CZECHOSLOVAKIA/Human and Animal Physiology. Blood. T

Abs Jour: Ref Zhur-Biol., No 8, 36262.

Author : Suchan, M., Vodrazka, Z., Praus, R.
Inst :
Title : Photo-Oxidation of the Blood Proteins. V. The Effect of Photo-Oxidation on Proteins Antigenicity.

Orig Pub: Chem. listy, 1955, 49, No 10, 1573-1574.

Abstract: No abstract.

Card : 1/1

USSR / Microbiology - General Microbiology. F

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38363.

Author : Praus, R., Dyr, I.
Inst : Not given.
Title : Biosynthesis of Carotenoids in Rhodotorula Gracilis Yeasts. IV. Formation of Carotenoids from Different Carbohydrate Sources.

Orig Pub: Sb. chekhosl. khim. rabot, 1956, 21, No 3, 761-764.

Abstract: No abstract.

Card 1/1 62

PIONE, M.; [illegible], J.; [illegible], J.

"Effect of some factors on the photodynamic effect of the micro-organisms Sacharomyces cerevisiae and Escherichia coil sensitized with methylene blue."

p.727 (Vol. 52, ~~Apr~~ no. 4, Apr. 1958, Praha, Czechoslovakia)

Monthly Index of East European Accession (MEEI) LC, Vol. 7, No. 8, August 1958

PRAUS, ROMAN

Biosynthesis of carotenoids in Rhodotorula gracilis. III. Effect of nitrogen source, pH, and nitrogen-carbon ratio in the substrate upon the formation of carotenoids. Josef Dyr and Roman Praus (Vysoká škola chem. technol., Prague). *Chem. Listy* 49, 1699-702(1955); cf. *C.A.* 47, 2257*e*.—The presence of NH_4NO_3 in the medium gave the best effect on the formation of carotenoids in *R. gracilis*. Glycine, valine, and leucine showed no effect. The optimum ratio of N:C was 1:40, pH 6.8-6.9. IV. Formation of carotenoids from various carbon sources. Roman Praus and Josef Dyr. *Ibid.* 1703-5.—Glucose, fructose, sucrose, and xylose in the substrate gave the highest yields of carotenoids. The formation of carotenoids was stimulated by EtOH, $C_3H_5(OH)_3$, and Na salts of malic and citric acids.

M. Hudlický

OBENBERGER, J.; PRAUS, R.

Immunological reactivity of the cornea. IV. Binding of radioactive iodine-labelled antibodies to homologous antigen injected intracorneally. Cesk. oftal. 20 no.5:343-351 S '64.

Changes in the content and composition of proteins in rabbit aqueous humor following bilateral repeated specimen removal. Ibid.:333-336

1. Laborator fyziologie a patologie zrakoveho analyzatoru Ceskoslovenske akademie ved v Praze, (vedouci akademik J. Kurz).

VOTOCKOVA, J.; PRAUS, R.; SULCOVA, H.; STERBOVA, V.; BRETTSCHNEIDER, I.

Studies on remote nutrition of the rabbit cornea after occluding the arteria temporalis and arteria nasalis iridis. Cesk. oftal. 22 no.1:28-32 Ja ' 66.

1. II. ocni klinika fakulty vseobecneho lekarstvi Karlovy University v Praze a Laborator fyziologie a patologie zrakoveho analyzatoru Ceskoslovenskej akademie vied v Praze.

VOTOCKOVA, J.; PRAUS, R.; HVEZDOVA, H.; STERBOVA, V.; BRETTSCHNEIDER, I.

The significance of the arteriae temporalis and nasalis iridis for the nourishment of the cornea. Cesk. oftal. 21 no.4:312-317 Jl '65.

1. II. ocni klinika fakulty vseobecneho lekarstvi Karlovy University v Praze (prednosta akademik J. Kurz) a Laborator fyziologie a patologie zrakoveho analyzaroru Ceskoslovenskej akademii ved v Praze (vedouci akademik J. Kurz).

PRAUS, R.; BRETTSCHNEIDER, I.; HVEZDOVA, H.; STERBOVA, V.

The effect of lathyrogens on the cornea. The effect of beta-aminopropionitrile on the sulfation of acid mucopolysaccharides of the beef cornea in vitro. Cesk. oftal. 21 no.3:244-248 My '65.

1. Laborator fyziologie a patologie zrakoveho analyzatoru Ceskoslovenskej akademie ved v Praze (vedouci: akademik J.Kurz).

PRAUS, R.

Mucopolysaccharides of the cornea. Cesk. oftal. 21 no.2:125-137 Mr'65.

1. Laborator fyziologie a patologie zrakoveho analyzatoru Ceskolovenskej akademie ved v Praze (vedouci: akademik J. Kurz).

OBENBERGER, J.; PRAUS, R.

The effect of hydroxydione on the connective tissue in vitro.
Cesk. oftal. 21 no.3:249-251 My '65

1. Laborator fyziologie a patologie zrakoveho analyzatoru Ceskoslovenskej akademie ved v Praze (Vedouci: akademik J. Kurz).

SZABO, Gyorgy; BERTOK, Lorantne, technikai segedletevel;
PRAUSE, Agnes, technikai segedletevel.

The effect of norepinephrine on cerebral circulation and cerebral metabolism in ischemic shock. Magy. sebesz. 16 no. 4:253-258 Ag '63.

1. Az Prszagos Traumatologiai Intezet kozelmenye (igazgato: Szanto Gyorgy dr.)
(BRAIN) (SHOCK) (CEREABRAL ISCHEMIA, TRANSIENT)
(TISSUE METABOLISM) (BLOOD CIRCULATION)
(NOREPINEPHRINE)

PRAVADIN, L. F.

