

C.A. 74 (1971) 22933

α -MeOC₆H₄CHO was prepared by formylation of α -MeOC₆H₄MgBr with deuterated 2-oxazoline in the presence of (Me₂N)₃PO.

72-580

MIKONOV A.F., RUMYANTSEVA V.D., ROZYNOV B.V., EVSTIGNEEVA R.P.

Synthesis of diacetyldeuteroporphyrin III. II.

Zh. Org. Khim. 7 (1971) 1, 165-9

Chemischer Informationsdienst Organische Chemie (1971) 17, 334

The title compound was prepared by oxidative cyclization of 1,19-dimethylbiladiene - α , ϵ in MeOH-AcOH containing NaOAc and Cu (OAc)₂.

72-581

VOURAS P., BIEMANN K.

Electron-impact-induced ring condensation. Mass spectra of some aryl alkyl diethers.

Org. Mass. Spectrom. 3 (1970) 10, 1317-24

C.A. 74 (1971) 12304

Catechol polymethylene diether homologs were deuterated.

72-582

YUKUSHINA T., ZVYAGINTSEVA E.N., LITVINOV V.P., OZOLINS S. GOL'DAKH Ya.L., SHATENSHTEIN A.I.

Deuterium-exchange study of the reactivity of isomeric thienothiophenes and benzothiophene. I. Kinetics of exchange with acids.

Zh. Obshch. Khim. 40 (1970) 7, 1622-6

C.A. 74 (1971) 63692

Rate constants of de-deuteration in 1:2 CF₃CO₂H - AcOH are

reported for: thieno (2,3-b) thiophene, thieno (3,2-b) thiophene 2,5-diethylthieno (2,3-b) thiophene, 2,5-diethylthieno (3,2-b) thiophene, benzothiophene-2-d and benzothiophene-3-d.

2.1.4 - Carbohydrates

2.1.5 - Peptides, Amino acids, Proteins

2.1.6 - Steroids

72-583

MUROTA S., FENSELAU C., TALALAY P.

Partial purification of a beef adrenal Δ^3 - β -ketosteroid isomerase and studies of its mechanism of action.

Steroids 17 (1971) 1, 25-37

C.A. 74 (1971) 94645

The enzymic isomerization of androst-5-ene-3,17-dione to androst-4-ene-3,17-dione in D₂O proceeds without significant isotope exchange between the medium and the steroid.

72-584

NAMBARA T., USUI M., HOSODA H.

Analytical chemical studies on steroids. XXVIII. Synthesis and nuclear magnetic resonance spectra of epimeric 16-deuterio-14 β -androst-17-ols.

Chem. Pharmac. Bull. (Tokyo) 17 (1969) 8, 1611-6

Chemischer Informationsdienst Organische Chemie (1970)3, 322

Four epimeric title compounds were prepared from 3 β -hydroxy-5 α ,14 β -androst-17-one.

2.1.7 - Mineral compounds and Miscellaneous compounds

72-585

MATSUBAYA O., MIYAKE Y.

Relation between deuterium and ^{18}O contents in rain water.

Recent Developments in Mass Spectroscopy (1970) 724-7

N.S.A. 26 (1972) 4432

The relations between the deviation of deuterium with that of oxygen- 18 in fractionally collected rainwater were discussed.

72-586

MAYRER E.

Phosphinotrihydroborate (1-), $\text{H}_2\text{P}(\text{BH}_2)^-$, the conjugate Brønsted base or phosphineborane. Synthesis, reactions, and stability of the lithium salt.

Inorg. Chem. 10 (1971) 10, 2259-62

N.S.A. 26 (1972) 6547

It was shown that $(\text{H}_2\text{P}(\text{BH}_2))\text{Li}$ dissolved in CD_3CN exchanges its PH_2 protons for deuterium whereas no exchange occurs in $\text{H}_2\text{P}(\text{BH}_2)_2\text{Li}-\text{CD}_3\text{CN}$ solutions.

72-587

MILLIGAN D.E., JACOX M.E.

Infrared and ultraviolet spectra of the products of the vacuum-ultraviolet photolysis of silane isolated in an argon matrix.

J. Chem. Phys. 52 (1970) 5, 2504-8

Bull. Signal. Sect. 170, 32 (1971), 602

Deuterated SiH_4 , SiH_3 , SiH_2 , SiH and Si_2 in an argon matrix were obtained by photolysis of silane.

72-588

NAZZARI D.B.

Exchanger particularly for heavy water.

French Pat. 2,019,256

The exchanger is described.

72-589

RACHKOVSKII E.E., BOKESKOV G.K.

Mechanism of isotopic exchange in the hydrogen-water system on some solid catalysts.

Kinet. Katal. 11 (1970) 6, 1410-8

Chemischer Informationsdienst Organische Chemie (1971) 11, 319

D-H isotope exchange reactions were studied on Fe_3O_4 , Cr_2O_3 and Cu-CrO_4 .

2.2 - TRITIUM COMPOUNDS

2.2.0 - General

72-590

FRINK R.O., WETHINGTON J.A., Jr.

Tritium exchange between hydrocarbons and steam.

Trans. Amer. Nucl. Soc. 14 (1971) 2, 467-8

N.S.A. 26 (1972) 1850

72-591

RYLINDER P.N., HASBROUCK L.

Synthetic uses of homogeneous platinum metal hydrogenation catalysts.

Tech. Bul. 10 (1969) 3, 85-91

Engineering Index (1970) 7, 038 A.

The use of platinum metal homogeneous hydrogenation catalysts for isotopic labelling is reviewed.

72-592

URCH D.S., WELCH M.J., ARTHY R.J.

Chemistry of recoil tritium atoms II. Relative energies of

hot atom reactions.

Trans. Faraday Soc. 66 (1970)
Jul. 1642-7

N.S.A. 24 (1970) 44033

The kinetic theory of Estrup and Wolfgang was extended to estimate the relative energy range of recoil tritium hot-atom reactions.

2.2.1 - Aliphatic compounds

72-593

MELOCHE H.P.

2-Keto-3-deoxy-6-phosphogluconic aldose-catalyzed pyruvate proton-exchange reaction. Enzymic synthesis of crystalline sodium ^3H -pyruvate.

Anal. Biochem. 38 (1970) 2,
389-92

C.A. 74 (1971) 28476

The exchange reaction between pyruvate and tritiated water was catalyzed by the title compound. Labelled pyruvate was recovered as the crystalline Na salt.

72-594

ROWLAND F.S., TING C.T.

Recoil tritium reactions with methyl isocyanide and methyl cyanide. Estimates of energy deposition for the T-for-H reaction.

J. Phys. Chem. 74 (1970) 23,
4080-4

C.A. 74 (1971) 12301

The reactions of energetic T with MeNC were studied.

72-595

WOLPERT E., HOFMANN A.F.,
SUMMERSKILL W.H.J.

Synthesis and metabolism of labelled acetohydroxamic acid, a urenase inhibitor.

Proc. Soc. Exp. Biol. Med. 136
(1971) 2, 592-6

C.A. 74 (1971) 74942

Acetohydroxamic acid labelled with ^{14}C or ^3H was synthesized from hydroxylamine-HCl and the appropriately labelled acetic anhydride.

2.2.2 - Aromatic compounds

72-596

GOLD V., LEE J.R., GITTEL A.

Kinetics of hydrogen isotope exchange reactions. XXI. Heterolytic tritium exchange between resorcinol and water in the homogeneous liquid phase.

J. Chem. Soc. B (1971) 1, 32-40

C.A. 74 (1971) 63703

The rate of tritium loss from ring-labelled resorcinol to the solvent was measured for aqueous solution of resorcinol containing either added HCl or NaOH.

72-597

MOSKOWITZ J., HARMWOOD J.P.,
REID A.D., KRISHNA G.

Interaction of norepinephrine and prostaglandin E_1 on the adenylyl cyclase system of human and rabbit blood platelets.

Biochim. Biophys. Acta 230
(1971) 2, 279-85

C.A. 74 (1971) 07547

The formation of tritiated $3',5'$ -cyclic AMP from ^3H -labelled adenine was markedly increased by prostaglandin E_1 .

72-598

NORMANN E., SELJELID R.,
NAKKEN K.P.

Uptake of ^3H -labelled toluidine blue and neutral red in the parathyroids of the dog.

Scand. J. Clin. Lab. Invest.

26 (1970) 4, 369-71

Biological Abstr. 52 (1971)
54298

The title uptake was studied.
⁷⁵Se - labelled toluidine blue
may prove useful as a scanning
agent for the parathyroids.

72-599

PACE-ASCIAK C., WOLFE L.S.

Biosynthesis of prostaglandins
E₂ and F₂ from tritium-label-
led arachidonic acid by rat
stomach homogenates.

Biochim. Biophys. Acta 218
(1970) 3, 539-42

C.A. 74 (1971) 73744

The title biosynthesis was
studied.

72-600

PEYOL W.A., TONELLATO U.

Use of tritiated H₂S as a radi-
cal scavenger in the radi-
olysis of organic liquids.

J. Phys. Chem. 73 (1969) 4,
850-3

N.S.A. 26 (1972) 1922

The method gives higher G val-
ues for the production of tri-
tiated toluene than does the
Wilzbach method.

72-601

STREITWIESER A.Jr., HOLLYHEAD
W.B., FUDJANTAKA A.H.

Acidity of hydrocarbons. XXVII.
The Broensted correlations and
hydrogen isotope exchange kine-
tics of fluorenes, benzfluorenes
and indene with methanolic so-
dium methoxide.

J. Amer. Chem. Soc. 93 (1971)
20, 5088-96

N.S.A. 26 (1972) 1846

Tritium exchange rates were
measured for the title compounds
in methanolic sodium methoxides.

72-602

STREITWIESER A.Jr., HOLLYHEAD
W.B., SONNICHSEN G.

Acidity of hydrocarbons. XXXVIII
Kinetic acidity and Broensted
correlation of di- and tri-
arylmethanes with methanolic
sodium methoxide.

J. Amer. Chem. Soc. 93 (1971)
20, 5096-5102

N.S.A. 26 (1972) 1844

Tritium exchange rates were mea-
sured for polyarylmethanes in
methanolic sodium methoxide.

72-603

VAN DER JAGT P.J., DE HAAN H.K.,
VAN ZANTEN B.

Tritium isotope effects in the
oxidation of 1,2,3,4-tetrahydro-
(1-³H) naphthalene to (1-³H)
naphthalene by 2,3-dichloro-5,6-
dicyano-quinone (DDQ)

Tetrahedron 27 (1971) 14, 3207-
14

N.S.A. 25 (1971) 51462

The kinetic, the secondary, and
the intramolecular isotope
effects in the title oxidation
were determined.

2.2.3 - Heterocyclic compounds

72-604

NEUHARD J., THOMASSEN E.

