

## 「第 7 章 Chemical Abstracts」練習問題

(1973 年以降の資料を使うことが望ましい)

回答は次のようなかたちで記載することが望ましい。

①	Index Guide: 1986 年 Nitrilotriacetic acid See Glycine, N,N-bis(carboxymethyl)- [139-13-9] (Index Guide の記載を写す)
②	Chemical Substance Index 132 巻: Glycine N,N-bis(carboxymethyl)- (nitrilotriacetic acid) [139-13-9] Trisodium salt [5064-31-3] composite tablet for deliming or disinfection of water in cooking or hygienic applications, P141612g (該当する索引を調べ, その見出しを記載する)
③	CA 132, P141612g, Tablet composition for deliming or disinfection of water reservoirs in cooking or hygienic applications. Waeschenbach, Guido; Wiedemann, Ralf; Carbonell, Enric; Endlein, Edgar; Gibis, Karl-Ludwig (Benckiser N.V., Neth.). Ger. Offen. DE 19834172 A1 20000203, 22 pp. (German). (前記文献の抄録を調べ, 書誌事項を記載する)

化学物質の問題については, Index Guide, Formula Index, Chemical Substance Index に記載されている CAS 登録番号を転記することが望ましい。

### 問題 1

自分の師事した先生または先輩の論文を一件調べなさい。

(Author Index → 本誌)

ここでは「野依良治」先生を例に取る。名前は姓が先に書かれる。Author Index (例では 110 巻) で Noyori, Ryoji を見ると, 始めに See Hayakawa, Yoshihiro;... などと記載されているが, これらはここに示された著者が第一著者となっている文献なので, その著者の項目を見よという意味である。その後, 長いダッシュで始まっているのが Noyori, Ryoji 先生が第一著者となっている文献である。

**Noyola, Adalberto** See Jimenez, Blanca

—; Capdeville, B.; Roques, H. L.

Anaerobic treatment of domestic sewage with a rotating-stationary fixed-film reactor, 101074x

**Noyori, Masaru** See Kubo, Nami

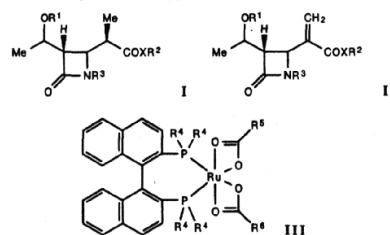
**Noyori, Ryoji** See Hayakawa, Yoshihiro; Kitamura, Masahito; Morita, Yasushi; Murata, Shizuaki; Ohkuma, Takeshi; Suzuki, Masaaki; Takaya, Hidemasa; Yamada, Nobuo

—; Kitamura, M.

Preparation of  $\beta$ -lactams by asymmetric hydrogenation in the presence of ruthenium catalysts, P 231338x

—; Suga, S.; Kawai, K.; Okada, S.; Kitamura, M. Enantioselective alkylation of carbonyl compounds. From stoichiometric to catalytic asymmetric induction, 231198b

110: 231338x Preparation of  $\beta$ -lactams by asymmetric hydrogenation in the presence of ruthenium catalysts. Noyori, Ryoji; Kitamura, Masahito (Sankyo Co., Ltd.) **Jpn. Kokai Tokkyo Koho JP 63,290,862** [88,290,862] (Cl. C07D205/08), 28 Nov 1988, Appl. 87/122,619, 21 May 1987; 8 pp. Title compds. I (R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> = H,



protecting group; X = O, S) are prepd. by asym. redn. of  $\beta$ -lactams II in the presence of asym. ruthenium compds. III (R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> = (substituted) aryl, alkyl, C<sub>3-7</sub> cycloalkyl). A mixt. of (3*S*,4*S*)-3-[(1-*R*)-1-*tert*-butyldimethylsilyloxyethyl]-4-(1-carboxyethylene)-azetidin-2-one and III (R<sup>4</sup> = Ph; R<sup>5</sup> = R<sup>6</sup> = Me) was autoclaved at 100 atm H and 26° to give 100%  $\alpha,\beta$ -mixt. of the 4-(1-carboxyethyl)azetidin-2-one analog in ratio of 13.3:86.7, resp.