"The next tasks to be performed by forest selection in accordance with various natural conditions".

report presented at a Joint Session of the Biological Dept. of AN USSR and Biological and Medical Depts. AN Gruziya SSR, Tbilisi, 28 Sept - 3 Oct 1957. Vestnik Akad. Nauk SSSR, 1958, Vol 28, No. 1, pp. 121-127. (author Dzidzishvili, N. N.)

PRAVAMEC, Ladislav, inz.; DRABEK, Oldrich, inz.

Relay controller RRI. Automatizace 5 no.3:79 Mr '62.

1. Vyzkumny a vyvojovy zavod, narodni podnik Tesla, Pardubice, zavod Opocinek.

BIRZAN, Romanel, ing. (Cluj); DUMITRU, Acu (Hasaud); SANDULACHE, G., prof. (Negresti Iasi); SAVULESCU, Benone (Buzau); IONESCU-TIU, G.; PIRSAN, Liviu; PRAVAT, V.V. (Iasi); SACTER, O.; POPA, Eugen (Iasi); ZAGIRESCU, Tudor; VOICULESCU, Dan (Bucuresti); BEJANCU, Aurel; BARAS, Robert (Botosani); IARCHY, Tatiana, profesoara (Bucuresti); HADIRCA, I. (Braaza); JOMA, S. Boris (Babadag); ROMAN, T.; COSTACHESCU, C.V. (Constanta)

Proposed problems. Gaz mat B 15 no.2:80-85 F '64.

KURDYUMOV, O.I., inzh.; CHOPOROVA, R.I.; Prinimali uchastiye: AZRILYANT, Ye.A.; BOGANSKIY, G.I.; SMIRNOV, L.F.; PRAVDA, A.I.; LIVENTSEV, A.V.

Design and use of vibration-proof foundations for forging hammers. [Nauch. trudy] ENIKMASha 11:63-77 '65. (MIRA 18:6)

S/274/63/000/001/003/020
D469/D308

AUTHOR: Pravda, Bohuslav

TITLE: A conducting matched isolator for coaxial lines

PERIODICAL: Referativnyy zhurnal, Radiotekhnika i elektrosvyaz', no. 1, 1963, 40, abstract 1A251 P (Czech. pat., cl. 21a^4, 73, no. 100681, Aug. 15, 1961)

TEXT: When the external conductor of a coaxial line is to be terminated by a resistance, it is recommended that a thin spiral tape made of a conducting material, placed in a trolitul seal, is used for the internal conductor (instead of the usual $\lambda/4$ metallic isolator). The spiral ends are soldered tangentially to the coaxial line. Such a resistance introduces no reflection in the band from several hundred to several thousand mc/s.
[Abstracter's note: Complete translation]

Card 1/1

HORNAK, Thomas, inz.; PRAVDA, Bohuslav, inz.

Square-wave generator with 6.10^{-9} rise-time. Slaboproudy obzor 24 no.1:25-27 Ja '63.

1. Vyzkumny ustav matematickych stroju, Praha (for Hornak).
2. Aritma, n.p., Praha (for Pravda).

Veterinary Medicine

CZECHOSLOVAKIA

HOJOVCOVA, M.; PRAVDA, D.; College of Agriculture, Veterinary Faculty, 2nd Internal Clinic (VSZ, Veterinarni Fakulta, II. Interni Klinika), Brno; College of Agriculture, Faculty of Agronomy, Department of Veterinary Sciences (VSZ, Agronomicka Fakulta, Katedra Veterinarnich Disciplin), Brno.

"Study of Blood Proteins and of the Red Blood Component in Undernourished Cattle in the Course of Pregnancy and Shortly After Parturition."

Prague, Veterinarni Medicina, Vol 13, No 2, Feb 67, pp 93 - 99

Abstract [Authors' English summary modified]: In 23 pregnant and 7 control cows' blood proteins, hemoglobin content, amount of red blood corpuscles and body weight were investigated from the 6th month of gravidity to 1 month after parturition. The animals were undernourished and suffered from lack of litter. Hemoglobin content and red blood corpuscles decreased during the period of investigation both in the pregnant cows and in the controls. It is assumed that when low hemoglobin content and low amounts of red blood corpuscles are found in cattle, it may be concluded that rearing took place under undesirable conditions. 6 Figures, 10 West-

PRAVDA, Yan [Pravda, Jan] (Chekhoslovakiya)

Production of relief maps in Czechoslovakia. Geod. i kart. no.12: 53-59 D '64. (MIRA 18:2)

PRAVDA, Jan, inz.

Shaded terrain and its reproduction in Soviet Union. Geod kart obzor 6 no.11:207-209 N '60.

1. KRU v Bratislave (t.c. Modre-Harmonia).

PRAVADA, O.

"Olygodynamic Effect of Mercury on Certain Fresh-Water Microorganisms. I.", P. 275, (VESTNIK, Vol. 17, No. 4, 1953, Praha, Czech.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 3, Mar 1955, Uncl.

PRAVDA, OLDRICH

"Systematic zoology (Chordata): a university textbook."

Praha, Czechoslovakia, Statni pedagogicke nakl., 1957, 259 p.

Monthly list of East Europe Accessions (EEAI), LC, Vol. 8, No. 6, Sept 59
Unclas

PRAVCHANSKI, N.

"Scientific-technic l cooperation of Bulgaria with the Soviet Union in the development of heavy industry", P. 1.,(TESHKA PROMISHLENOST, Vol. 3, No. 6, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

PRAVCHANSKI, N.

"Rationalizer Stefan Machev and his complex brigade", P. 57., TESHKA PROMISHLENOST, Vol. 3, No. 5, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol.4, No. 6, June 1955, Uncl.

PRAVCHANSKI, M.