Deoxycytidine triphosphate dea-
minase: identification and
function in Salmonella thyphi-
murium.

J. Bacteriol. 105 (1971) 2,
657-65

C.A. 74 (1971) 73112

The biosynthesis of 2'-deoxyuri-
dine 5'-monophosphate was stu-
died in a cytidine- and uracil-
requiring mutant of *S.typhimu-
rium*. Uracil-³H and unlabelled
cytidine were used.

72-605

MESHI T., OTSUKA M., SATO Y.

Trimetoquinol. I. Distribution, excretion and metabolism of trimetoquinol.

Biochem. Pharmacol. 19 (1970) 12, 2937-48

C.A. 74 (1971) 97478

Tritiated trimetoquinol or isoproterenol injected i.v. into the guinea pig and rat were metabolized by either O-methylation or conjugation with glucuronic acid.

72-606

SHIMIZU H., DALY J.K.

Formation of cyclic adenosine 3'5'-monophosphate from adenosine in brain slices.

Biochim. Biophys. Acta 222 (1970) 2, 465-73

C.A. 74 (1971) 73812

The title compound was obtained by incubation of guinea pig brain slices (pulse labelled with ^{14}C -adenine) with ^3H -adenosine.

72-607

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

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

Radiokhimiya 13 (1971) 1, 113-7

Chemischer Informationsdienst Organische Chemie (1971) 19, 229

The title compound adsorbed on activated carbon was tritiated with gaseous ^3H and extracted with p-dioxane.

See also :

72-597 Interaction of norepinephrine and prostaglandin E_1 on the adenylyl cyclase system of human and rabbit blood platelets.

2.2.4 - Carbohydrates

72-608

FUCHS B., LEHMANN J., PÄECH 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

Chemische Informationsdienst Organische Chemie (1971) 15, 128

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

72-609

MELCHERS J.

Biosynthesis of the carbohydrate portion of immunoglobulin; radiochemical and chemical analysis of the carbohydrate moieties of two myeloma proteins purified from different subcellular fractions of plasma cells.

Biochemistry 10 (1971) 4, 653-9

C.A. 74 (1971) 71690

Mannose- ^3H -, galactose- ^3H -, and glucosamine- ^3H -labelled myeloma proteins were purified by immune precipitation with myeloma protein-specific antisera.

72-610

MUGANATRU T., NATHANSON J.G.

Studies on the carbohydrate portion of membrane-located mouse H-2 alloantigens.

Biochemistry 9 (1970) 25, 4875-83

Biological Abstr. 52 (1971)

50277

Radioactive glycopeptides were prepared by pronase digestion of carbohydrate-tritiated H-2 alloantigens (labelled with tritiated sugar).

72-611

NADOL J.B.Jr.

Autoradiographic evidence for epithelial origin of glucose-rich components of the basement membrane (basal lamina) and basement lamella in the skin of *Fundulus heteroclitus*.

Zellforsch. Mikroskop Anat. 106 (1970) 3, 398-411

Biological Abstr. 52 (1971) 26072

Both tritiated glucose and proline were used as radioactive precursors in organ culture. Proline incorporation was much less specific than that of glucose.

72-612

ROTENBERG S.B., SPRINSON D.B.

Mechanism and stereochemistry of 5-dehydroquinase synthetase. Proc. Nat. Acad. Sci. U.S. 67 (1970) 4, 1660-72

C.A. 74 (1971) 61130

7-³H- or 1-¹⁴C-labelled 3-déoxy-D-arabino-heptulosonic acid 7-phosphate were enzymically converted to 5-dehydroquinic acid.

2.2.5 - Peptides, Amino acids, Proteins

72-613

BERNENGO M.G., BENZIO G., CISIANO G., PEGORARO E.

Activity of deoxycytidylate deaminase in phytohemagglutinin stimulated human leukocytes.

Boll. Soc. Ital. Biol. Sper. 46 (1970) 4, 163-6

Bull. Signal. Sect. 360, 31 (1970) 34691

DNA synthesis studied by incorporation of tritiated thymidine was 100 fold increased after

treatment with phytohemagglutinin.

72-614

BIELLMANN J.F., SCHUBER F.J.

Stereochemistry of the incorporation of tritiated formate with into L-serine by the rat liver.

Bull. Soc. Chim. Biol. 52 (1970) 2, 211-27

Bull. Signal. Sect. 320, 31 (1970) 10884

L-serine-3-³H was prepared from glycine and formate-³H with liver slices.

72-615

BOHMANN H.B., WINSTON R.A.

Synthesis of glycoprotein, glycolipid protein, and lipid in synchronized L 5178 Y cells.

J. Cell. Biol. 45 (1970) 1, 23-33

Bull. Signal. Sect. 360, 31 (1970) 34025

Labelled glycoprotein, glycolipid protein, and lipid were prepared by incorporation of labelled precursors.

72-616

DROZ B., KOENIG H.L.

Turnover of proteins in axons and nerve endings.

Symp. Int. Soc. Cell Biol. 8 (1969) 35-50

C.A. 74 (1971) 120082

The turnover of proteins in axons and nerve endings was studied by high resolution radioautography after administration of tritium labelled amino acids.

72-617

KUNG S.H.

Incorporation of tritiated pre-

cursors in the cytoplasm of normal and chromatolytic sensory neurons as shown by autoradiography.

Brain Res. 25 (1971) 3, 656-60

C.A. 74 (1971) 122404

The level of incorporation of tritiated RNA and protein precursors in neurons of dorsal root ganglia was studied by autoradiography.

72-618

LEBOUTON A.V.

Protein synthesis in the rat liver acinus after injection of actinomycin D. Autoradiographic study.

Curr. Mod. Biol. 2 (1971) 4, 353-8

C.A. 74 (1971) 123456

The incorporation of ^3H -leucine into cells of liver acinus zone 1 was studied by autoradiography.

72-619

LI H.C., McCORMICK D.B., WRIGHT L.D.

Isolation and characterization of bisnordethiobiotin and tetranordethiobiotin from catabolism of dethiobiotin in *Aspergillus niger*.

Methods Enzymol. 18 (1970) Pt A 401-4

C.A. 74 (1971) 121687

^{14}C - and ^3H -labelled catabolites were obtained by growing aerobically *A. niger* on a liquid medium with added ^{14}C - or ^3H -labelled d-dethiobiotin.

72-620

LINDSAY D.G., SHALL S.

Acetylation of insulin.

Biochem. J. 121 (1970) 5, 737-45

C.A. 74 (1971) 120727

The acetylation of insulin was studied by reaction of the hormone with N-hydroxysuccinimide acetate and by the incorporation of acetyl- ^3H groups in the molecule.

72-621

MATSUO H., MATUBARA H.

Enzymic digestion of C-terminal ^3H -peptides and its possible usefulness for the structural study of proteins.

Peptides = Chem. Biochem. Proc. Amer. Peptide Symp. 1st (1968) 529-38

C.A. 74 (1971) 20252

The C-terminal peptides were easily tritiated by the same method as that used routinely for C terminal amino acid determination.

72-622

MELNER K., BREIPORH L., WAGNER H.H.

The uptake of leucine- ^3H by choroid plexus cells in vitro as studied by electron-microscopic autoradiography.

Z. Zellforsch. Mikroskop. Anat. 104 (1970) 1, 116-26

Biological Abstr. 52 (1971) 18666

72-623

NAGAI T. et al.

^3H -Leucine uptake of developing hypothalamic nuclei in rat and its fluctuation after ovariectomy.

Endocrinol. Jap. 17 (1970) 2, 171-4

Biological Abstr. (1971) 54314

The title uptake was estimated by autoradiography.

72-624

O'HARE K.H., TOWNES P.L.

Morphogenesis of albino rat lung: an autoradiographic analysis of the embryological origin of the type I and II pulmonary epithelial cells.

J. Morphol. 132 (1970) 1,69-87Biological Abstr. 52 (1971) 7042

Tritiated thymidine was found to be an excellent cell marker for in vivo developmental studies of mammalian lung.

72-625

PAVULSONE S., IORDANSKII A.B.

Comparative investigation of reproduction of chromosomes in *Allium cepa* and *Allium fistulosum*.

Genetika 7 (1971) 2, 48-60C.A. 74 (1971) 121456

Strong labelling (thymidine- ^3H) of the telomeric regions was characteristic of the *A.fistulosum* homologous chromosomes, whereas in *A.cepa* chromosomes most labelling occurred in the centromeric region and less in the telomeric region.

72-626

PEDERSEN R.

Density gradient centrifugation studies on lymphocytic choriomeningitis and on viral ribonucleic acid.

J. Virol. 6 (1970) 4, 414-20C.A. 74 (1971) 1322

The uridine- ^3H labelled RNA was extracted from LCM virus and analyzed by rate zonal centrifugation.

72-627

PEQUIGNAT L., PUJOL J.P.

Cutaneous absorption of ^3H -proline at weak concentrations and its incorporation into the collagen of *Psammecinus miliaris*.

Bull. Soc. Lin. Normandie Ser. 10, 2 (1968) 209-219Biological Abstr. 52 (1971) 61423

The uptake of ^3H -proline by *P.miliaris* was shown by using both liquid scintillation counting and autoradiography.

72-628

PICKERING B.T., JONES C.W.

Isolation of radioactive oxytocin and vasopressin from the posterior pituitary gland of the rat after the injection of labelled tyrosine into the cerebrospinal fluid.

J. Endocrinol. 49 (1971) 1, 93-103C.A. 74 (1971) 94833

Isotopically pure oxytocin- ^3H and vasopressin- ^3H were prepared from the pooled pituitary glands of rats after the intracisternal injection of tyrosine- ^3H .

72-629

PLISKA V., BARTH T., THORN N.A.

Metabolites of specifically tritium labelled lysine-vasopressin identification by thin-layer chromatography and determination by the liquid scintillation technique.

Acta Endocrinol. (Copenhagen) 67 (1971) 1, 1-11C.A. 74 (1972) 120670

Specific labelling at position 3 of the tyrosine aromatic ring, allows the detection of some of the primarily formed metabolites whereas the metabolites formed secondary are not detected.

72-630

POECH G.

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

Naunyn-Schmiedeberg Arch. Pharmakol. 268 (1971) 3, 272-99

C.A. 74 (1971) 120391

³H-, ¹⁴C, or ³²P-labelled cyclic 3',5'-AMP were used as substrate for the determination of cyclic-3',5'-nucleotide phosphodiesterase.

72-631

FUJOL J.P.

The collagen of the byssus in *Mytilus edulis* L. II. Autoradiographic study on the incorporation of ³H-proline.

Z. Zellforsch. Mikroskop Anat. 104 (1970) 3, 358-74

Biological Abstr. 52 (1971) 26559

Autoradiographic studies reveal a strong specific incorporation of ³H-proline in the white gland in the food of *M. edulis*.