## 問題 2

**Indomethacin** (抗炎症剤) の毒性 (toxicity, adverse effect など) に関する文献を一件調べなさい。

(Index Guide → Chemical Substance Index → 本誌)

1. Index Guide で Indomethacin を見ると次のように記述されている。

### **Indolyl Red**

See 1(3*H*)-Isobenzofuranone, 3,3-bis(1-ethyl-2-methyl-1*H*-indol-3-yl)- [22091-92-5]

### **Indomethacin**

See 1*H*-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- [53-86-1]

### **Indomethacin farnesil**

See 1*H*-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl-, 3,7,11-trimethyl-2,6,10-dodecatrienyl ester [85801-02-1]

2. Chemical Substance Index (例では 113 巻) で 1*H*-Indole-3-acetic acid の項を見ると、次のページのようにになっている。ここで、1*H*-Indole-3-acetic acid, anhydrides, 1*H*-Indole-3-acetic acid, compounds などの項は親の酸の誘導体である。下の方に ----, 1-acetyl- $\alpha$ -[acetyl... とあるところから、基本骨格の誘導体になる。ここを見ていくと、1*H*-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- [53-86-1] の項が見つかった。この場合はカッコ内に (indomethacin) と記載されている。

topical liq. pharmaceutical contg. soly. enhancer and, P 237854w  
topical pharmaceuticals contg. penetration enhancers and, P 103404r  
toxicity of  
gastroduodenal, in humans, 145040z  
to stomach, healing process evaluation by thymidine incorporation in, 72876q  
transdermal controlled delivery of, polymer adhesive matrixes for, 158525m  
transdermal delivery system for, P 138500w  
transdermal or topical pharmaceutical compn. contg. amine oxide and, P 29278j  
transport of, into skin stratum corneum, alkanols and urea effect on, 90892w  
ulcer healing delay by, omeprazole prevention of, inhibition of stomach acid secretion in, 165241u  
ulcerogenicity of, PGE<sub>2</sub> formation in relation to, 273t  
urinary tract infection therapy with, 91112d  
vasotocin-induced oviposition in hen inhibition by,

3. 1*H*-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- [53-86-1] の項には多くの文献が記載されている (次ページ)。毒性について調べるので、toxic の文献がないかを見ていくと、toxicity of の項に 2 件の文献が見つかった。

4. この文献の抄録が見つかった。

113: 145040z The effects of indomethacin on gastroduodenal morphology and mucosal pH gradient in the healthy human stomach. Shorrock, Christopher J.; Prescott, Richard J.; Rees, Wynne D. W. (Dep. Gastroenterol., Hope Hosp., Salford, UK M6 8HD). *Gastroenterology* 1990, 99(2), 334-9 (Eng). To define further the injury and the mechanisms of mucosal injury induced by indomethacin, the effect of 28-day continuous administration of oral indomethacin on gastroduodenal morphol., gastric histol., and the protective mucus-bicarbonate barrier overlying gastroduodenal mucosa in humans was studied. In the studies, indomethacin caused acute gastroduodenal damage in 100% cases, with maximal damage at 24 h of administration. With continued intake this damage resolves, although a minority (two study subjects) progressed to discrete ulceration. Biopsy specimens taken during the studies showed no significant changes in inflammatory or regenerative features, and thus failed to shed any light on this process of adaptation to damage. Mucosal pH gradient studies showed a significant increase in juxtamucosal pH at the time of maximal damage (24 h); this is thought to represent passive diffusion of alkali from damaged mucosa. In conclusion, mucosal adaptation to acute damage by indomethacin occurs in humans. The mechanisms through which the mucosa adapts in this intriguing way remain unknown.