"Italy under the pressure of monopolies", P. 60., (TESHKA PROMISHLENOST, Vol. 3, No. 5, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

DATA

On development of Soviet machine-tool production. Tr. from the Russian.
P. 22. MUSZAKI ALET. Budapest Vol. 9, No. 19, Oct. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress
Vol. 5, No. 6, June 1956

TITLE:

On tasks for technologists. Tr. from the Russian, p. 2 MUSZAKI ELET. (Muszaki es Termeszettudomanyos Egyesuletek Szovetsege) Budapest Vol. 9 No. 12, Dec. 1954 (Magyar technika)

SOURCE: East European Accessions List (EEAL). Library of Congress Vol. 5, No. 6, June 1956

45697

Z/039/63/024/001/004/006
E192/5382

9,3280

AUTHORS: Horňák, Tomáš and Pravda, Bohuslav, Engineers

TITLE: Rectangular pulse-generator with a rise time of 6×10^{-9} s

PERIODICAL: Slaboproudý obzor, v. 24, no. 1, 1963, 25 - 27

TEXT: The circuit diagram of the generator is shown in Fig.1. The instrument is based on known standard circuits, whereby the output signal is produced by successive amplification and slicing of the wave-form generated by an astable symmetrical multivibrator. The multivibrator is based on the second tube (see the figure) and its frequency can be varied from 60 - 400 kc/s by changing the voltage applied to the RC timing circuits. The tube preceding the multivibrator is used to generate synchronisation or triggering pulses of both polarities. The multivibrator is followed by a double triode E_3 whose grids are directly connected to one of grids of the multivibrator. The signal at the anode of E_3 is amplified. The next tube, E_4, is coupled to E_3 by a RC network. The next stage consists of tubes E_5 and E_6 connected in parallel which, together with the output stage E_7, form a

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Rectangular pulse-generator Z/039/63/024/001/004/006
E192/E382

bilateral limiter. The cathodes of E_5 and E_6 are connected together and joined to the cathode of E_7. No AC signal appears at the grid of E_7. The tubes E_5 and E_6 are cut off during the negative half-cycle at the anode of E_4. The tube E_7 is fully open during this interval. The anode of E_7 is taken directly to the output socket and the load. The amplitude of the output pulses is dependent on the wave impedance of the cable used in the anode load and amounts to 5 V across 70 Ω and 10 V for a cable of 150 Ω. There are 5 figures.

ASSOCIATIONS: Výzkumný ústav matematických strojů, Praha (Research Institute of Mathematical Machines, Prague)
Aritma, n.p., Praha (Aritma State Factory, Prague)

SUBMITTED: August 2, 1962

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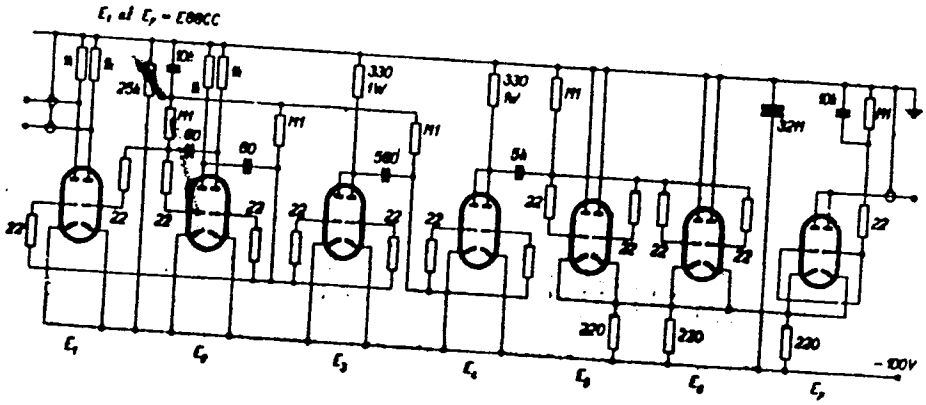
Rectangular pulse-generator Z/039/63/024/001/004/006
E192/E382

Fig. 1:



Card 3/3

PRAVDA, Josef

What are the tasks before us? Geol pruzkum 6 no. 3:65-68 Mr '64.

1. President of the Central Geological Office, Prague.

[illegible], S.

"Development of the carp fry in the earliest stages.", p. 99, (SBORNIK, Vol. 26, #1/2, Feb 1953, Czechoslovakia)

SO: Monthly List of East European Accessions, Vol. 2, #8, Library of Congress, August 1953, Uncl.

PRAVDA, Oldrich; SPATNY, Karel

Use of association experiments as method of allowing observation of loading of central nervous processes. Cas. lek. cesk. 96 no. 24-25:765-771 21 June 57.

1. Vyssi pedagogicka skola v C. Budejovicich (dekan doc. Dr. B. Jilek), katedra biologie Detske oddeleni KUNZ v Ces. Budejovicich (primar Dr. L. Sabata). O. P., C. Budejovice, Jeronymova 12. K. S., Ceske Budejovice, Ul. U tri lvu 461.
(CENTRAL NERVOUS SYSTEM, physiol.
physiol. overload determ. by assoc. exper. (Cz))

PRAVDA, [illegible]

[illegible] patent law affecting ownership and its significance. Gnez from 14 no.[illegible] 49[illegible] 6 '64.

PRAVDA, Stanislav

High intensity magnetic separators 2 MSM 5 and MSB 6. Rudy 10 no. 4: 115-120. Ap '62

1. Ustav pro vyzkum rud, Praha.

FRAVDA, Stanislav

Suggestion of unified symbols for marking the dressing processes. Rudy 10 no. 4:134-137. Ap '62

1. Ustav pro vyzkum rud, Praha.

ZASLAVSKIY, A.S.; PRAVDA, Ye.I.

Pasteurization of grape juice in a pasteurizer with continuous action. Kons.i ov.prom. 17 no.9:10-12 S '62. (MIRA 15:8)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.

(Grape juice) (Pasteurizers)

YEROFEYEV, A.A.; PRAVDA, Ye.I.; LOMAKIN, V.K.