72-632

RAMPONI G., CAPPUGI G., MASSI P.

Labelling of noncarboxy-terminal glutamic acid during carboxy-terminal analysis by the tritiation method when the γ -glutamyl peptide linkage is present.

Biochem. Biophys. Res. Commun. 41 (1970) 3, 642-6

C.A. 74 (1971) 28071

The tritiation method for C-terminal analysis applied to glutathione yields also tritiated glutamic acid in addition to the labelling of the C-terminal amino acid.

72-633

RICE F.A.H., CONNOLLY J., AZIZ K., MCCURDY J.D.

Autoradiographic studies of the action of leucogenol on leukocytes in the bone marrow, spleen, and peripheral blood of the rat.

J. Infect. Dis. 123 (1971) 2, 117-24

C.A. 74 (1971) 97830

Rat bone marrow neutrophils were labelled by injection with tritiated thymidine.

72-634

ROODYN D.B., GRIVELL L.A.

Amino acid incorporation by isolated mitochondria: automated characterization of yeast respiratory particles labelled in vitro.

Mitochondria: Struct. Funct. Fed. Eur. Biochem. Soc. Meet. 5th (1968) 161-77

C.A. 74 (1971) 120129

Isolated yeast mitochondria incorporate radioactive amino acids into their proteins.

72-635

ROSENBLUM J.

Trans-hydroxyproline is not incorporated into collagen.

Arch. Biochem. Biophys. 142 (1971) 2, 718-9

C.A. 74 (1971) 120137

Tritiated cis-hydroxyproline is incorporated into collagen.

72-636

SCHAEER J.C., RAMSEIR U., SCHINDLER R.

Division cycle of mammalian cells. IV. Incorporation of labelled precursors into DNA of synchronously dividing cells in culture.

Exp. Cell Res. 65 (1971) 1, 17-22.

C.A. 74 (1971) 96397

The incorporation of thymidine- ^3H , uridine-6- ^3H , cytidine-5- ^3H , or deoxyadenosine- ^3H into DNA was studied.

72-637

SENE ENBRENNER M., TRESKA-CIENIELKI J., LODIN Z., MANDEL P.

Autoradiographic study of RNA synthesis in isolated cells in culture from chick embryo spinal ganglia.

Z. Zellforsch. Mikroskop. Anat. 106 (1970) 4, 615-26

Biological Abstr. 52 (1971) 24613

Incorporation of tritiated uridine into RNA was followed by autoradiography.

72-638

SINGER S.J., FENTON J.W.

Affinity labelling of antibodies to the p-azophenyltrimethylammonium hapten, and a comparison of affinity-labelled antibodies of two different specificities.

Biochemistry 10 (1971) 8, 1429-37

C.A. 74 (1971) 123047

The active sites were affinity labelled with p-(trimethylammonium) benzenediazonium difluoroborate.

72-639

KEEB Y., HORVAT D.

Modifications of RNA and protein synthesis in Chinese hamster cells in vitro treated with actinomycin before irradiation.

Stud. Biophys. 18 (1969) 1, 119-26

C.A. 74 (1971) 73841

The incorporation of uridine- ^3H and phenylalanine- ^{14}C into RNA and protein was investigated by autoradiography.

72-640

SMILLIE E.J., BURDON N.H.

Enzymatic conversion of tRNA precursor to 4-SRNA in vitro.

Biochim. Biophys. Acta 213 (1970) 248-50

Genetic Abstr. 01 (1971) 7,2047

Cytoplasmic RNA was extracted from BHK-21/C13 cells which had been exposed to ^3H -ribonucleosides and purified on a Sephadex G-100 column.

72-641

SPOHR G., GRANDBOULAN N., MOREL C., SCHERRER K.

An investigation of free and polyribosome-bound cytoplasmic messenger ribonucleoprotein particles by kinetic labelling and electron microscopy.

Eur. J. Biochem. 17 (1970) 2, 296-318

Biological Abstr. 52 (1971) 61750

Functional mRNA associated in polyribosomes and cytoplasmic free mRNA were labelled selectively to a steady state.

72-642

STEIN O., STEIN Y.

Lipid synthesis and transport in the normal and atherosclerotic aorta. Autoradiographic study of rat and rabbit aortae incubated and perfused with choline- ^3H and oleic- ^3H .

Lab. Invest. 23 (1970) 5, 556-66

C.A. 74 (1971) 21310

Phospholipids and lecithins were labelled by incubation or per-

fusion with tritiated choline or oleic acid.

72-643

STEINERT G., VAN GANSEN P.

Binding of ^3H -actinomycin to vitelline platelets of amphibian oocytes. High resolution autoradiographic investigation.

Exp. Cell Res. 64 (1971) 2, 355-65

C.A. 74 (1971) 72687

The actinomycin- ^3H binding sites were labelled by a) labelling of floating ultrathin sections b) labelling of fixed oocytes before embedding. Electron microscopic autoradiography was used.

72-644

STRAFFON L.H., HAN S.S.

Effects of varying concentrations of formocresol on RNA synthesis of connective tissues in sponge implants.

Oral. Surg. Oral. Med. Oral. Pathol. 29 (1970) 6, 915-25

Biological Abstr. 52 (1971) 24062

The incorporation of uridine- ^3H into RNA was studied by means of quantitative radioautography (the sections were coated with Kodak NTB-3 liquid emulsion).

72-645

STUBBLEFIELD E., GAY M.

Quantitative tritium autoradiography of mammalian chromosomes. II. The kinetics of DNA synthesis in individual chromosomes of Chinese hamster fibroblasts.

Chromosoma 31 (1970) 1, 79-90

Biological Abstr. 52 (1971) 7985

The rates of tritiated thymi-

dine accumulation in each of the chromosome types in Chinese hamster line Don and strain Don-C were assayed by quantitative tritium autoradiography.

72-646

TRAVNICKE M., RIMAN J.

Chromatographic differences between lysyl-tRNA's from avian tumor virus BAI strain A and virus transformed cells.

Biochim. Biophys. Acta 199 (1970) 283-5

Genetics Abstr. 03 (1971) G 97

Aminoacyl-tRNA labelled with either ^3H - or ^{14}C - amino acids was purified by chromatography on a Sephadex G-10 column.

72-647

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

New method of labelling human chorionic gonadotropin for physiologic studies.

J. Clin. Endocrinol. Metab. 32 (1971) 2, 289-92

C.A. 74 (1971) 94840

The title compound was oxidized with KIO_4 followed by reduction with tritiated KBH_4 .

72-648

VAN LENTEN L., ASHWELL G.

Chemical and enzymic modification of glycoproteins. General method for the tritiation of sialic acid-containing glycoproteins.

J. Biol. Chem. 246 (1971) 6, 1889-94

C.A. 74 (1971) 120223

A general method is described for the radioactive labelling of glycoproteins containing terminal sialic acid in the carbohydrate moieties.

72-649

VENEMA R.J., FINGERHUT B.,
GRAFF S.Nucleic acid synthesis in
bladder tumors.J. Urol. 105 (1971) 3, 392-7C.A. 74 (1971) 122929Freshly obtained bladder tumors
were studied autoradiographically
with thymidine-³H and cyti-
dine-³H or uridine-³H.

72-650

WARNATZ H., SCHEIFFARTH F.,
SPARRER R.Immune reactions of lymphocytes
against heterologous tyroglobulin
in experimental immune thy-
roiditis of the guinea pig.Z. Immunitätsforsch. Allerg.
Klin. Immunol. 140 (1970) 3,
304-12C.A. 74 (1971) 2259The incorporation of thymidine-³H
into the nuclei of active
blast cells was studied.

72-651

WERDELIN O., McCLUSKEY R.T.,
WITEBSKY E.In situ labelling of popliteal
lymph node cells with tritiated
thymidine in rats with allergic
adrenitis.Lab. Invest. 23 (1970) 2, 144-9Biological Abstr. 52 (1971)
14215Strictly localized labelling of
rat popliteal lymph node cells
for the purpose of tracing
cells by autoradiography was
obtained by direct injection of
³H-thymidine into the draining
lymph node of rats sensitized
to rat adrenal tissue antigens.

See also :

72-678 Isolation and character-
ization of bisnorbiotin, α -dehydrobisnorbiotin, and
tetranorbiotin by Pseudomonas.

2.2.6 - Steroids

72-652

GLOMSET J.A.

Plasma cholesterol esterifying
enzyme.Methods enzymol. 15 (1969)
543-8C.A. 74 (1971) 120426³H- or ¹⁴C-labelled cholesterol
is used as substrate for the
assay of enzyme activity in
fresh plasma or saline solu-
tions.

72-653

MILGRON E., ATGER M., BAULIEU
E.E.Progesterone binding plasma
protein (PBP)Nature (London) 228 (1970)
5277, 1205-6C.A. 74 (1971) 61220³H-labelled progesterone was
used to study the plasma protein
affinity to progesterone.

72-654

MONDAIN-MONVAL-GERONDEAU M.,
CASTANIER M., SCHOLLEB R.Determination of estrogens in
cow milk.C.R. Acad. Sci. Ser. D 271
(1970) 25, 2381-4C.A. 74 (1971) 04866To determine free estrone, 17 β -
estradiol, 17 α -estradiol and
estriol a method of double la-
belling was used ; tritiation
and reaction of estrogen with
p-iodophenylsulfonyl-³⁵S chlo-
ride.

72-655

NEUAGUSA J.C., CLARK A.L.

Steroid Δ^1 -reductases of pig liver: partial purification of testosterone 5β -reductase.

Can. J. Biochem. 49 (1971) 3, 385-92

C.A. 74 (1971) 120464

Labelled 17β -hydroxy- 5β -androstane-3-one was formed when the soluble fraction of female pig liver containing steroid Δ^4 -reductase was incubated with tritiated testosterone.

72-656

RAITH L., WIEDEMANN H., KARL H.J.

Determination of the metabolism and production rates of testosterone, dehydroepiandrosterone and dehydroepiandrosterone sulfate.

Fresenius'Z. Anal. Chem. 252 (1970) 4/5, 299-3

C... 74 (1971) 72121

The metabolism of the title steroids, was studied by using 3H - or ^{14}C -labelled steroids.

72-657

van TAMMELN E.B., HANSLIK R.P., CLEYTON R.B., BURLINGAME A.L.

Minimal substrate structural requirements for lanosterol-squalene $2,3$ oxide cyclase action. 10^1 -Norsqualene $2,3$ oxide.

J. Amer. Chem. Soc. 92 (1970) 7, 2137-9

Chemischer Informationsdienst Organische Chemie (1970) 6, 380

Tritiated all-trans- 10^1 -norsqualene $2,3$ -oxide was prepared and converted in vitro to tritiated 4,4-dimethyl- $\Delta^8(9),^{14}$ cholestadienol.