of Me chloroazabicyclooctenecarboxylate, 172398d  
benzylation of, 6655r  
cyclocondensation of, with benzoic anhydride, 115125p  
oxidn. of, by peroxidase anionic isoenzyme of tomato, anion activation of, 93836s  
photochem. oxidn. of, 40386p  
mechanism of, 5484x  
photooxidative decarboxylation of, by pyrimidopteridine oxide, 58773x  
reaction of  
with benzoic anhydride, pyranindole deriv. from, 59633p  
in prepn. of antidepressant, P 172049r  
singlet oxygen interactions with, in photosensitization with laser radiation, phys. and reactive quenching in, 227171g  
**1H-Indole-3-acetic acid, anhydrides**  
**anhydride [41547-05-1]**  
acylation by, of Me chloroazabicyclooctenecarboxylate, 172398d  
with 2,2-dimethylpropanoic acid [125213-31-2], acylation by, of Me chloroazabicyclooctenecarboxylate, 172398d  
**1H-Indole-3-acetic acid [87-51-4], compounds conjugates**  
amides and esters, distribution of, in extraxylary region of *Pinus sylvestris*, during cycle of cambial activity and dormancy, 169019a  
axillary bud growth in bean stems inhibition by, 169083s  
of cotton flower buds and flowers, under water deficit conditions, boll abscission in relation to, 129479u  
formation of, in carrot tissues transformed by mutant and wild-type Ti plasmids, 169077t  
of mandarins, during fruit development, parthenocarpic ability in relation to, 94896y  
of oat, light wavelength effect on, 55954w  
of *Puccinia graminis* uredospores and infected wheat leaves, 75090q  
water stress effect on, in cotton leaves, leaf maturation in relation to, 169227s  
**dipotassium salt [128857-71-6], UV of, 96944m**  
**erbium(3+) salt, dihydrate [129884-75-9],** prepn. and XPS of, 183624a  
**lanthanum(3+) salt, dihydrate [129884-72-6],** 183624a  
**mixt. contg. [52683-45-1]**  
lignin and suberin formation response to, in peach bark wounds, susceptibility to *Leucostoma persoonii* in relation to, 226366n  
peanut gynophore growth regulation by, 149001k  
**mixt. with methyl 2-chloro-9-hydroxy-9H-fluorene-9-carboxylate [130492-28-3],** podding and yield of chickpea response to, 206619u  
**monopotassium salt [2338-19-4], UV of, 96944m**  
**neodymium(3+) salt, dihydrate [129884-73-7],** 183624a  
**samarium(3+) salt, dihydrate [129884-74-8],** 183624a  
**titanium complex [127432-83-1], 6500m**  
**titanium complex [127454-98-2], 6500m**  
**zirconium complex [127432-84-2], 6500m**  
**zirconium complex [127454-99-3], 6500m**  
**1H-Indole-3-acetic acid, esters**  
**2-[bis(2-chloroethyl)amino]ethyl ester [74105-36-5],** antitumor activity of, structure in relation to, 126055s  
**ethyl ester [778-82-5],** axillary bud growth in bean stems inhibition by, 169083s  
**methyl ester [1912-33-0]**  
photochem. oxidn. of, 40386p  
photochem. oxidn. of, mechanism of, 5484x  
**2-propenyl ester [128550-27-6],** prepn. and butoxycarbonylation of, 95011t  
**1H-Indole-3-acetic acid**  
—, 1-acetyl- $\alpha$ -[acetyl[[3-(trifluoromethyl)-phenyl]methyl]amino]-  
**ethyl ester [130361-35-2],** prepn. of, as

Consult 1990 Index Guide for  
Cross-references and Indexing Policies

—,  $\alpha$ -[[2-[4-(aminosulfonyl)phenyl]ethyl]=amino]-1-(phenylmethyl)- [130360-98-4]  
prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
—, 5-azido- [79473-10-2]  
auxin transport and location in corn shoots evaluation by, 129449j  
—, 1-benzoyl- $\alpha$ -[[[3-(trifluoromethyl)-phenyl]methyl]amino]-  
**ethyl ester [130361-33-0],** prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
**ethyl ester, monohydrochloride [130361-34-1],** prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
—,  $\alpha$ -[[[3,5-bis(trifluoromethyl)phenyl]=methyl]amino]-1-(phenylmethyl)- [130361-02-3]  
prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
—, 1-butyl- $\alpha$ -[[[3-(trifluoromethyl)-phenyl]methyl]amino]-  
**ethyl ester [130361-25-0],** prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
**ethyl ester, monohydrochloride [130361-52-3],** prepn. of, as antidiabetic, antiobesity, and antiatherosclerotic agent, P 211831m  
—, 4-chloro- [2519-61-1]  
of *Catharanthus* crown gall tissues, 37835d  
—, 1-(4-chlorobenzoyl)-5-hydroxy-2-methyl- [2504-32-7]  
formation of  
as indomethacin farnesil metabolite, 17423q  
as indomethacin farnesil metabolite, after single oral doses, 17421n  
as indomethacin farnesil metabolite after repeated oral administration, 17422p  
—, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- (indomethacin) [53-86-1]  
allergen-stimulated leukotriene E<sub>4</sub> and thromboxane A<sub>2</sub> release response to, in humans, 95980h  
analgesia from  
in arthritis model in rats, 224034d  
thalamus C fiber-evoked neuronal activity in relation to, 145025y  
angiotensin II-mediated renal vasoconstriction response to, 301a  
antiemetic activity of carbazole deriv. enhancement by, P 109339v  
anti-inflammatory analgesic creams contg., base comps. for, P 138544p  
antioxidant activity of, antiarthritic activity in relation to, 91086y  
antirheumatic effects of acetylaminophenylacetic acid and, stomach irritation in, 126224w  
antitumor activity of, in combination with interleukin-2 and lymphokine-activated killer cells, in Ehrlich ascites, 52246f  
arthritis therapy with, interleukin 6 of blood serum in relation to, 126208u  
arylamidase multiple forms of human inhibition by, kinetics of, 186974a  
binding and soly. of, in milk, formulation in relation to, 84722z  
binding of, to proteins of blood of humans and lab. animals, frontal HPLC detn. of, 125930m  
bioavailability of  
from capsules contg. different particle sizes, in humans, food effect on, 120694c  
from microenemas, 84718c  
from zinc complex in humans, 65154z  
blastocyst enzymes and glycogen and lipids response to, prostaglandins in, 204587h  
bradykinin stimulation of inositol trisphosphate and PGE<sub>2</sub> formation by fibroblast response to, 71860t