Automation of the cooking of preserves. Trudy MNIIPP 2:109-113 '62. (MIRA 16:4)

(Moldavia—Canning and preserving) (Automation)

PRAVDA, Ye.I., starshiy nauchnyy sotrudnik.

Mechanized extraction of grape juice in SKO 83-3 3-liter bottles. Ref.nauch.rab.VNIIKP no.2:57-61 '54. (MLRA 9:4)
(Grapes--Preservation) (Fruit juices)

PRAVDA, Ye. I.

POROSHIN, K.M., kandidat tekhnicheskikh nauk; PRAVDA, Ye.I., starshiy nauchnyy sotrudnik; PETKEVICH, V.P., starshiy nauchnyy sotrudnik.

Increase the production of tomato products at canning factories. Trudy VNIIKOP no.6:3-13 '56. (10:5)
(Tomatoes) (Canning industry)

POROSHIN, K.M., kandidat tekhnicheskikh nauk; PETKEVICH, V.P., starshiy nauchnyy sotrudnik; PRAVDA, Ye.I., starshiy nauchnyy sotrudnik.

Production line for tomato paste. Trudy VNIIKOP no.6:14-32 '56. (MLRA 10:5)

(Canning and preserving--Apparatus and supplies)

PRAVDA, Ye.I.

Equipment for production of tomato paste. Kons. i ov. prom. 13 no.3:10-12 Mr '58. (MIRA 11:4)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.
(Tomato products)

LOMAKIN, V.K.; PRAVDA, Ye.I., kand.ekonom.nauk

Improved automatic control circuit for cooking fruit preserves in vacuum apparatus. Trudy MNIIPP 3:92-98 '63. (MIRA 18:1)

PRAVDA, Ye.I., kand.ekonom.nauk; SHABALINA, N.S.

Analyzing the performance of the evaporating apparatus developed by the All-Union Scientific Research Institute of the Canning Industry in the cooking of fruit preserves. Trudy MNIIPP 3:99-102 '63. (MIRA 18:1)

PRAVDA, Ye.I.; LOMAKIN, V.K.

Automatic evaporation plant for the cooking of fruit preserves. Kons. i ov. prom. 17 no.8:3-5 Ag '63. (MIRA 17:1)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.

PRAVDA, Ye.I.; CHMILENKO, N.M.

Problems of the mechanization of jam production. Kons. i ov. prom. 16 no.7:12-15 Jl '61. (MIRA 14:8)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.
(Moldavia--Canning industry--Equipment and supplies)
(Jam)

CHMILENKO, N.M.; PRAVDA, Ye.I.

Cooking of apricot jam in vacuum apparatus. Kons.i ov.prom. 16 no.5:6-8 My '61. (MIRA 14:5)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.
(Moldavia--Cookery (Fruit))

PRAVDA, Ye.I.

Use of vacuum evaporating equipment for cooking jam. Kons.i ov.prom. 16 no.4:4-6 Ap '61. (MIRA 14:3)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.

(Jam)

PRAVDA, Ye.I.

Using the VN-60 vacuum apparatus in the manufacture of tomato products. Kons.i ov.prom. 15 no.7:6-8 Jl '60. (MIRA 13:6)

(Tomatoes)
(Canning and preserving--Equipment and supplies)

PRAVDA, Ye.I.; ORLOVA, A.P.; RUDNEV, N.V.

Production of the grape vacuum must at the canneries in Moldavia. Kons.i ov.prom. 15 no.1:4-9 Ja '60. (MIRA 13:5)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti (for Pravda). 2. Gosudarstvennyy nauchno-tekhnicheskiy komitet pri Sovete Ministrov Moldavskoy SSR (for Orlova, Rudnev).
(Moldavia--Must)

PRAVDA ZDENEK

CZECH

Amino acids and peptides. XIII. Synthesis of L-proline from L-glutamic acid. Zdeněk Pravda and Josef Rudinger (Czech. akad. věd, Prague). Chem. Listy 48, 1663-9(1954); Collection Czechoslov. Chem. Communs. 20, 1-8(1955)(in English); cf. C.A. 49, 3126b.—Treating L-TsN.CO.(CH$_2$)$_3$.CHCOCl (I) (Ts = p-MeC$_6$H$_4$SO$_2$) with NH$_3$ gave L-TsN.CO.(CH$_2$)$_3$.CHCONH$_2$ (II). L-TsN.CO.(CH$_2$)$_3$.CHCONHPh (IIa) was prepd. from I. Both II and IIa were reduced by LiAlH$_4$ or, in better yields, with LiBH$_4$ to TsNHCH(CONH$_2$)(CH$_2$)$_3$OH (III) and L-TsNHCH(CONHPh)(CH$_2$)$_3$OH (IIIa), resp. Heating IIIa with TsCl and K$_2$CO$_3$ gave L-TsN.(CH$_2$)$_3$.CHCONHPh (IVa). Similar treatment of III failed to give L-TsN.(CH$_2$)$_3$.CHCONH$_2$ (IV). To prep. IV, III had to be transformed to L-TsNHCH(CONH$_2$)(CH$_2$)$_3$Br (V) which, heated with K$_2$CO$_3$, gave IV. Hydrolysis of IV gave L-TsN.(CH$_2$)$_3$.CHCO$_2$H (VI), also prepd. from TsCl and L-proline (VII). Reduction of IVa with Na in NH$_3$ gave NH$_2$.(CH$_2$)$_3$.CHCONHPh (VIII) which yielded VII on hydrolysis. The above reactions represent the 1st chem. transformation of L-glutamic acid to L-proline. M.ps. are corrected. I. prepd. according to

(over)