72-658

KATKINSON I., ILLER L.C., MURPHY R., AKHTER M.

Formation and reduction of the $14,15$ -double bond in cholesterol biosynthesis.

Biochem. J. 121 (1971) 1, 131-7
C.A. 74 (1971) 71574

Tritiated cholesterol was obtained by conversion of 4,4-dimethylcholesta-8,14-dien- 3β -ol- $2-^3H_2$, tritiated cholesta-8,14-dien- 3β -ol, 4,4-dimethylcholesta-7,14-dien- 3β -ol- $2-^3H_2$, dihydrolanosterol- $2-^3H_2$ and lanosterol- $24-^3H$.

72-659

WILKINSON M., COOMBS M.M., GOMER D.B.

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

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

The synthesis of the title compounds was achieved using modifications of a method due to Henbest. Other compounds were separated by column chromatography on silicic acid impregnated with silver nitrate.

72-660

WINTER J.W.D., GRANT D.R.

Rapid and sensitive assay for plasma testosterone in adults and children.

Anal. Biochem. 40 (1971) 2, 440-9

C... 74 (1971) 120672

The method is based on the displacement of testosterone- 3H from testosterone-binding globulin in dilute pregnancy plasma by sample testosterone.

2.2.7 - Mineral compounds and Miscellaneous compounds

72-661

REES J., DAVIS L.V., LENHOFF H.M.

Paths and rates of food distribution in the colonial hydroid Pennaria.

Comp. Biochem. Physiol. 34
(1970) 2, 309-16

Bull. Signal. Sect. 360, 31
(1970) 33617

Tritiated food was used.

72-662

TOMINAGA T.

Hot-atom chemistry of gas- and liquid-phase systems.

Radioisotopes (Tokyo) 20 (1971)
3, 142-9

N.S.A. 26 (1972) 1935

Reaction between recoil tritium and trisacetylacetonatocobalt (III) complex salt and tetramethyl compounds of Si, Ge, and Sn was studied.

2.3 - CARBON-14 COMPOUNDS

2.3.0 - General

72-663

ANONYMOUS

Stable gaseous isotope separation and purification: April-June 1971.

MLM - 1808 (1971) 7 oct. 44 pp.

N.S.A. 26 (1972) 6751

Results of research are presented on carbon isotope separation by C₀ distillation, chemical exchange, liquid thermal diffusion and gaseous thermal diffusion.

Work on separation of isotopes of Ar, He, Ne, Kr and Xe is reported.

72-664

ANONYMOUS

Stable gaseous isotope separation and purification: July-September 1971

MLM - 1861 (1971) 15 oct., 24pp.

N.S.A. 26 (1972) 6752

Results of research are presented on carbon isotope separation by C₀ distillation, chemical exchange, liquid thermal diffusion, gaseous diffusion, and carbonate conversion.

72-665

STEIN M.J., VOGEL P.C.

Relative ¹⁴C-¹³C kinetic isotope effects.

J. Chem. Phys. 55 (1971) 5,
2007-13

N.S.A. 26 (1972) 67

Relative ¹⁴C-¹³C kinetic isotope effects were studied by model-reaction calculations. The results are in accord with the conclusion reached by Bigeleisen.

2.3.1 - Aliphatic compounds

72-666

ELIAS H., LOETZSCH K.,
WEINER K.

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

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

Chemischer Informationsdienst Organische Chemie (1971) 15,
216

The title compounds were obtained by reaction of MeCH₂¹⁴CH₂Br with PhCH₂NBu₂ at 80° followed by treatment with PrBu₂N at 120° to give MeCH₂¹⁴CH₂Bu₂N.

72-667

MONTAGUE D.C., ROLAND F.S.

Oxirene intermediate in the reaction of singlet methylene with carbon monoxide.

J. Amer. Chem. Soc. 93 (1971)
21, 5381-7

N.S.A. 26 (1972) 4286

Singlet $^{14}\text{CH}_2$ from the photolysis of $^{14}\text{CH}_2\text{CO}$ reacts with CO with an isotopic carbon exchange to form ^{14}CO .

2.3.2 - Aromatic compounds

72-668

DRAHOWZAL F.A., WIESINGER F.

Preparation of radioactive organic compounds. I. L-3- ^{14}C -Methoxy- ω -(1-hydroxy-1-phenyl-isopropyl-amino)-propiofenone hydrochloride. ^{14}C -Labelled oxyfedrin hydrochloride.

Justus Liebigs Ann. Chem. 724 (1970) 199-202

Chemischer Informationsdienst Organische Chemie (1970) 29, 273

The preparation of the title compound is described.

72-669

GOEHLER K.D., SCHUETTE H.K.

Synthesis of radioactively labelled compounds. 26. Preparation of butyl 9-hydroxyfluorene-9-carboxylate-carboxy- $^{14}\text{C}_2$.

Z. Chem. 10 (1970) 5, 190-1

Chemischer Informationsdienst Organische Chemie (1970) 36, 316

The preparation of the title compound is described.

72-670

KOPTYUG V.A., BUSHMELEV V.A.

Reaction of diphenylmethylcarbonium ion with benzene- ^{14}C .

Zh. Org. Khim. 6 (1970) 6, 1345

Chemischer Informationsdienst Organische Chemie (1970) 45, 193

The title reaction gives radioactive $\text{Ph}_2\text{C}^+\text{MeAl}_2\text{Cl}_7$.

72-671

LIN T-H., LEMMON R.M.

Reactions of accelerated ^{14}C with benzene. Degradation of toluene and its mechanism of formation.

J. Phys. Chem. 75 (1971) 23, 3524-6

N.S.A. 26 (1972) 6700

The radioactivity distribution of compounds obtained from impinging 5000- and 4000-eV $^{14}\text{C}^+$ ions on solid benzene at -196° was essentially equivalent to that of toluene obtained in carbon recoil experiments.

72-672

OAE S., TSUCHIDA Y., NAKAI M.

Sulfoxide. XXXV. Tracer study of the reactions of diphenyl sulfone and diphenyl disulfide.

Bull. Chem. Soc. Jap. 44 (1971) 2, 451-4

Chemischer Informationsdienst Organische Chemie (1971) 20, 210

Tracer experiments with ^{35}S and ^{14}C indicated that Ph_2SO reacts via S-O bond fission while Ph_2SO_2 reacts via C-S fission.

72-673

POHLIT H.M., LEMMON R.M.

Partial degradation of 1,3,5-cycloheptatriene- ^{14}C obtained from hot-atom, photolytic, and thermal reactions.

J. Phys. Chem. 75 (1971) 17, 2558-60

N.S.A. 25 (1971) 54702

The distribution of ^{14}C in the title compound obtained from hot atom (5-5000 eV Cl^{14} ions) photolytic ($^{14}\text{C}_2\text{N}_2$ in benzene) and thermal reactions ($^{14}\text{CH}_3\text{N}_2$ in benzene) was studied.

72-674

POHLIT H.M., ERWIN W.,
LIN T-H., LEMMON R.M.

Hot-atom chemistry of ^{14}C in
solid benzene at kinetic ener-
gies between 5 and 100 elec-
trons volts.

J. Phys. Chem. 75 (1971) 17,
2555-7

N.S.A. 25 (1971) 54703

The yields of seven major hy-
drocarbon products from the
title interaction were determi-
ned.

2.3.3 - Heterocyclic Compounds

72-606 Formation of cyclic ade-
nosine 3',5'- monophosphate
from adenosine in brain slices.

2.3.4 - Carbohydrates

72-675

MONIER D., WAGLE S.R.

Gluconeogenesis in galactosa-
mine- induced hepatitis.

Proc. Soc. Exp. Biol. Med. 176
(1971) 2, 377-80

C.A. 74 (1971) 74084

Incorporation of labelled ala-
nine, pyruvate, and glutamic
into glucose by liver slices
from rats treated with galacto-
samine was investigated.

72-676

SACKS W., SACKS S.

Glucose binding by human ery-
throcytes.

Res. Commun. Chem. Pathol.
Pharmacol. 2 (1971) 1, 35-52

Labelled binding material was
prepared from red blood cells
incubated in ^{14}C -glucose.

See also :

72-612 Mechanism and stereo-
chemistry of 5-dehydroquinase

synthetase.

2.3.5 - Peptides, Amino acids,
Proteins

72-677

CHESTERTON C.J.,
BUTTEWORTH P.H.W., PORTER J.W.

Enzymic synthesis of carbon-14-
labelled coenzyme A.

Methods Enzymol 18 (1970) Pt A,
371-6

C.A. 74 (1971) 121250

CoA labelled with ^{14}C was syn-
thesized in either the adenine
or pantetheine moieties.

72-678

IWAHARA S., McCORMICK D.B.,
WRIGHT L.D.

Isolation and characterization
of bisnorbiotin, α -dehydrobis-
norbiotin, and tetranorbiotin
from catabolism of biotin by
Pseudomonas.

Methods Enzymol. 18 (1970) Pt A,
404-9

C.A. 74 (1971) 121689

^{14}C - and ^3H - labelled catabo-
lites were obtained by growing
aerobically Pseudomonas on a
yeast extract-salts medium con-
taining the correspondingly
labelled biotin.

72-679

MEDZIHRADESKY K., VARGHA H.S.,
FITTKAU S., MARQUARDT I.

Labelled polypeptides. I. Syn-
thesis of the N-terminal deca-
peptide of ACTH labelled with
carbon-14 on the glycine resi-
due.

Acta Chim. (Budapest) 65 (1970)
4, 449-59

C.A. 74 (1971) 13416

The N-terminal decapeptide of
ACTH labelled with ^{14}C on the
glycine residue was prepared.

72-680

PALUT D., GRZYMALA W.,
KOZYCKI Z.Investigation of the metabolism
of carbaryl-¹⁴C on animal model
systems.Rocz. PZH 21 (1970) 417-26Nucl. Sci. Abstr. Poland 06
(1970) 555The metabolism of carbaryl-¹⁴C
was studied in vitro by thin
layer chromatography and scintillation measurements.

72-681

ROY H., MOUDRIANAKIS E.N.

Interactions between ADP and
the coupling factor of photo-
phosphorylation.Proc. Nat. Acad. Sci. U.S. 68
(1971)2, 464-8C.A. 74 (1971) 95643The photophosphorylation cou-
pling factor formed tight com-
plexes with ¹⁴C-ADP in vitro
which underwent a trans-phos-
phorylation reaction to yield
¹⁴C-AMP and ¹⁴C-ATP.

72-682

SCOTT T., FREINKEL N.,
KLEIN J.H., NITZAN M.Metabolism of phospholipids,
neutral lipids and carbohydra-
tes in dispersed porcine thy-
roid cells: comparative effects
of pituitary thyrotropin and
dibutyryl-3',5'-adenosine
monophosphate on the turnover
of individual phospholipids
in isolated cells and slices
from pig thyroid.Endocrinology 87 (1970) 5,
854-63Biological Abstr. 52 (1971)
13579The capacity of suspensions of
porcine thyroid cells to incor-
porate ³²P-orthophosphate intoindividual phospholipids and U-
¹⁴C glucose into neutral lipids
in vitro was investigated.