### 問題 3

$\text{SbF}_5$  が触媒 (catalysis, catalytic など) として作用することに関する文献を一件調べなさい。  
(Formula Index → Chemical Substance Index → 本誌)

1.  $\text{SbF}_5$  は Hill 方式で書くと  $\text{F}_5\text{Sb}$  なので Formula Index (例では 113 巻) でその項を調べると Antimony fluoride ( $\text{SbF}_5$ ) [7783-70-2] See *Chemical Substance Index* と記載されている。このように Formula Index では文献数の多い化合物については索引が省略されている。この場合は Formula Index はこの化合物の正式な CAS 索引名を調べるツールとして役だった。

2. Chemical Substance Index の Antimony fluoride ( $\text{SbF}_5$ ) [7783-70-2] を見る。触媒に関する文献なので catalyst の小見出しを見るといくつか文献が見つかった。

#### $\text{F}_5\text{S}$

##### $\text{F}_5\text{S}$

Sulfate(1-), pentafluoro- [31140-82-6], 141464t  
Sulfur(1+), pentafluoro- [19167-14-7], 87577s,  
138942s, 141464t, 222735j

Sulfur fluoride ( $\text{SF}_5$ ) [10546-01-7], 43467b

##### $\text{F}_5\text{Sb}$

Antimonate(2-), pentafluoro-  
diammonium, (SP-5-11)- [38640-84-5], 33454f

Antimony fluoride ( $\text{SbF}_5$ ) [7783-70-2]. See  
*Chemical Substance Index*

##### $\text{F}_5\text{Si}$

Silicate(1-), pentafluoro-  
(TB-5-11)- [52610-90-9], 138868x

#### Antimony europium sulfide ( $\text{Sb}_4\text{Eu}_3\text{S}_9$ )

[78402-67-2]

classification of, in homologous series, based on  
archetypal structures, 26928k

#### Antimony fluoride ( $\text{SbF}_5$ ) [7783-70-2]

132255y

aprotic solvent complexes, for soln. processing of  
ladder and rigid-chain polymers, P 213248a  
benzoquinone-tetramethylenecyclooctane copolymer  
doped with, elec. conductors from, P 182918n  
bis(chloromethylphenylsilyl)furan homopolymer  
doped with, elec. cond. of, 172864c  
carbocation formation in cryogenic matrix of,  
171250n

#### catalyst

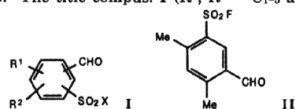
for formylation and sulfonylation of  
dialkylbenzenes, P 58688y  
for rearrangement of perfluoro(ethylindan),  
97149t

supported on non-zeolitic inorg. oxides, catalytic  
distn. with, for alkylation and oligomerization  
processes, P 194705d

catalyst contg., for fluorination of perchloroethylene,  
P 190733p

3. 抄録が見つかった。

113: 58688y Preparation of formyldialkylbenzenesulfonyl halides as intermediates for drugs, agrochemicals, and resins. Soma, Yoshiye; Iyoda, Atsushi; Sano, Hiroshi (Agency of Industrial Sciences and Technology) *Jpn. Kokai Tokkyo Koho JP 02 78,654* [90 78,654] (Cl. C07C309/86), 19 Mar 1990, Appl. 88/230,388, 13 Sep 1988; 5 pp. The title compds. I ( $\text{R}^1, \text{R}^2 = \text{C}_1\text{-s alkyl}$ ;  $\text{X} = \text{halo}$ ;



$\text{CHO}$  and sulfonyl halide are para to alkyl) were prepd. by reaction of dialkylbenzenes with  $\text{XSO}_3\text{H}$  ( $\text{X} = \text{halo}$ ) and  $\text{CO}$  in the presence of antimony halide. A mixt. of *m*-xylene  $\text{FSO}_3\text{H}$ ,  $\text{SbF}_5$ , and  $\text{CF}_3\text{CO}_2\text{H}$  under  $\text{CO}$  was stirred at  $25^\circ$  for 6 h to give 83% benzenesulfonyl fluoride II.