Zdenek Tavora

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C.A. 49, 3126b from L-TsNHCH(CO₂H)(CH₂)₄CO₂H in 89% yield, m. 109–7° (from C₆H₆-Et₂O). Treating 5.3 g. I in 10 ml. CHCl₃, with ice cooling, with CHCl₃ satd. with NH₃ at 0°, shaking the mixt. after 10 min. with 2N HCl, filtering off the ppt., and washing it with H₂O, 90% EtOH, and Et₂O gave 4.3 g. II, m. 192–3° (194–5° after crystn. from H₂O). IIa, from I and PhNH₂, m. 249–51° (from AcOH). A suspension of 4.23 g. II in 20 ml. tetrahydrofuran treated with 0.4 g. LiBH₄ in 10 ml. tetrahydrofuran, the mixt. refluxed 5 hr. under H, the solvent evapd. on the steam bath at 16 mm., the residue treated with H₂O, acidified with a few drops 2N HCl, and the cryst. product filtered off (3.8 g.) and crystd. from 200 ml. abs. EtOH gave 3.6 g. III, m. 190–1°, also obtained (0.4 g., m. 186–7°) by reducing 1.41 g. II in 20 ml. tetrahydrofuran with 10 ml. 1.12M soln. of LiAlH₄ in Et₂O. Adding 0.62 g. LiBH₄ in 10 ml. tetrahydrofuran to 10.16 g. IIa in 50 ml. tetrahydrofuran refluxing the mixt. 4 hrs. in a H atm., distg. off the solvent *in vacuo*, treating the residual oil with H₂O, acidifying with dil. HCl, adding AcOEt, segr. the deposited crystals, and washing them with H₂O gave 9.4 g. crystals, m. 115–20°; crystn. from AcOEt yielded 1.53 g. of a compd., m. 150–60° (not further investigated), and 4.56 g. IIIa, m. 128–9°. Refluxing 1.6 g. IIIa, 1.6 g. TsCl, and 1.8 g. finely powd. K₂CO₃ in 20 ml. Me₂CO 2 hrs., pouring off the Me₂CO soln., extg. the solid twice with Me₂CO, evapg. the combined exts. to dryness, and crystg. the residue from abs. EtOH gave 1.17 g. IVa, m. 103–4°, [α]D −201.0° also obtained

Zdenek Pravda

(2.45 g., $[\alpha]_D^{18}$ −202.2°) by treating 2.7 g. VI.H_2O with 10 ml. $SOCl_2$ 30 min. at 60° and adding to the chloride in $CHCl_3$ 2.5 g. $PhNH_2$ in 10 ml. $CHCl_3$ at 0°, washing the mixt. after 10 min. with dil. HCl, and with H_2O, distg. off the $CHCl_3$ and crystg. the residue from 50 ml. MeOH. Heating 3.9 g. III with 30 ml. PBr_3 10 min. at 90–100°, distg. off the excess PBr_3 *in vacuo*, washing the residual oil with petr. ether and with 5% $NaHCO_3$ (the oil crystd.) and crystg. the product from AcOEt-petr. ether gave 1.6 g. V, m. 157–9°. Refluxing 0.7 g. V with 0.7 g. K_2CO_3 in 10 ml. Me_2CO 4 hrs., pouring off the Me_2CO, extg. the solid 3 times with Me_2CO, evapg. the solvent to dryness, treating the residue with Et_2O, sepg. the crystals, and washing them with Et_2O and with H_2O gave 0.42 g. IV, m. 124–5° (from AcOEt). Refluxing 0.5 g. IV with 10 ml. *N* HCl 2 hrs., adding C_6H_6 after cooling, sepg. the deposited crystals, and washing them with H_2O, C_6H_6, and petr. ether gave 0.5 g. VI.$^1/_2C_6H_6$, m. 95–8° (from C_6H_6). Dissolving this in 0.5*N* $NaHCO_3$, extg. the C_6H_6 with $CHCl_3$, and acidifying the soln. with HCl gave VI.H_2O, m. 58–60°, $[\alpha]_D^{18}$ −160.6°, which, dried 48 hrs. at 60°/0.1 mm. over P_2O_5, yielded glassy anhyd. VI. VI was also prepd. from natural VII by treating 10 g. VII and 21 g. $NaHCO_3$ in 500 ml. H_2O portionwise with 19.5 g. TsCl in 200 ml. Me_2CO, stirring the mixt. 3 hrs., distg. off the Me_2CO, extg. the residue with Et_2O, acidifying with HCl, and mixing with C_6H_6 to give 20.6 g. VI.0.5 C_6H_6, m. 96–8°; VI.H_2O, m. 58–60°, $[\alpha]_D^{18}$ −152.8°. In addn., 1 g. *p*-toluenesulfonylpropylproline, m. 227–9°, was isolated. Reduction of 0.84 g. IVa with 0.4 g. Na in liquid

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NH_3, addn. of 0.8 g. NH_4Cl, evapn. of the NH_3 at room temp., drying of the residue *in vacuo*, soln. in H_2O, acidification with HCl, extn. with Et_2O, and alkalinization at 0° gave 0.3 g. VIII, m. 76–7° (from Et_2O-petr. ether). Refluxing 0.76 g. VIII in 10 ml. 2*N* HCl 6 hrs., evapg. to dryness, dissolving the residue in H_2O, evapg. again to dryness, dissolving the residue in H_2O, filtering the soln. through Amberlite IR-4B, washing with 100 ml. H_2O, and evapg. the eluates yielded 0.32 g. VII, m. 224–6°, [α 84.2° (from EtOH-Et_2O), also obtained by heating 0.[illegible] monohydrate VI.H_2O and 5 ml. 36% HBr in AcOH 3 hrs. at 65°, evapg. the soln. at 15 mm., washing the oil 3 times with Et_2O, dissolving it in the min. amt. of H_2O, filtering through Amberlite (grain dimensions 1–2 mm.), washing with 100 ml. H_2O, evapg. to dryness, dissolving the residue in abs. EtOH and pptg. the product with Et_2O to give 0.15 g. (67%) VII, m. 226–8 (decompn.), $[\alpha]^{18}_D$ −84.6°. **XIV. Constitution of phalloidine. 3.** Bedřich Meloun and František Šorm (Czech. Akad. věd, Prague). *Chem. Listy* 48, 1670–6(1954); *Collection Czechoslov Chem. Communs* 20, 268–72(1955); cf. *C.A.* 49, 180d.—Hydrolysis of *phalloidine* (I) with a 30-fold amt. of 6*N* HCl 16 hrs. at 105° and paper chromatography of the hydrolyzate in *m*-cresol sztd. with H_2O gave the following compds.: *alanine* (II) 26.7, *oxindolylalanine* (III) 22.5, *threonine* (IV) 13.1, *cysteine* (V) 14.6, and *alloky-*