72-683

YEAGER H.Jr., MASSARO G.,
MASSARO D.Glycoprotein synthesis by the
trachea.Amer. Rev. Resp. Dis. 103 (1971)
2, 188-97Biological Abstr. 52 (1971)
63686Slices of rat trachea incubated
with D-glucosamine-1-¹⁴C incor-
porated radioactively into
protein.

See also:

72-619 Isolation and characte-
rization of bisnordethiobiotin
and tetranordethiobiotin from
catabolism of dethiobiotin in
Aspergillus niger.72-630 Assay of phosphodiester-
ase labelled cyclic 3',5'-AMP
as substrate.72-646 Chromatographic diffe-
rences between lysyl-t RNA's
from avian tumor virus BAI
strain A and virus transformed
cells.

2.3.6 - Steroids

See also:

72-652 Plasma cholesterol este-
rifying enzyme.72-656 Determination of the me-
tabolism and production rates
of testosterone, dehydrospian-
drosterone and dehydrospian-
drosterone sulfate.72-659 The synthesis and puri-
fication of 4-(¹⁴C)- and 7α
(³H)-androsta-4,16-dien-3-one.2.3.7 - Mineral Compounds and
Miscellaneous compounds

72-684

KUHRY J.G.

Chemical behavior of carbon-14 and nitrogen-13 hot atoms in nitrides and cyanides.

U.S. At. Energy Comm. (1970)
NP-18126, 101 pp.

C.A. 74 (1971) 48624

The ^{14}C labelled compounds were obtained by thermal n irradiation and the ^{13}N labelled compounds by ^{14}MeV n.

72-685

WAJDA S., KACZMAREK M.

Radioisotopic exchange in the $(\text{Cr}(\text{C}_2\text{O}_4)_3)_3 = ^{14}\text{C}_2\text{O}_4^{2-}$ system.

Nukleonika 16 (1971) $1/2$, 53-60N.S.A. 25 (1971) 46480

The kinetics of the exchange reaction in the title system at 70, 80 and 90° C were studied.

72-686

WAJDA S., PRUCHNIK F., ZARZECKY A.

Radioisotopic exchange of ligands in chloro- and thio-cyanatomolybdates (III).

Nukleonika 16 (1971) $3/4$, 125-31N.S.A. 25 (1971) 54558

The kinetic of exchange of ^{14}C and radiochlorine in the title systems is examined.

2.4 - HALOGEN LABELLED COMPOUNDS

72-687

KOROS E., ORBAN M., BURGER M.

Kinetics of iodine exchange between moniodoacetic acid and molecular iodine in benzene.

Radiochem. Radioanal. Lett. 4 (1970) 3, 165-9

C.A. 73 (1970) 87383

The title exchange was studied.

72-688

LEVY A., MEYERSTEIN D., OTTOLENGHI M.

Photochemically induced isotope exchange between iodobenzene and molecular iodine.

J. Phys. Chem. 75 (1971) 21, 3350-4

N.S.A. 26 (1972) 4292

The title isotopic exchange was studied in methylcyclohexane solutions.

72-689

NIEMANN E.

Labelling of proteins with radioactive iodine.

Ger. 1,545,799

C.A. 74 (1971) 95358

Proteins were labelled by oxidation of radioactive iodide with addition of carrier iodide in an acid medium followed by separation of the released radioactive I together with the carrier iodide and subsequent placement in a protein solution.

72-690

POCKER Y., BUCHHOLZ R.F.

Electrostatic catalysis of ionic aggregates. I. Ionization and dissociation of trityl chloride and hydrogen chloride in lithium perchlorate-diethyl ether solutions.

J. Amer. Chem. Soc. 92 (1970) 7, 2075-84

Chemischer Informationsdienst Organische Chemie (1970) 28, 036

The isotopic exchange of $^{36}\text{Cl}^-$ with trityl chloride was studied.

72-691

QUINN J.L.

Radiomuclidic imaging procedures in the diagnosis of cancer.

Cancer J. Clin. 21 (1971) 5, 292-301

N.S.A. 26 (1972) 4794

Data are tabulated on 17 radionuclides (^{18}F , ^{67}Ga and others) the pharmaceutical into which each is incorporated and the detection method used for each.

72-692

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

Process for the preparation of new mercurifluorescein derivatives.

Belg. Pat. 724,644

Mercurifluorescein derivatives were labelled with radioactive iodine.

72-693

SCHERER K.E., LORENZ W.J., SCHENCK P., LORENZ D.

Role of radionuclides in the diagnosis of cancer.

CONF - 7109101-438 (1971) 28 pp

N.S.A. 25 (1971) 52127

Short-lived radioisotopes (^{18}F) are of special importance in the diagnosis of cancer.

72-694

SHAIKIN M.

Chemical effect of bromine activated by isomeric transition of bromine-82 m in benzene and in 1-bromo-2,4-dinitrobenzene.

Indian J. Chem. 8 (1970) 8, 728-30

Chemischer Informationsdienst Organische Chemie (1970) 48, 212

The rate of uptake of ^{82}Br by the title compounds has been calculated.

72-695

SINN H., GEORGI P., LORENZ W.J.

Brain scintigraphy with the positron emitter ^{18}F .

Z. Krebsforsch. 74 (1970) 4, 349-54

Biological Abstr. 52 (1971) 20917

The preparation of $(\text{Al } ^{18}\text{F}_6)^{3-}$ complex is described. A new detector system is used.

72-696

SJOBORG B.O.H., SJOGREN B.K.F., ULLBERG S.G.F.

Process for the production of alanine radioactive by products.

French Pat. 1,581,849

The preparation of p-iodo- ^{125}I phenylalanine and 3,4-diodo- $^{125}\text{I}_2$ -phenylalanine is described.

72-697

SPEVACEK V.

HMO estimation of iodine exchange rates between substituted aryl iodides and alkali iodides.

Radiochem. Radioanal. Lett. 7 (1971) 5/6, 367-74

N.S.A. 25 (1971) 57425

Isotope exchange rates between substituted aryl iodides and inorganic iodides were estimated from localization energies calculated on the basis of the Hückel MO theory.

72-698

TACHIKAWA E., KAHARA T.

Reactions of bromine-80 activated by isomeric transition in the gaseous phase. The isotopic variation between methane and

methane -d₄.

Bull. Chem. Soc. Japan 43
(1970) 5, 1293-7

Chemischer Informationsdienst
Organische Chemie (1970) 35,
183

The reactions of ⁸⁰Br in gaseous CH₄ or CD₄ were studied.

See also :

72-686 Radioisotopic exchange of ligands in chloro- and thiocyanatomolybdates (III).

2.5 - PHOSPHORUS-32 COMPOUNDS

72-699

PALMER F.B.St.C., VERPOORCE J.A.

Phosphorus components of solubilized erythrocyte membrane protein.

Can. J. Biochem. 49 (1971) 3, 337-47

C.A. 74 (1971) 122510

The polyphosphoinositides were rapidly labelled by incubation of erythrocytes with inorganic ³²P.

ZHIVKOV V.

72-700

Measurement of uridine diphosphate glucuronic acid concentrations and synthesis in animal tissues.

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

Biological Abstr. 52 (1971) 55580

The incorporation of ³²P-phosphate into UDP-glucuronic acid in vivo was studied.

See also :

72-630 Assay of phosphodiesterase labelled cyclic 3',5'-AMP as substrate.

2.6 - SULFUR-35 COMPOUNDS

72-701

KOVACS V.

Methionine-³⁵S and selenomethionine-⁷⁵Se metabolism in rats. III. Radiochromatographic study of the incorporation of sulfur-³⁵-labelled amino acids in the liver, milk, and kidney proteins as a result of x-ray irradiation.

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

C.A. 74 (1971) 120950

72-702

SCHWABE K., ECKARDT A.

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

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

Chemischer Informationsdienst Anorganische Chemie (1971) 18, 301

Thiourea was labelled with ³⁵S.

72-703

SUSBIELLE H., GUHA S.

Anabolism during pregnancy. I. Preferential incorporation of sulfur-³⁵ by the rat fetus. Comparison between sulfite-³⁵S and methionine-³⁵S.

Arch. Sci. Physiol. 24 (1970) 2, 165-72

C.A. 74 (1971) 29766

The incorporation of labelled methionine was 3,5 fold greater than the incorporation of labelled sulfite.

72-704

TAKI KO

Reactions of recoil sulfur-³⁵ atoms with organic compounds.

I. Distribution of sulfur-35 atoms on mercaptobenzothiazole.

Bull. Chem. Soc. Jap. 43 (1970) 8, 2626-8

Chemischer Informationsdienst
Organische Chemie (1970) 46,
204

The reactions of mercaptobenzothiazole with ^{35}S formed by ^{35}Cl (n,p) ^{35}S ($6\text{H}_3\text{Cl}$, is the Cl source) were studied.

See also :

72-654 Determination of estrogens in cow milk.

72-672 Sulfoxide. XXXV. Tracer study of the reactions of diphenyl sulfoxide with diphenyl disulfide.

2.7 - OXYGEN LABELLED COMPOUNDS

72-705

ANTOSIN G.V., MINACEV Ch.M.,
SEVOST'YANOV E.N., KONDRAT'EV
D.A.

Mobility of oxygen of synthetic NaY zeolite studied by an isotopic exchange method.

Zh. Fiz. Chim. 44 (1970) 10,
2622-3

Chemischer Informationsdienst
Anorganische Chemie (1971) 4,
274

The exchange of ^{18}O between molecular O and a NaY-type zeolite was shown to be first order with respect to isotope concentration and pressure.

72-706

GOFF H., MURMANN R.K.

Studies on the mechanism of isotopic oxygen exchange and reduction of ferrate (VI) ion (FeO_4^{2-})

J. Amer. Chem. Soc. 93 (1971)
23, 6058-65

N.S.A. 26 (1972) 4300

The rate of ^{18}O exchange between FeO_4^{2-} and water was measured in basic, aqueous and acidic media.

72-707

HINO M., SATO T.

I.R. absorption spectra of silica gel- H_2^{16}O , $-\text{D}_2^{16}\text{O}$ and $-\text{H}_2^{18}\text{O}$

Bull. Chem. Soc. Jap. 44 (1971)
1, 33-7

Chemischer Informationsdienst
Anorganische Chemie (1971) 16,
203

The mechanism of O atom exchange reaction between the silanol groups of silica gel and water is discussed.

72-708

KUPRIK A.V., TERESHKEVICH M.O.,
LYSENKO G.I., YATSENKO V.S.,
KHKAMTSOVA N.Ya., PRIVEN Ya.A.,
VALENCHUK M.I.