#### 問題 4

Alinamin に関する文献を一件調べなさい。

(Index Guide → Chemical Substance Index → 本誌)

1. Index Guide で Alinamin を調べると, See *Formamide, N-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-(propyldithio)-1-butenyl]-* [59-58-5] と記載されている。

2. そこで Chemical Substance Index (例では 113 巻) の Formamide の項を見る。Formamide そのものの文献が示された後、置換基誘導体がアルファベット順に並べられている。置換基の前の長いダッシュは Formamide が省略されていることを示している。

#### Alimezine

See 10H-Phenothiazine-10-propanamine, N,N,β-trimethyl- [84-96-8]

#### Alinamin

See *Formamide, N-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-(propyldithio)-1-butenyl]-* [59-58-5]

#### Alinamin F

See *Formamide, N-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-[(tetrahydro-2-furanyl)methyl]dithio]-1-butenyl]-* [804-30-8]

#### Formamide, compounds

**copper complex** [128138-63-6], prepn. and IR spectrum of, 164308j

**iron complex** [129033-86-9], formation and charge-transfer spectrum of, 125303j

**manganese complex** [129062-46-0], prepn. and crystal structure and magnetic susceptibility and heat of fusion of, 108031b

**nickel complex** [36026-35-4], ligand-field splitting energies of nickel solvate in, coordination power of solvent in relation to, 47514n

**propanoate** [129137-37-7], templates, oxygen permeability of polysulfone fibers spun from, increased free vol. in relation to, 99265b

#### Formamide [75-12-7], derivatives (general)

N-alkyl derivs., metab. of, by liver microsomes, 36034e

derivs., soldering flux contg., for clean joints, P 216520u

#### Formamide

—, N-[5-acetyl-3-cyano-4-(2-furanyl)-6-methyl-4H-pyran-2-yl]- [128998-33-4], 114997n

3. ずっと見ていくと、該当項目が見つかった。CAS 登録番号 [59-58-5] が一致することを確認する。

**cobalt complex** [130637-89-7], prepn. and

antigastritis activity of, P 224579k

—, N-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-(propyldithio)-1-butenyl]- (prosultiamine) [59-58-5]

condensation of, with baclofen deriv., P 6365w

reaction of, with inorg. acid, solvents in, P 6040m

**hydrochloride** [127545-52-2], P 6040m

—, N-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-[(tetrahydro-2-furanyl)methyl]dithio]-1-butenyl]- (fursultiamine) [804-30-8]

mercury of human mustache response to, 110597j

prepn. of, by reaction of thiol-form thiamin salt with

sulfurating agent prepd. from

tetrahydrofurfuryl mesylate and sodium

thiosulfate, P 131892s

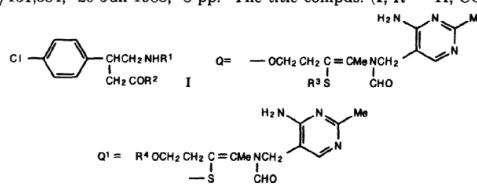
reaction of, with inorg. acid, solvents in, P 6040m

**hydrochloride** [10238-39-8], granular formulation

of, P 197975c

**monohydrochloride** [2105-43-3], P 6040m

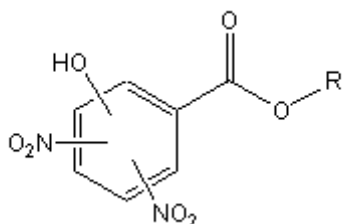
113: 6365w Preparation of baclofen conjugate with thiamin derivatives. Mazaki, Mitsuo; Kondo, Seiji; Takeda, Hiromitsu (Nippon Chemiphar Co., Ltd.) *Jpn. Kokai Tokkyo Koho JP* 01,319,466 [89,319,466] (Cl. C07D239/42), 25 Dec 1989, Appl. 88/151,534, 20 Jun 1988; 8 pp. The title compds. (I; R<sup>1</sup> = H, COR;