Zdenk Pravda

droxyproline (VI) 20.1%. Desulfuration of 44.9 mg. I in 10 ml. H_2O by shaking 24 hrs. at room temp. with 1 g. Raney Ni W 6, removal of the Ni, washing with 15 ml. H_2O, and frost sublimation gave 16.56 g. *dethiophalloidine* (VII), further amts. being obtained by treatment with 10% C_5H_5N and frost sublimation for a total yield of 35.5 mg. (79%) VII. The product consisted of 2 compds. having R_f 0.45 and 0.52, resp. (in AcEt:Me_2CO:H_2O 20:2:5). Chromatography of crude VII over a cellulose column with the above mixt. gave 19.8 g. pure VII contg. no III, showing absorption max. at 280 and 283 mμ, and contg. 0.63 mole *tryptophan* (VIII)/mole VII. Hydrogenation of 17 mg. VII in 5 ml. H_2O over 30 mg. PtO_2 in the presence of 0.1 ml. 6*N* HCl gave, after 36 hrs., 13 mg. incompletely hydrogenated product contg. *dethiohydrophalloidine* (VIIa). The hydrolyzate of VIIa contained II 37.6, IV 17.2, VI 15.7%, and no hexahydroxindolylalanine (IIIa). The content of octahydrotryptophan (VIIIa) was not detd. As reference prepns. IIIa and VIIIa, m. 238, were prepd. by hydrogenation of III and VIII over PtO_2 in aq. HCl. IIIa *picrolonate*, m. 204° (from aq. EtOH). On the basis of the expts., it follows that I contains only 1 mole of an amino acid having an indole ring and being bound as 2-mercaptotrypophan. The following formulas for the hexapeptide are suggested (where A = cysteine, B = alanine, C = hydroxyproline, D = tryptophan, E = threonine): S.A.B.C.D.B.E., S.A.E.D.B.C.B.

M. Hudlický

G

Country : Czechoslovakia

Author : [illegible]

Inst. : [illegible]

Orig. Pub. : [illegible]

Abstract : [illegible]

Card: 1/4

G

Country : Czechoslovakia
Category : Organic Chemistry. Natural Compounds and Their Synthetic Analogs.
Abs. Jour. : Ref Zhur-Khimiya, No.14, 1959, No. 48551

Author :
Institut. :
Title :

Orig Pub. :

Abstract : Of α,β-diethyl ester III in the reaction mixture was studied by means of paper chromatography using phenol-water (3 : 1) and n-butanol-CH_3COOH-water (4 : 1 : 1) solvent systems. The values obtained were: RfI, 0.[illegible]0 or 0.12, RfII, 0.83 or 0.[illegible], RfIII, 0.[illegible] or 0.75. The chromatogram determination of the I, II, and III contents found in the reaction mixture as a function of time was given in a table. Traces of III appear on chromatograms only after inter-

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Country : [illegible]

Category : [illegible] 3

Pub. Jour. : Ref Zhur-Khimiya, No.14, 1959, No. 47571

Author :

Institute :

Title :

Orig. Pub. :

Abstract : [illegible] 5 hours 120 minutes. -- T. [illegible].

Card: 1/4

CZECHOSLOVAKIA/Organic Chemistry. Natural Products and Their Synthetic Analogues. G-3

Abs Jour: Ref Zhur-Khim , No 24, 1958, 81801.

Author : Rudinger J., Pravda Z.
Inst :
Title : The Aminoacids and Peptides. XXII. The Synthesis of Some Peptides of Glutamine. The Structure of Eusenine.

Orig Pub: Chem. listy, 1958, 52, No 1, 120-129

Abstract: The synthesis of certain more complex peptides of glutamine, based on obtaining the peptide derivatives of 1-tosyl pyrrolidone-5-carbonic-2- acid, their transformation into the corresponding derivatives of tosyl-glutamine and the removal of the tosyl group (see communication XI, r. Zh. Khim.,

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1955, 31774) is described, whereby the major attention is given to the preparation of two natural products. In the first case the structure of eusenine was completely proven, which was separated from the sea weed Eisenia bicyclis (see Ochira T., Bull. Agric Chem. Soc Japan, 1939, 15, 1339) The synthesized L-pyrrolydoncarbonyl-L-glutaminyl-L-alanine with its own properties (melting point, mixed melting point, optical rotation, chromatographic behavior), corresponded to a true sample of the natural product In the second case it was impossible to prove the identity of the synthesized L-pyrrolydoncarbonyl-L-glutaminyl-L-glutamine with the compound separated from the sea weed pelvetia fastigiata by Dekker

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and co-workers, to which they ascribe the above-mentioned structure. The syntheses of both peptides were also verified by another method by using the carbobenzoxy (CBZ) group for protecting the terminal amino group. In the case of the synthesized benzyl ester, contrary to certain literature data, the selective cleavage of CBZ group was not possible to accomplish by the action of HBr (gas) in glacial acetic acid and the simultaneous protection of the benzyl ester group. The hydrochloride of the benzyl ester of L-alanine (I) according to the literature references is obtained (see: Erlanger B.F., Brand E., J. Amer. Chem. Soc , 1951, 73, 3508) from N-carboxy-anhydride (II) by the introduction of phosgene over a period of