Effect of electrolytes on the rate of some processes in solutions.

Zh. Obshch. Khim. 41 (1971) 1,
3-8

Chemischer Informationsdienst
Anorganische Chemie (1971) 16,
297

The exchange reactions were studied in the systems of $\text{Co}(\text{NO}_3)_2$, NaNO_3 or KNO_3 with KCl , NaCl , LiCl in the presence of H_2^{18}O .

72-709

LUNENOK-BURMAKINA V.A.,
KUPRIJ V.Z.

Isotopic study of the thermal decomposition of peroxy compounds of sulfur and some peroxyhydrates.

Z. Neorg. Chim. 15 (1970) 7,
1806-10

Chemischer Informationsdienst

Anorganische Chemie (1970) 38, 349

The mechanism of thermal decomposition of these peroxides compounds (products of molecular addition of H_2O_2 to K_2SO_4 , $Na_4P_2O_7$ or K_2CO_3) was studied by ^{18}O labelling.

72-710

MAJOUBE M.

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

J. Chim. Phys. 68 (1971) 4, 625-36

N.S.A. 25 (1971) 41921

The fractionating factors of ^{18}O between water vapor and ice were measured between 0 and $33,4^\circ C$.

72-711

MORROW B.A., DEVI A.

Adsorption of water and oxygen- 18 exchange of surface hydroxyl groups of silica.

Can. J. Chem. 48 (1970) 15, 2454-6.

Chemischer Informationsdienst Anorganische Chemie (1970) 51, 299

The exchange of ^{18}O between $H_2^{18}O$ and the surface hydroxyl groups on highly dehydrated silica was studied by I.R. spectroscopy.

72-712

NEKIPELOV V.N., KASATKINA L.A.

Isotopic exchange in carbon monoxide molecular over zinc and iron oxides.

Kinet. Katal. 11 (1970) 3, 683-91

Bull. Signal. Sect. 170, 32 (1971) 1653

Kinetics of isotope exchange $^{12}C^{18}O + ^{13}C^{16}O = ^{12}C^{16}O +$

$^{13}C^{18}O$ on ZnO , Fe_2O_3 and Fe_3O_4 was studied at -196 to 400° and 5-200 torr.

72-713

STRANKS D.K., SWADDLE T.W.

Effect of pressure on the kinetics of the exchange of ^{18}O between hexaquo chromium (III) ion and solvent water. Evidence for an associative interchange mechanism.

J. Amer. Chem. Soc. 93 (1971) 11, 2783-4

N.S.A. 25 (1971) 41797

The ^{18}O exchange of the six water molecules of $Cr(H_2O)_6^{3+}$ was determined at 7 different pressure ranging from 1.0 bars to 2.48 kbars.

See also :

72-585 Relation between deuterium and ^{18}O contents in rain water.

2.8 - NITROGEN-15 COMPOUNDS

72-714

JEEVANANDAM M., GUPTA A.K.

Equilibrium nitrogen isotope effects in metal ammine/ammonia systems.

Indian J. Chem. 8 (1970) 5, 436-41

Chemischer Informationsdienst Anorganische Chemie (1970) 33, 315

Various ^{14}N as well as ^{15}N substituted transition metal amines and mixed complexes were prepared.

72-715

KUZNETSOV A.I., PANCHENKOV G.M.

Kinetics of the isotopic exchange of nitrogen between ammonia and its complexes with alcohols.

Zh. Fiz. Khim. 44 (1970) 4, 1116-8

Chemischer Informationsdienst
Organische Chemie (1970) 33, 190

The isotopic exchange of ^{15}N and ^{14}N between NH_3 and its complexes with MeOH , EtOH , PrOH and $\text{C}_5\text{H}_{11}\text{OH}$ were studied.

72-716

MAMAEV. V.P., BOROVIK V.P.,
GOREINKEL M.J., IVANOUSKAYA
L. Yu.

Route for the synthesis of
spiropyrimidinebarbituric acids

Izv. Akad. Nauk. SSSR, Ser.
Khim. (1970) 7, 1637-8

C.A. 74 (1971) 28276

The title compound was labelled
with ^{15}N by reaction of 1,3-
dimethyl-barbituric acid with
urea- ^{15}N and BzH in AcOH .

72-717

SCHROEDER G., LUTTKE W.

Mechanism of formation of phe-
nylrosinduline in the induline
melt reaction.

Justus Liebigs Ann. Chem. 736
(1970) 16-32

Chemischer Informationsdienst
Organische Chemie (1970) 38, 185

The induline was labelled with
 ^{15}N .

72-718

TANACS B., KUCSMAN A.

Bonding system of N-acyl sulfi-
limines. VIII. Preparation of
nitrogen-15 labelled N-acyl
sulfilimines.

Acta Chim. Acad. Sci. Hung. 65
(1970) 4, 369-73

$\text{R}_2\text{S}^{15}\text{N-p-Me C}_6\text{H}_4\text{SO}_2$ were pre-
pared ($\text{R} = \text{Me, Et, Ph}$).

See also :

72-684 Chemical behavior of
carbon-14 and nitrogen-13 hot
atoms in nitrides and cyanides.

2.9 - CARBON-13 COMPOUNDS

72-719

MEYERSON S., FERRY W.O.,
BEYNON J.H., BAITINGER W.E.
AMY J.W., CAPRIOLI R.M.,
RENAUD R.N., LEITCH L.C.

Organic ions in the gas phase.
XXV. Decomposition of benzene
under electron impact.

J. Amer. Chem. Soc. 92 (1970)
24, 7236-8

C.A. 74 (1971) 52640

Benzene-1,2- ^{13}C -3,4,5,6- d_4
was prepared by Diels-Alder
condensation of maleic-2,3- $^{13}\text{C}_2$
anhydride with 1,3-butadiene -
 d_6 followed by simultaneous
dehydrogenation and decarboxy-
lation with $\text{Pb}(\text{OAc})_4$ in Me_2SO_4 .

72-720

SIEGEL A.S.

Loss of carbon monoxide from
phenyl isocyanate.

Org. Mass. Spectrom. 3 (1970)
11, 1471

C.A. 74 (1971) 52646

$\text{PhNCO-}\alpha\text{-}^{13}\text{C}$ was prepared from
 $\text{PhCO}_2\text{H-}\alpha\text{-}^{13}\text{C}$ by successive
conversion to the acid chloride
and the acyl azide and then by
elimination of N .

See also :

72-665 Relative ^{14}C - ^{13}C kinetic
isotope effects.

72-712 Isotopic exchange in
carbon monoxide molecules over
zinc and iron oxides.

2.10 - TECHNETIUM LABELLED COMPOUNDS

72-721

CALDERON M., SONNEMAKER R.E.,
HERSH T., BURDINE J.A. ^{99m}Tc -human albumin microspheres (HAM) for measuring the rate of gastric emptying.Radiology 101 (1971) 2, 371-4
N.S.A. 26 (1972) 4803

The title compound was used to measure gastric emptying time.

72-722

DUSZYNSKI D.O., JEWETT T.C.,
ALLEN J.E. $^{99m}\text{Tc}/\text{Na}$ pertechnetate scanning of the abdomen with particular reference to small bowel pathology.Amer. J. Roentgenol. Radium
Ther. Nucl. Med. 113 (1971) 2,
258-62N.S.A. 26 (1972) 2412 $^{99m}\text{Tc}/\text{Na}$ pertechnetate scanning to diagnose gastric mucosa of Meckel's diverticula.

72-723

RHODES B.A., STERN H.S.,
BUCHANAN J.A., ZOLLE I.,
WAGNER H.N.Lung scanning with ^{99m}Tc -microspheres.Radiology 92 (1971) 3, 613-21
N.S.A. 25 (1971) 46913The preparation of ^{99m}Tc -microspheres is described.

72-724

RICHARDS P., ATKINS H.L.,

Technetium- 99m labelled compounds.Proc. Annu. Meet. Jap. Soc.
Nucl. Med. 7th (1967) 165-70C.A. 74 (1971) 28602The preparation of ^{99m}Tc -human serum albumin complex is described. The purification from

Fe, ascorbic acid and pertechnetate was achieved by Sephadex G-25 gel filtration.

72-725

SPENCER R.P., CORNELIUS E.A.,
KASE N.G.Breast secretion of ^{99m}Tc in the amenorrhea-galactorrhea syndrome.J. Nucl. Med. II (1970) 7, 467
Bull. Signal. Sect. 361, 32
(1971) 788

72-726

TAPLIN G.V., POE N.D., ISAMA T.,
DORE E.K.

Comparison of radioaerosol versus radioxenon inhalation procedures in obstructive lung disease and pulmonary embolism.

UCLA - 12 - 834 (1971) 32 pp.

N.S.A. 25 (1971) 58040The advantages of scintillation camera lung imaging following the injection of ^{99m}Tc -labelled albumin macroaggregates, the inhalation of ^{113m}Tn -labelled albumin aerosols and the inhalation of ^{133}Xe are discussed.

72-727

WEBER T.H., NORDMAN C.T.

Lung scanning with the gamma camera, using complexes of ^{99m}Tc -sulphur colloid and macroaggregated human serum albumin.Nucl. Medicine 10 (1971) 2,
129-34N.S.A. 25 (1971) 55296

The preparation of the title compounds takes about 20 minutes and can be performed routinely by a laboratory technician.

72-728

WEINSTEIN M.B., SMOAK W.M.

Reducing particle size in technetium- 99m -sulfur colloid pre-

parations. Reply to comments.

J. Nucl. Med. II (1970) 12,
767-8

C.A. 74 (1971) 72394

Variability of generator eluates may be related to differences in trace metal contaminants.

72-729

WEISS E., BLAND W.H., WINSTON M.A., KRISHNAMURTHY G.T., THOMAS B.P.

^{99m}Tc technetium sulfide and the scintillation camera in the rapid diagnosis of pericardial effusion.

Nucl. Medicine 10 (1971) 2,
122-8

N.S.A. 25 (1971)55295

It was shown that ^{99m}Tc -sulfide is preferable to ^{99m}Tc sodium pertechnetate in the rapid diagnosis of pericardial effusion.

2.11 - INDIUM-113 LABELLED COMPOUNDS

72-730

MATIN P., GOODWIN D.A.

Cerebrospinal fluid scanning with ^{111}In .

J. Nucl. Med. 12 (1971) 10,
668-72

N.S.A. 26 (1972) 4804

Radiopharmaceuticals labelled with ^{111}In have been developed for cerebrospinal fluid scanning.

72-731

MISHIMA T., HISADA K.I.

A preparation of ^{113m}In sulfur colloid for bone marrow and liver scanning.