R = Q, Q<sup>1</sup>; R<sup>2</sup> = OH, R<sup>3</sup> = C<sub>2-7</sub> alkylcarbonyl, C<sub>7-10</sub> arylcarbonyl, C<sub>1-6</sub> alkylthio; R<sup>4</sup> = H, C<sub>2-7</sub> alkylcarbonyl, C<sub>7-10</sub> arylcarbonyl; provided that at least one of R<sup>1</sup> and R<sup>2</sup> contains R), which readily crosses the blood brain barrier and efficiently transports baclofen (muscle relaxant) into brain and have potent and prolonged physiol. activity, are prepd. Thus, acylation of baclofen with *tert*-Bu S-(4,6-dimethylpyrimidin-2-yl)thiolcarbonate in aq. Et<sub>3</sub>N gave 91% N-(*tert*-butoxycarbonyl)baclofen which was treated with ClCO<sub>2</sub>Et in THF contg. Et<sub>3</sub>N at ≤-10° followed by an ice-cooled aq. NaOH soln. of O-acetylthiamine-HCl to give, after standing 30 min at room temp., 26% O-acetyl-S-[4-(N-*tert*-butoxycarbonylamino)-3-(4-chlorophenyl)butanoyl]thiamine. Deprotection of the latter with 3N HCl in EtOAc gave 88% I.2HCl (R<sup>1</sup> = H, R<sup>2</sup> = Q<sup>1</sup>, R<sup>4</sup> = Ac) (II). When II was administered at 138.8 mg/kg in rats through a femoral vein, amts. of II transported into the brains were 84.6-203 μg/g vs. 2.22-3.76 μg/g for I.Na (R<sup>1</sup> = COQ, R<sup>2</sup> = OH, R<sup>3</sup> = iso-PrS).

## 問題 5

次の化合物に関する文献を一件調べなさい。



(OH と NO<sub>2</sub> はどこについていてもよい. R は水素ではない)

(Chemical Substance Index → 本誌)

1. この化合物は Benzoic acid に NO<sub>2</sub> が 2 個と OH が置換した酸のエステルである. したがって Benzoic acid に dinitro と hydroxy がついたものを Chemical Substance Index で探せばよい. CAS の命名法の規則では, 置換基は数を表す接頭辞 (di-, tri- など) を無視してアルファベット順に並べることになっているので, Benzoic acid, hydroxy-dinitro- を探す. 置換基はこのように, いつも基本骨格の後にカンマで区切られて示されている.

2. Chemical Substance Index (例では 107 巻) を見ると, まず Benzoic acid そのものの文献が並び, そのあとに置換基のついた化合物が並べられている. 順々に見ていくと 2-hydroxy-3,5-dinitro- [609-99-4] が見つかった. 置換基の前の長いダッシュは Benzoic acid が省略されていることを示している. エステルなどは親の酸の文献の終わった後に記載されている. ここでは methyl ester [22633-33-6] があつた.

### Benzoic acid, 4-hydroxy-,

with 2,2-dimethyl-1,3-propanediol, hexanedioic acid and 1,3-isobenzofurandione [108786-43-2], prepn. of crosslinkable liq.-cryst., as coating binders, 8949q  
with formaldehyde [28087-79-8], IR-sensitive photog. films contg., P 246637f  
with formaldehyde and 1,3,5-triazine-2,4,

107: 77224m Kinetics of hydrogen isotope exchange in molecule with strong intramolecular hydrogen bonds. Bureiko, S. F. Oktyabrskii, V. P. (Inst. Phys., State Univ., 198904 Leningrad USSR). *React. Kinet. Catal. Lett.* 1986, 31(1), 245-8 (Eng) Rate consts. and activation energies of H exchange between methanol and mols. with intramol. H bonds were measured. The rate-detcg. step is the disocn. of the H bond.

—, 2-hydroxy-3,6-dimethyl-4-(phenylmethoxy)-3-hydroxy-4-(methoxycarbonyl)-2,5-dimethylphenyl ester [111258-35-6], redn. of, 214846g  
—, 2-hydroxy-3,5-dinitro- [609-99-4] coordination of, with nickel(II), equil. and kinetics of, 121975h  
in detn. of reducing sugars in molasses, limitations of, 9203d  
electronic spectroscopic studies on intra- and intermol. hydrogen bonding in, 144069e  
in ytterbium detn. by flame at. absorption spectrometry, signal enhancement in relation to, 51015u  
zinc complexes, formation const. and thermodyn. of coordination of, 224061m  
compd.  
with N'-[[4-(dimethylamino)phenyl]=methylene]-N,N-dimethyl-1,4-benzenediamine (1:1) [110467-02-2], IR spectrum of, 153817z  
with N,N-dimethyl-4-[(phenylimino)=methyl]benzenamine (1:1) [110467-00-0], IR spectrum of, 153817z  
with N,N-dimethyl-N'-(phenylmethylene)-1,4-benzenediamine (1:1) [110467-01-1], IR spectrum of, 153817z  
with N-(phenylmethylene)benzenamine (1:1) [87775-94-8], IR spectrum of, 153817z  
methyl ester [22633-33-6], hydrogen exchange between methanol and, kinetics of, 77224m  
[(5-nitro-2-furanyl)methylene]hydrazide (nifursol) [16915-70-1], hyperprolactinemia from, in newborn, maternal administration during lactation in relation to, 126890m

3. 文献の抄録が見つかった.