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3 hours into a suspension of 50 m. moles of L-alanine in 100 ml of tetrahydrofurane at 45°C., m p. of II = 84-86°C. (from ether - petroleum ether); to the solution of II in 100 ml etner, saturated with HCl (gas) at 0°C., 15 ml of $C_6H_5CH_2OH$ was added, and after 16 hours the mixture was concentrated until crystallization took place, yield 76% (based on alanine), m.p 136-139°C 1-tosyl-L-pyrrolidon-5-carbonyl-2L-glutamine (III) was obtained by the addition of 3 grams of the acid chloride of tosyl-L-pyrrolydon-carbonic acid (from 30 grams of tosyl-L-glutaminic acid by the action of $SOCl_2$) to 0 1 moles of L-glutamine and 0.1 moles of $NaHCO_3$ in 30 ml of water, whereupon the pH was kept in the range of 8.5 to 8.8 with 2 N NaOH

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(total 60.5 ml). Fifty milliliters of ether was poured on the filtrate, acidified with concentrated hydrochloric acid and put aside for 48 hours at 0°C., yield 49% (hydrate), m p. 187-188°C. (from water). After drying under vacuum for 7 hours over P_2O_5, anhydrous III was obtained with a melting point of 188-189°C. The benzyl ester of L-tosyl-L-pyrrolidone-5-carbonyl-2-L-glutaminyl-L-alanine was obtained by carefully mixing with 2 m. moles of III [in 5 ml of $HCON(CH_3)_2$ (IV) at -10°C.], N-ethyl pyperidine (V), $ClCOOC_4H_9$-secondary (at -5°C.) and I + V (in 2.5 ml of IV); the mixture was heated for a short time, IV was distilled under vacuum, the residue after addition of water was washed with dilute

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HCl, water, 2.5% solution of $NaHCO_3$ and again with water; yield 84%, m.p. 217-218°C. (from 75% alcohol). The 1-tosyl-L-pyrrolidone-5-carbonyl-2-L-glutaminyl-L-alanine (VI) was obtained by hydrogenating 0.80 grams of the preceeding benzyl ester in a mixture of 50 ml of 80% dioxane and 0.5 ml glacial acetic acid [over 0.1 grams Pd/C (20% Pd)]. The filtrate was concentrated, the residue after concentrating was re-precipitated from 2.5% solution of $NaHCO_3$ with the aid of HCl (acid); yield 98%, m.p. 222-224°C. The tosyl-L-glutaminyl-L-glutaminyl-L-alanine (VII) was synthesized by boiling 0.66 grams of VI for 3 minutes with 10 ml of 12% aqueous ammonia and by acidifying with concentrated HCl while hot, yield 96%, m.p.

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242°C. The benzyl ester of CBZ-L-glutaminyl-L-alanine (VIII) was obtained by the addition of 6 m. moles of CBZ-L-glutamine (IX) in 20 ml acetone at 0°C. to 6 m. moles of V with cooling in ice and 6.2 m. moles of ClCOOC$_4$H$_9$-iso (X), and after 20 minutes the solution of 5 m. moles of I and V in 50 ml of acetone [sic]. After 16 hours at 20°C., the gel was filtered off (the further portion from the mother liquors after concentration), washed with 0.5 M $NaHCO_3$, 1 M HCl and water; yield 82%, m.p. 198-199 C (from absolute alcohol) The L-glutaminyl-L-alanine (XI) was obtained by the hydrogenation of 4 1 m. moles of VIII (for 4 hours) in 700 ml of alcohol and 0.3 ml of acetic acid over 1 gram of 10% Pd/C, the filtrate was evaporated to dryness; yield 79%,

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m.p. 192-193°C. (decomposition), m.p. 195-196°C. (decomposition; from aqueous alcohol). The CBZ-L-glutaminyl-L-glutaminyl-L-alanine (XII) was obtained by addition at 0°C. to the acetone solution of 2 2 m. moles of IX with 2.2 m. moles of V and X each, after 30 minutes upon cooling with ice, the aqueous solution of 2.35 m. moles of XI and V was added, after 16 hours at 20°C. the acetone was distilled off, the aqueous solution was acidified to a pH of 1 with 1 N HCl The gel was washed with chloroform, dissolved in 400 ml water, the solution was filtered through sulfonated cationite F-extra (H+ form) and subjected it to lyophilic drying; yield 89%, m.p. 223-226°C (decomposition). The L-glutaminyl-L-glutaminyl-L-alanine

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(XIII) was synthesized:

a) by reduction of 0.66 grams of VII with the aid of sodium in liquid ammonia (120 ml), the ammonia was distilled off and the residue was dissolved in 15 ml of ice-water, agitated for 15 minutes with 5 grams of amberlite IRC-50 (NH form), the ions SO_4^{2-} and SO_3^{2-} were removed from the concentrated filtrate with varium acetate. The filtrate was treated with the same cationite, concentrated and 3 volumes of alcohol was added for the crystallization; yield 82% of the monohydrate, m.p. 218°C. (decomposition);

b) by hydrogenation of 1.95 m. moles of XII in 50 ml

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of IV and 2 ml glacial acetic acid in a stream of hydrogen (a 10% Pd/C), yield 83.5%, m.p. 209-213°C. (decomposition). Upon filtering the aqueous solution of the above product through amberlite IRA-400 (acetate form) and IRC-50 (buffered with ammonium acetate to a pH of 4.8), chromatographically pure tripeptide was obtained; yield 64%, R_f 0.75 (phenol - water-ammonia), $R_{(alanine)}$ 0.62 (n-butanol - acetic acid - water, 4:1:1), m.p. (monohydrate) 214-217°C. (decomposition). L-pyrrolydone-5-carbonyl-2-L-glutaminyl-L-alanine (eisenine) was obtained by boiling 0 20 grams of XIII for 8 hours according to method (b) in 50 ml of water, by filtering through a column of sulfonic cationate F4M-extra (H form) and by lyophilic drying;