Nippon Acta Radiol. 30 (1970)
1, 91-4

Biological Abstr. 52 (1971)
63607

An efficient method of preparing colloidal ^{113m}In was developed using a reaction of sodium thiosulfate with ^{113m}In .

72-732

NIEHOFF R.D., HENDEE W.R., BROWN D.W.

Placenta scanning with ^{113}In .

J. Nucl. Med. 11 (1970) 1, 15-8

Biological Abstr. 52 (1971)
24654

The title method is safe, accurate, painless and simple to perform.

72-733

WATANABE K., KAWANO Y.

Effects of pH on ^{113m}In distribution, in order to simplify the preparation of ^{113m}In for blood pool and liver scanning.

Kaku Igaku 7 (1970) 1, 8-15

N.S.A. 25 (1971) 58043

It was shown that pH measurement and autoclaving can be omitted by using a sterile generator and sterilized reagents.

See also :

72-726 Comparison of radioaerosol versus radioxenon inhalation procedures in obstructive lung disease and pulmonary embolism.

2.12 - MISCELLANEOUS LABELLED COMPOUNDS

72-734

CHOWDHARY S.Y., JASZ A.

Formation and control of samarium and ytterbium chelate complexes used as radiopharmaceuticals.

Radiochem. Radioanal. Lett. 8
(1971) 4, 225-31

N.S.A. 26 (1972) 6704

Metal complexes of EDTA, DTPA, and HEDTA labelled with ^{153}Sm and ^{169}Yb were prepared by the exchange reaction.

72-735

COLOMBETTI L.G., YEH S.H.

^{68}Ga labelled compounds for tomographic studies.

Nucl. Sci. J. 8 (1971) 1,21-35

N.S.A. 26 (1972) 6697

The preparation of ^{68}Ga labelled compounds is described.

72-736

CREE G.M.

Stability of chloromerodrin (3-(chloromercurio)-2-methoxypropylurea) : factors affecting its decomposition in aqueous solution and nature of the decomposition product.

J. Organometal. Chem. 27 (1971) 1, 1-12

Chemischer Informationsdienst Anorganische Chemie (1971) 19, 048

The decomposition of the title compound labelled with ^{203}Hg or ^{197}Hg was studied by PMR spectroscopy.

72-737

DEB D.L., SCHEFFER F.

Effect of the amino acid fraction of root-exudate on the absorption of manganese by eight varieties of oat (*Avena sativa*) in sterile and nonsterile media.

Agrochimica 15 (1970) 1, 74-85

C.A. 74 (1971) 124244

Labelled MnSO_4 and MnO_2 were used to study the effect of the amino acid fraction of the

root exudate on the absorption of Mn by plants.

72-738

DELAND F.H., JAMES A.E.Jr., WAGNER H.N.Jr., HOSAIN F.

Cisternography with ^{169}Yb -DTPA.

J. Nucl. Med. 12 (1971) 10, 683-9

N.S.A. 26 (1972) 4806

^{169}Yb -Ca-diethylenetriaminepentacetic acid was used in cisternography.

72-739

KUBIN M., THYN J.

Use of radioactive tracers in chemical engineering research.

Tech. Chem. 40 (1970) 7-16

C.A. 74 (1971) 14550

Glass balls were activated by thermal neutron flux and water was traced by ^{198}Au in the form of cyanide complex.

72-740

LEBECKA J., LEWZUK J.

Measurement of the density of a steam-and-water mixture in boiler tubes by labelled atoms.

Simp. Ispol'z Metod. Mechenykh. At. Soversh. Tekhnol. Prostsosov Proizvod. Primen. Yad.-Fiz. Metod. Anal. Sostava Veshchesta (1968) 167-74

C.A. 74 (1971) 14565

$(\text{NH}_4)\text{ReO}_4$ labelled with ^{186}Re was introduced into the boiler drum.

72-741

LOPEZ-MAJANO V.

The use of radioisotopes in the study of the pulmonary circulation.

Cor Vasa 12 (1970) 1, 27-37

Biological Abstr. 52 (1971) 41815

Two types of radioisotopes can be used : gaseous isotopes (^{133}Xe) and particles labelled with radioisotopes.

72-742

MAGYARI J.

Application of results obtained by radioactive isotopes in the glass industry. I.

Epitoanyag 22 (1970) 4, 151-7

Ceramic Abstr. (1971) 164 A

Flow characteristics in glass-melting tanks were studied by radioactive isotopes.

72-743

MAMEESH M.S., APRAHAMIAN S.
SALJI J.P., COWAN J.W.

Availability of iron from labelled wheat, chickpea, broad bean, and okra in anemic blood donors.

Amer. J. Clin. Nutr. 23 (1970) 8, 1027-32Biological Abstr. 52 (1971) 50712

Wheat, chickpea, broad bean and okra were labelled with radioactive Fe.

72-744

MITROV G., SALAMBASHEV L.,
MUSCHMOV D., TODOROV G.

Isotope nephrography with ^{51}Cr -EDTA and ^{58}Co -DTPA.

Radiobiol.-Radiother. 12 (1971) 2, 191-6N.S.A. 26 (1972) 4799

72-745

MULLEN A.L., BRETTAUER E.W.,
STANLEY R.E.

Excretion of radiotungsten by the dairy cow.

AGFD 89 (1970)

Food Sci. Tech. Abstr. (1971)

0115 A

Lactating cows were given oral or intravenous doses of tungsten-187 or tungsten-181.

72-746

NOUEL J.P.

Carrier for scintigraphic preparations involving red blood corpuscles.

Ger. Offen. 2,020,348

C.A. 74 (1971) 61557

Erythrocytes sensitized with a SnCl_2 solution were labelled with radioactive pertechnetate.

72-747

PALUCHOWA H., GRZELEWSKI I.

Causes of the rapid aging of a zinc catalyst for the dehydrogenation of acenaphthene to acenaphthylene. Isotopic studies.

Simp. Ispol'z Metod. Mechenykh At. Soversh. Tekhnol. Protsesov Proizvod. Primep. Yad.-Fiz. Metod. Anal. Sostava Veshchestva (1968) 205-11

C.A. 74 (1971) 16046

The title catalyst was labelled by isotopic exchange between the ZnO and the ^{65}Zn labelled ZnSO_4 in an aqueous solution.

72-748

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

Process for the preparation of new fluorescein radioactive derivatives.

Belg. Pat. 725,326

Fluorescein derivatives were labelled with radioactive mercury.

72-749

SHVEDOV V.P., OSIPOV V.N.

Electromigration of sodium-22,

potassium-42, rubidium-86, and cesium-134 in fused chlorides. Radiokhimiya 13 (1971)1, 98-101
Chemischer Informationsdienst Anorganische Chemie (1971) 20, 275

72-750

THIESSEN G., THIESSEN H.,
DOWIDAT H.J., LUCIANO L.,
REALE E.

The diffusion of ^{59}Fe -labelled hemoglobin, an artefact of the fixation with glutaraldehyde.

Histochemie 23 (1970) 2, 171-5

Biological Abstr. 52 (1971)
12246

Incorporation of ^{59}Fe into the hemoglobin was obtained by injections of ^{59}Fe -citrate into the caudal vein of rats.

72-751

TOPOREK M., GIZIS E., MEYER L.M.

Effect of human serum B_{12} binders on uptake of vitamin B_{12} by isolated perfused rat liver.

Proc. Soc. Exp. Biol. Med. 136
(1971) 4, 1119-21

C.A. 74 (1971) 123425

^{57}Co -labelled vitamin B_{12} bound to transcobalamin II was prepared.

72-752

WILWERGER F.

Application of results obtained by radioactive isotopes in the glass industry. II.

Epitoanyag 22 (1970) 4, 158-60
Ceramic Abstr. (1971) 164 A

Flow characteristics in glass melting tanks were studied using Na_2CO_3 labelled with ^{24}Na .

See also :

72-598 Uptake of ^3H -labelled toluidine blue and neutral red in the parathyroids of the dog.

72-691 Radionuclidic imaging procedures in the diagnosis of cancer.

72-726 Comparison of radioaerosol versus radioxenon inhalation procedures in obstructive lung disease and pulmonary embolism.

3 - RADIODECOMPOSITION, STABILITY, STORAGE

72-753

TEOULE R., CADET J.

Radiolysis of thymine in aerated aqueous solution.

J. Chem. Soc. D 20 (1971)
1269-70

N.S.A. 26 (1972) 6679

Twenty-three products from the radiolysis of the title solution were identified and classified in a coherent scheme.

4 - PURIFICATION, SEPARATION

72-754

KAWAMURA S., SHIBATA S.,
KUROTAKI K.

Adsorption characteristics of radionuclides on zirconium hexacyanoferrate (II).

Anal.Chim.Acta 56 (1971)3,405-13

N.S.A. 26 (1972) 4207

The chemical properties of FeZr , the adsorption rates of radionuclides, the pH-titration curves and the ion-exchange behavior are discussed.

72-755

MIASSOD R., PENON P., TEISSERE M., RICARD J., CECCHINI J.P.

Contribution to the study of rapidly labelled RNA from lentil roots: isolation and identification, effect of a hormone on their synthesis and on the synthesis of peroxidases.

Biochem. Biophys. Acta 224 (1970) 2, 423-40

Biological Abstr. 52 (1971) 63123

Labelled RNA were isolated by chromatography on methylated albumin columns eluted by sodium dodecyl sulfate.

72-756

STASCHEWSKI D.

Extensive enrichment of stable oxygen isotopes by countercurrent distillation of heavy water.

Chem.-Ing.-Tech. 43 (1971) 14, 810-6

N.S.A. 25 (1971) 57675

The construction and mode of operation of a distillation plant that permits isolation of pure oxygen isotopes starting from heavy water are described.

72-757

WIEDEMANN M., RAITH L., KARL H.J

Adsorption of steroids on Florisil and Amberlite. Method for the separate determination of glucoronides and sulfates of androgens.

Fresenius'Z. Anal. Chem. 252 (1970) ⁴/₅, 287-90

C.A. 74 (1971) 72120

Adsorption and elution of C₁₉ and C₂₁ labelled steroids on Florisil in 20 x 2,5 cm columns were investigated.

See also :

72-626 Density gradient centrifugation studies on lymphocytic choriomeningitis and on viral ribonucleic acid.

72-609 Biosynthesis of the carbohydrate portion of immunoglobulin; radiochemical and chemical analysis of the carbohydrate moieties of two myeloma proteins purified from different subcellular fractions of plasma cells.

72-639 Modifications of RNA and protein synthesis Chinese hamster cells in vitro treated with actinomycin before irradiation.

72-640 Enzymatic conversion of tRNA precursor to 4-SRNA in vitro.

72-646 Chromatographic differences between lysyl-tRNA's from avian tumor virus BAI strain A and virus transformed cells.

72-663 Stable gaseous isotope separation and purification.

72-664 Stable gaseous isotope separation and purification.

72-724 Technetium-99m labelled compounds.