## 問題 6

鯨の肉に関する文献を一件調べなさい。

(Index Guide → General Subject Index → 本誌)

1. Index Guide で Whale を見ると meat----see *Meat*, whale とあり、肉については Meat の項を見ることがわかる。

2. General Subject Index (例では 113 巻) で Meat の項を見るとさまざまな文献が並んでいる。小見出しの whale の項では 2 件の文献が見つかった。

### WH 1500

See *Benzenediazonium, 2,5-diethoxy-4-[(4-methylphenyl)thio]-, (T-4)-tetrachlorozincate(2-)* (2:1) [38656-51-8]

### Whale

Studies of whales as a group are indexed at this heading. More specific studies are indexed at the genus-species names

meat—see *Meat*, whale

### Whalebone

### Wharton reaction

See *Ring cleavage*, Wharton

### Meat

Meat of mammals and fowls is indexed at this heading. For meat of other animals see such headings as *Crabmeat*, *Fish*, *Shellfish*  
actomyosins extractability and electrophoresis and equil. dialysis behavior of,  $\gamma$ -irradn. effect on, irradn. identification in relation to, 190006d  
additives for, toxicol. and safety of, R 130777w  
adhesives contg. konnyaku powder and alginic acids for adhesion of, with konjak mannan sol, P 151115u  
aflatoxins detn. in cured, by ELISA, 130798d

water buffalo, antigens of, 76770y

### whale

ascorbic and erythorbic acids detn. in, by HPLC, 22302d  
identification of, ESR spectroscopic method for, 113950e

*Yersinia enterocolitica* detn. in, by hybridization assay, nucleic acid probes for, P 37394j

113: 22302d Determination of total L-ascorbic acid and erythorbic acid in foods. Ogata, Kuniaki; Kimura, Tomoko; Hosoya, Emiko; Sato, Takao (Yamagataken Eisei Kenkyusho, Yamagata, Japan). *Yamagata-ken Eisei Kenkyushoho* 1989, 22, 27-31 (Japan). HPLC with a Finpak SIL-5 column was used to det. L-ascorbic acid (I) and erythorbic acid (II) in food products. I and II were reacted with hydrazine before HPLC anal. The detector wavelength was 495 nm. The mobile phase contained hexane-EtOAc-HOAc-propanol (4:4:0.1:0.1). The recovery rates of I and II were 95-103 and 97-102%, resp. The contents of I and II in whale meat, fruit juice (10%)-supplemented soda, sausage, ham, and wiener sausage are tabulated.

## 問題 7

廃水のオゾン処理についての文献を一件調べなさい。

(Index Guide → General Subject Index → 本誌)

1. Index Guide で Ozone, uses and miscellaneous の項を見ると, in water and wastewater treatment, see *Wastewater treatment* となっているので, 廃水処理については *Wastewater treatment* をみればよいことがわかる。

2. General Subject Index (例では 113 巻) を見ると, *Wastewater treatment* の項は大変文献の数が多い。そこで小見出しをたどっていくと *ozonization* が見つかった。

### Ozolinone

See *Acetic acid, [3-methyl-4-oxo-5-(1-piperidinyl)-2-thiazolidinylidene]-, (Z)-* [56784-39-5]

### Ozone

ion ( $O_3^{1-}$ )—see *Ozonide* [12596-80-4]

### Ozone, preparation

app. for—see also *Ozonizers*

### Ozone, reactions

degrdn. by, agents for prevention of—see

*Antiozonants*

ozonization by—see *Ozonization*

### Ozone, uses and miscellaneous

in water and wastewater treatment

see

*Wastewater treatment*

*ozonization*

*Water purification*

*ozonization*

### Ozonide [12596-80-4]

Studies of the ion  $O_3^{1-}$  only are indexed at this heading  
102848b

### Wastewater treatment

#### absorption

copper removal in, calcium alginate in, 158003q

dye removal in, absorbent for, P 137993x

on ion exchange columns, for scale inhibitor

recycling, P 84594j

phenols removal by, aminoaldehyde polymer gels

for, P 177672y

pollutant, column packings for, R 137639m

of acetonitrile-contg. HPLC effluent, bacteria for, P 102848b

### Wastewater treatment

#### oxidn.

wet, neutralization and, of org. effluents,  
phosphorus removal in, P 84290g

wet air for, of organophosphorus pesticide  
manufg. effluent, prior to activated sludge  
treatment, 137893q