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yield 79.5%, m.p. (sesquihydrate) 222-224°C. (deliquesces before 180°C.), $[\alpha]^{6}_{D}$ -54.2 ± 0.3 (c 1.3 water), R_f 0.49 (iso-C_3H_7OH - $C_6H_5COOCH_3$ - HCOOH - water, 3:2:1:1) does not produce any melting point depression with natural eisenone, m.p. 226-227°C. (from 99% alcohol). The sample obtained from XIII by the following method has the same melting point and similar chromatographic properties: (a) tosyl-L-glutaminyl-L-glutamine (XIV) was obtained by boiling 20 grams of monohydrate of III in 60 ml of 20% ammonia for 25 minutes, by acidifying with concentrated HCl at 0°C.; the crystalline product was washed with water and alcohol; yield 93%, m.p. 215-218°C. (Kofler block). L-glutaminyl-L-glutamine (XV) was synthesized by the

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Abs Jour: Ref Zhur-Khim., No 24, 1958, 81801.

reduction of 9.5 grams of XIV in 300 ml of liquid ammonia with the aid of 3.3 grams of sodium. After the solution of ammonium acetate has been decolorized, ammonia was evaporated the residue was dissolved in ice-water, was mixed with amberlite IRC-50 (NH^+ form), the filtrate was evaporated to near dryness, a few drops of glacial acetic acid were added, and the solution was allowed to stand for ~ 12 hours at 0°C; yield 5.47 grams. The crude product was suspended in water, was dissolved in concentrated ammonia, filtered with activated carbon, neutralized with glacial acetic acid; after 12 hours at 0°C. it was obtained in a yield of 80%, m.p. 214-216°C. (block). 1-tosyl-L-pyrrolidone-5-carbonyl-2-L-glutaminyl-L-glutamine (XVI)

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was obtained by adding with agitation 12.7 m. moles of XV and 25 m. moles of $NaHCO_3$ in 40 ml water and 1.6 ml of 4 N NaOH, and 12.8 m. moles of the acid chloride of tosyl-L-pyrrolidone-5-carbonic acid and 1.6 ml of 4 N NaOH. Then the filtrate was acidified; yield 31%, m.p. 214-216°C. (block; from aqueous alcohol). Tosyl-L-glutaminyl-L-glutaminyl-L-glutamine (XVII) was obtained by boiling 2 grams of XVI in 20 ml of 15% ammonia for 15 minutes, by acidifying the filtrate with concentrated HCl, washing with water and alcohol; yield 93% (hydrate), m.p. 200-202°C. (block), γ - α -diethyl ester of CBZ- α -L-glutaminyl-L-glutaminic-acid (XVIII). X was added to the solu-

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tion of γ-ethyl ester of CBZ-L-glutaminic acid and V in 200 ml acetone (-10° C.); after 30 minutes (20° C.) with cooling, a solution of the acid chloride of γ-ethyl ester (XIX-a) L-glutaminic acid (XIX-acid) (for the previous compound always 20 m. moles was added) and 40 m. moles of V in 10 ml water was added; finally water was added until a homogeneous solution was obtained, after 16 hours (20° C.), the solution was concentrated; the residue was dissolved in 0.5 M of $NaHCO_3$, was extracted with ether, acidified to a pH of 1 with 1 N HCl, the product was extracted with ethyl acetate; yield 42%, m.p. 129-131° C. (from 66% methanol). γ, γ', γ'' - triethyl ester of CBZ-α-L-glutaminyl-α'-L-glutaminyl-L-glutaminic

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acid (XX). X was added to the solution of XVIII and V in 10 ml of tetrahydrofurane (-10° C.), after 30 minutes at 20° C. the solution was cooled to 0° C. and the solution of XIX-a was added, (for all previous compounds, 2 m. moles were always added), and 4 m. moles V in 5 ml water. After 16 hours at 20° C., the separated gel which was formed as the result of concentration, was dissolved in 0.5 M $NaHCO_3$. A gel-like product was obtained by an extraction of the solution with ether and acidifying to a pH of 1; yield 51%, m.p. 109-112° C. (from aqueous methanol). CBZ-L-glutaminyl-L-glutaminyl-L-glutamine (XX) was obtained by reacting 1.13 grams of XX [sic], 1 ml of ethylene glycol and 20 ml of liquid ammonia

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for 10 days at 20°C. in a welded tube, afterwards the ammonia was evaporated, the gel was dissolved in 100 ml of concentrated ammonia, the solution was concentrated and acidified to a pH of 1, after 10 hours at 0°C., the separated gel was dried; yield 67%, m.p (sesquihydrate) 230-232°C. L-glutaminyl-L-glutaminyl-L-glutamine (XXII) was obtained:

a) by reduction of 1.25 grams of XXI with the aid of sodium in 200 ml of liquid ammonia, after concentration and removing the ammonia, the residue was dissolved in ice-water, was mixed with 5 grams of amberlite IRC-50 (NH_4^+ form), the solution was evaporated

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to dryness, the residue was suspended in 10 ml of hot water, cooled and washed with alcohol; yield 80% (crude), m.p. 226-232°C. (block; from water), the product was chromatographically homogeneous.

b) Shaking 0.64 grams of XXI with 5 ml of a saturated solution of HBr (gas) in glacial acetic acid for 45 minutes and diluting with ether, the separated hydrobromide was dissolved in water, pH was brought to 5.5 with LiOH, free XXII was precipitated with alcohol, was again dissolved in water and was filtered through basic anionite MFD (acetate form) and through amberlite IRC-50 (H^+ form); after lyophilic drying, yield 88%, m.p. (monohydrate) 228-230°C. (decomposition); the

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