5 - ANALYSIS

5.0 - General

72-758

CORNEY P.L., HEATH D.F.

A simple way to estimating turnover rates from specific activity-time curves.

J. Appl. Physiol. 28 (1970) 5, 672-4

Bull. Signal. Sect. 360 31 (1971) 34989

72-759

EPRON D.H., HARRIS S.R.,
MANIAN A.A., GAUDETTE L.E.Radioassay of chlorpromazine
and its metabolites in plasma.Psychopharmacologia 19(1971) 3,
207-23C.A. 74 (1971) 97431Tritiated N-acetyl derivatives
of chlorpromazine, chlorproma-
zine sulfoxide and demethylated
analogs were formed from the
demethylated compounds and ¹⁴C-
labelled quaternary amines from
the tertiary amines by acetyl-
ation and methylation respecti-
vely.

72-760

HILS J.

Paper chromatographic detection
of antibodies using radioacti-
vely-labelled antigens.Ger. East 75,411C.A. 74 (1971) 123176

72-761

KOPENMAN S.G., O'MALLEY B.W.

Newer methods of avidin assay.

Methods enzymol. 18 (1970) Pt A
427-30C.A. 74 (1971) 121098Spectrophotometric radioliquid
binding and immunoassay methods
for avidin are reviewed.

72-762

LUBIN E., LAOK J., SHIMEONI A
et Al.Two stage scintiscanning in the
differential diagnosis of vas-
cularized and non vascularized
intrahepatic space occupying
lesions.Nucl. Med. 2 (1970) 1, 17-24

72-763

MEN'SHIKOV V.V., KUKES V.G.,

GNEUSHEV E.T., RUBIN M.P.

Determination of the rate of
secretion and concentration of
aldosterone in plasma using
aldosterone-1,2-³H₂.

Lab. Delo (1970) 9, 547-51

C.A. 74 (1971) 653Quantitative determination was
carried out using thin-layer
chromatography and a scintilla-
tion counter.

72-764

MIKOLAJKOW A.

Radioisotope methods for esti-
mation of protein loss into the
alimentary tract.Pol. Rev. Radiol. Nucl. Med.
(1970) 34, 241-4

Phys. Med. Biol. (1971) 527

Current isotope techniques used
in the diagnosis of protein
loss into the alimentary tract
are reviewed.

72-765

OLIVO J., SOUTHERN A.L.,
GORDON G.G., TOCHIMOTO S.Protein binding of testosterone
in plasma in disorders of thy-
roid function: effect of the-
rapy.J. Clin. Endocrinol. Metab. 31
(1970) 5, 539-45C.A. 74 (1971) 30835An equilibrium dialysis techni-
que involving the addition of
tracer amounts of tritiated
testosterone was used to deter-
mine the percentage binding of
testosterone in plasma.

72-766

PICOTTI F., BALABIDA L.

Microspectrophotometric evalua-
tion of DNA as a means of ana-
lysis of human leukocyte in vi-
tro proliferative kinetics.

Arch. Sci. Med. 126 (1969) 7,
395-8

Bull. Signal. Sect. 360, 31
(1970) 33993

The micro-spectrophotometric method was compared with the method based on the use of tritiated thymidine.

72-767

STONE B., NAKAMURA R.M.,
MISHELL D.R.Jr., THORNEYCROFT
I.H.

Modified technique for the assay of progesterone in blood using celite column chromatography.

Steroids 17 (1971) 3, 411-22

After ether extraction and separation of progesterone from more polar steroids by the use of celite column chromatography progesterone was measured by competitive labelled protein binding.

See also :

72-691 Radionuclidic imaging procedure in the diagnosis of cancer.

5.1 - DETERMINATION OF ACTIVITY

72-768

CHAKRAVARTI A., THANAS I J.W.

Liquid scintillation counting of carbon-14 and tritium labelled samples on filter paper.

Anal. Biochem. 40 (1971) 2,
484-7

C.A. 74 (1971) 121228

Radioactive samples on filter paper supports are inserted into the vial containing the counting medium and desintegrated by vigorous shaking.

72-769

DE TURCKHEIM M., ROBERT A.,
RIGAUDIERE N., MEYNIEL G.,

DELOST P.

Automatic analysis of iodine-127 labelled iodinated 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

C.A. 74 (1971) 121209

72-770

DIVIES C., DUPUY P., LEGLISE M.
Determination of date of manufacture of wines by radioactive carbon.

Compt. Rend. Hebd. S. Acad. Agric. France 55 (1969) 18,
1261-5

Food Sci. Techn. Abstr. (1971)
1 H 21

Measurement of radioactivity due to ^{14}C in wines cannot precisely indicate the date of manufacture but does show whether the wine was produced before or after 1959.

72-771

EDDY E.M., ITO S.

Fine structural and radioautographic observations on dense perinuclear cytoplasmic material in tadpole oocytes.

J. Cell Biol. 49 (1971) 1,
90-108

C.A. 74 (1971) 121991

The sites of incorporation of tritiated amino acids were radioautographically localized.

72-772

ERLENKEUSER H.

Predictable low enrichment of methane isotopes by Clusius-Dickel thermal-diffusion columns for use in radiocarbon dating technique.

Z. Naturforsch. 26a (1971) 8, 1365-70

N.S.A. 26 (1972) 4423

By means of the Clusius-Dickel thermal-diffusion column the range of the radiocarbon dating method may be extended by 20,000 years.

72-773

OGURA T., Tsubura E.,
YAMAMURA Y.

Localization of radioiodinated fibrinogen in invaded and metastasized tumor tissue of Walker carcinosarcoma.

Gann 61 (1970) 5, 443-9

C.A. 74 (1971) 21355

Micro- and macroautoradiography was used to localize radioiodinated fibrinogen.

72-774

ORTNER H.M., SCHREIBER B.E.,
SPITZY H.

Simple determination of the specific activities of thyroid hormones and their precursors in blood serum after administration of radioiodine.

Fresenius'Z Anal. Chem. 252
(1970) 4/5, 260-7

C.A. 74 (1971) 72116

72-775

PAUS P.N.

Liquid scintillation counting of RNA. Simple procedure for extraction from sucrose gradients.

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

C.A. 74 (1971) 20244

The method offers high efficiency even for ^3H counting.

72-776

ROBINSON A.D.

Ion chamber radioactivity measurement incorporating sample vaporization.

U.S. 3,489,903

C.A. 72 (1970) 73855

Radioactivity was measured by vaporization of a known volume of sample in an ion chamber.

72-777

STEEL G.G., HANES S.

The technique of labelled mitoses: Analyses by automatic curve fitting.

Cell Tissue Kinet. 4 (1971) 1, 93-105

Biological Abstr. 52 (1971) 30290

This improved method is a development of the method described by Barrett.

72-778

YU F.-L., FEIGELSON P.

Paper disk estimation of radioactive RNA. Presence and elimination of metabolically generated artifacts from labelled purine and pyrimidine precursors.

Anal. Biochem. 39 (1971) 2, 319-21

C.A. 74 (1971) 74681

True RNA radioactivity is the difference of counts from cold $\text{CCl}_3\text{CO}_2\text{H}$ precipitate material and the radioactivity remaining after hot TCA extraction.

See also:

72-531 Mass spectrometry of perdeuterated molecules of biological origin. Fatty acid esters from Scenedesmus obliquus.

72-643 Binding of ^3H -actinomycin to vitelline platelets of amphibian oocytes. High resolution autoradiographic investigation.

72-616 Turnover of proteins in axons and nerve endings.

72-622 The uptake of leucine- ^3H by choroid plexus cells in vitro as studied by electron-microscopic autoradiography.

72-644 Effects of varying concentrations of formocresol on RNA synthesis of connective tissues in sponge implants.

5.2 - APPARATUS

72-779

FIGGE K., PIATER H.,
OSSENBRUGGEN H.

Radio thin-layer chromatography of weak β -emitters.

Glas-u. Instrumenten-Techn. 14
(1970) 8, 900-15

C.A. 74 (1971) 37959

The properties of 2 commercial radio thin-layer chromatographs are discussed.

72-780

MOWBRAY J., OTTAWAY J.H.

The preparation of α -oxo acid derivatives suitable for specific-radioactivity determination.

Biochem. J. 120 (1970) 21,
171-5

Biological Abstr. 52 (1971)
46961

Optimum conditions for preparation, purification of the title compound are described.

72-781

PARVINEN M., NIEMI M.

Determination of tritium in microgram tissue samples: distribution of exogenous cholesterol- ^3H in the rat adrenal cortex.

J. Histochem. Cytochem. 19
(1971) 1, 46-50

C.A. 74 (1971) 61527

An internal sample metal cathode proportional counter for measurements of low ^3H activity in biological samples of μg size was designed.

72-782

SKURATNIK Ya. B., YAKUSHIN F.S.

Measurement of the activity of tritium in organic compounds by a scintillation method on the apparatus USS-1.

Med. Tekh. 4 (1970) 3, 13-8

C.A. 74 (1971) 8761

The USS-1 is a 1-channel β -spectrometer. POP 4, POPOP 0,1 and naphthalene 100g/l in dioxane-p-xylene EtOH was used.

72-783

WAGIEL E., SZYMANSKI J.

Measurements of the ^{14}C -tracer used in oil wells.

Nukleonika 14 (1969) 197-204

Nucl. Sci. Abstr. Poland 05
(1969) 862

The liquid scintillator consisted of PPO, POPOP mixture in toluene.

5.3 - DEGRADATION

72-784

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

Chemischer Informationsdienst
Organische Chemie (1971) 22-126

Rates of detritiation in $\text{CF}_3\text{CO}_2\text{H}$ at 70° were determined for bromo- and nitro-substituted 2-,3-, and 8-tritiofluoranthenes.

72-785

BUZYNSKI A.Z.

Difference in conformation of fibrinogen degradation products as revealed by hydrogen exchange and spectropolarimetry.

Biochim. Biophys. Acta 229
(1971) 3, 663-71

C.A. 74 (1971) 120,41

Conformation of fibrinogen degradation products was studied using H-²H and H-³H exchanges.

6 - MISCELLANEOUS

72-786

KREDETSER E.I., SVERDLOV L.M.

Calculation of inertia defects and vibrational-rotational interaction constants of hydrogen sulfide, hydrogen selenide, water molecules and their isotopic derivatives.

Zh. Strukt. Khim. 12 (1971) 1,
67-73

Chemischer Informationsdienst
Anorganische Chemie (1971) 19,
148

72-787

MAJOR P.C., ROBY C.G. Jr.

Computer analysis of raw radioisotope data derived from antibody-ligand equilibrium studies; quantitation of sites.

Comput. Biomed. Res. 3 (1970)
6, 575-85

C.A. 74 (1971) 123,14

The model is taken from the law of mass action equation for the equilibrium mixture.