#### oxidn. ditch

denitrification and pptn. with ferrous sulfate in  
conjunction with, nitrogen and phosphorus  
removal by, 64618a

intermittent aeration in, and modeling thereof,  
45688y

intermittently aerated, nitrogen removal in,  
64611j

mixed liquor suspended solids in, model of,  
11528f

nitrogen removal in, optimization of, 64610h  
operation of, by alternate aeration and agitation,  
app. for, P 84273d

sludge age in, sludge pathogen redn. response to,  
120234c

#### oxygen-enrichment membranes in,

polysulfone-supported polytetramethyldisi-  
loxane, performance of, plasma polymn.  
conditions effect on, 116631n

#### ozonization

adsorption on activated carbon in conjunction  
with, azo and anthraquinone dye removal by,  
28702f

agar as growth media for recovery of *Escherichia*  
*coli* after, 55313m

app. for, design of, P 174978s

3. 文献の抄録が見つかった。

113: 28702f **Dye removal from water by ozonation with adsorption on carbon.** Sid'ko, R. Ya.; Kerzhner, B. K.; Goncharuk, V. V. (Inst. Kolloidn. Khim. Khim. Vody, Kiev, USSR). *Khim. Tekhnol. Vody* 1989, 11(10), 902-5 (Russ). Decolorization of anthraquinone- and 220 dye-contg. (1g/L) wastewaters by ozonation (23-27 mg  $O_3$ /L) followed by batch adsorption on granular activated C (0.25-0.5 mm) revealed the dependence of decolorization effectiveness on pH. The adsorption was ineffective in the removal of 220 dye ozonation products if the ozonation was done at alk. pH. Adsorption on activated C (~1 kg/m<sup>3</sup>) gave an addnl. 40-60% redn. in COD if the ozonation was done at neutral or acidic pH levels.





## 問題 8

Sony Corp. 社の特許を一件調べなさい。  
(Author Index → 本誌)

Author Index (ここでは 113 巻) を調べると Sony Corp. が出ている。文献の番号に P がついているのが特許である。

**Sonneaux, Etienne** See Fastrez, Jacques; Janus, Stephan  
**Sony Corp.** See Ajinomoto Co., Inc.; Chiyoda Chemical Engineering and Construction Co., Ltd.  
Electrophotographic process using molten developer, P 14775v  
Selective heteroepitaxy of gallium arsenide on silicon, P 15330h  
Manufacture of semiconductor device, P 16180w  
Manufacturing of semiconductor device, P 16194d  
Manufacture of MIS transistors by using ion implantation, P 16229u  
Etchant gas and etching of high-melting-point metal by using the gas, P 16243u  
Manganese gallium indium alloy-type hard magnetic thin film, P 16731b  
Superlattice magneto-optical recording media, P 32040f  
Manufacture of solid-state image sensor, P 32097e  
Manufacture of semiconductor device, P 33203y

113: 14775v Electrophotographic process using molten developer. Watanabe, Haruo; Ohyama, Masami; Yasuda, Akio; Kawasumi, Koichi (Sony Corp.) **Eur. Pat. Appl. EP 348,844** (Cl. G03G13/06), 03 Jan 1990, JP Appl. 88/156,848, 27 Jun 1988; 28 pp. Electrophotog. processes are described which use a molten developer in which the colorant is dispersed in an elec. insulating org. material. The developer is superior in ease of handling and capable of producing stable images at all times. An electrostatic latent image is wet developed by the developer. For recording and preserving the developed image, it is transferred to a transfer substrate. The developed image is transferred by contact of a photoconductor with the transfer substrate, or by peeling a film from a photoconductor.

会社名で調べる場合、次の注意が必要である。

(1) 会社名は合併・吸収やその他の理由で時代とともに変化している。Chemical Abstracts には、文献発表時の名前で収録されている。

(2) 人名から取った会社名に付いては、過去においては姓を先にして索引することになっていた。しかし 1967 年以降は正式の会社名をそのままの形で索引するようになった。

例:

1966 年まで: DuPont, E. I., de Nemours and Co.  
1967 年以降: E. I. DuPont de Nemours and Co.

(3) 日本の会社名に付いては、なるべく正式の英文社名を使用するようにしているが、著者が違う記述法を使った場合、必ずしも統一されていないことがある。

例:

Sumitomo Chemical Co.  
Sumitomo Kagaku Kogyo K. K.