

PAPERS OF DR. HAMAO UMEZAWA

1. Studies on a substance inhibiting Gram negative bacteria, produced by Penicillium. Isolation and crystallization of patulin-like substance. (in Japanese): H. Umezawa, K. Uekane, Y. Mizuhara and M. Hagiwara, Nihon Iji Shimpo, No. 1179, 68, 1946.
2. Studies on antibacterial substances produced by streptomycetes. Isolation of streptomycin, streptothricin and actinomycin A. (in Japanese): H. Umezawa, M. Hayano, T. Takeuchi, B. To and Y. Mizuhara, Kagaku Ryoho Kenkyusho Shuho, 1, 196, 1947.
3. Differentiation of coccus and bacillus by observation of schlieren streaks. (in Japanese): H. Umezawa and T. Takeuchi, Nippon Saikingaku Zasshi, 2, 33-34, 1947; Nippon Igaku, No. 3408, 174, 1946.
4. Assay of tuberculin. (in Japanese); H. Umezawa and F. Shiozawa, Nippon Saikingaku Zasshi, 2, 34-36, 1947; Nippon Igaku, No. 3402, 44, 1946.
5. A crystalline antibacterial substance from Penicillium leucopus and four other strains of Penicillium sp. and Aspergillus clavatus and its probable identity with patulin. (in Japanese): H. Umezawa, Y. Mizuhara, K. Uekane and M. Hagihara, J. Penicillin, 1, 6-13, 1947/8.
6. Studies on the penicillin. II. Relation between the growth inhibitory effect in vitro and the protective activity in vivo. (in Japanese): H. Umezawa and T. Takeuchi, J. Penicillin, 1, 14-18, 1947/8.
7. Studies on the increased resistance of Staphylococcus aureus against penicillin, patulin, citrinin and toluquinone. (in Japanese): H. Umezawa and K. Uekane, J. Penicillin, 1, 79-81, 1947/8.
8. Studies on the antibacterial substance from actinomycetes. I. A crystalline antibacterial substance from a strain of actinomycetes. (in Japanese); H. Umezawa, S. Hayano, T. Takeuchi and Y. Mizuhara, J. Penicillin, 1, 129-133, 1947/8.
9. Studies on the antibiotic substance from actinomycetes. II. A basic antibacterial substance from several strains of actinomycetes. (in Japanese): H. Umezawa, S. Hayano and T. Takeuchi, J. Penicillin, 1, 134-140, 1947/8.
10. Studies on the penicillin cup assay. I. On the various experimental influence on the cup assay and the comparison of the stainless steel cup and aluminium cup. (in Japanese): H. Umezawa and Y. Ogata, J. Penicillin, 1, 193-196, 1947/8.
11. Studies on the penicillin cup assay. II. Determination of the potency of working standard and error by the cup assay. (in Japanese): H. Umezawa, S. Suzuki and T. Takeuchi, J. Penicillin, 1, 197-204, 1947/8.
12. Studies on the antibiotic substance produced by Actinomyces sp. III. A slightly toxic and basic antibiotic substance from a strain of Actinomyces. (in Japanese): H. Umezawa, D. V. Ngu, T. Takeuchi and Y. Sekizawa, J. Penicillin, 1, 221-224, 1947/8.
13. The influence of the phenylacetic acid, paranitrophenylacetic acid, paraaminophenylacetic acid and paraoxyphenylacetic acid upon the penicillin production by surface culture. (in Japanese): H. Umezawa, S. Suzuki, T. Shigei and T. Takeuchi, J. Penicillin, 1, 363-372, 1947/8.
14. Studies on the penicillin assay. III. Error of the cup assay. (in Japanese): H. Umezawa, S. Suzuki and T. Takeuchi, J. Penicillin, 1, 373-376, 1947/8.
15. Studies on the culture media for penicillin production. Particularly on the media added with

- urea and wheat bran. (in Japanese): H. Umezawa and S. Suzuki, J. Penicillin, 1, 409-417, 1947/8.
16. Studies on the influence of penicillin and patulin on the respiration of bacteria. (in Japanese): H. Umezawa and H. Nishikawa, J. Penicillin, 1, 640-646, 1947/8.
 17. Studies on the penicillin production by surface culture with Q-176 strain. (in Japanese): H. Umezawa and T. Takeuchi, J. Penicillin, 1, 647-648, 1947/8.
 18. Studies on the cup assay. IV. On the Miyamura's rapid method. (in Japanese): H. Umezawa and H. Kosaka, J. Penicillin, 1, 649-651, 1947/8.
 19. Studies on the mechanism of the agglutination. I. On the lattice theory.: H. Umezawa, Jap. Med. J., 1, 51-54, 1948.
 20. Studies on the mechanism of the agglutination. II. On the quantitative relation between the surface area of the bacteria and the binding agglutinin.: H. Umezawa, Jap. Med. J., 1, 55-61, 1948.
 21. Studies on the potency test of tuberculin.: H. Umezawa and F. Shiozawa, Jap. Med. J., 1, 62-63, 1948.
 22. A new method of testing the potency of tuberculin.: H. Umezawa and S. Suzuki, Jap. Med. J., 1, 63-68, 1948.
 23. An antibacterial substance from several strains of Penicillia and its probable identity with penicillin.: H. Umezawa, T. Takeuchi, F. Shiozawa, K. Uekane and T. Ishikawa, Jap. Med. J., 1, 69-72, 1948.
 24. Studies on the surface culture for the penicillin production.: H. Umezawa, S. Suzuki and T. Takeuchi, Jap. Med. J., 1, 73-76, 1948.
 25. The influence of the phenylacetic acid, paranitrophenylacetic acid, paraaminophenylacetic acid and paraoxyphenylacetic acid on the penicillin production by surface culture.: H. Umezawa, S. Suzuki, T. Shigei and T. Takeuchi, Jap. Med. J., 1, 76-80, 1948.
 26. Studies on the influence of penicillin and patulin on the respiration of bacteria.: H. Umezawa and H. Nishikawa, Jap. Med. J., 1, 80-83, 1948.
 27. Studies on the mechanism of agglutination. III. Heterogeneity of the agglutinin in the anti-serum.: H. Umezawa, Jap. Med. J., 1, 89-90, 1948.
 28. Studies on the mechanism of the agglutination. IV. The agglutinin attaching to the bacteria in the prozone and the size of the agglutinin.: H. Umezawa, Jap. Med. J., 1, 90-93, 1948.
 29. Studies on the potency test of penicillin: on the error in the cup assay and Miyamura's rapid method.: H. Umezawa, S. Suzuki, T. Takeuchi and Y. Ogata, Jap. Med. J., 1, 93-97, 1948.
 30. A crystalline antibacterial substance from Penicillium leucopus and four other strains of Penicillia and Aspergillus clavatus, and its probable identity with patulin.: H. Umezawa, Y. Mizuhara, K. Uekane and M. Hagiwara, Jap. Med. J., 1, 97-100, 1948.
 31. Isolation of actinomycin A from a strain of streptomycetes.: H. Umezawa, S. Hayano, T. Takeuchi and Y. Mizuhara, Jap. Med. J., 1, 100-103, 1948.
 32. Isolation of Penicillin G N-ethylpiperidine salt and sodium salt and their stability.: K. Maeda and H. Umezawa, Jap. Med. J., 1, 238-244, 1948.
 33. Theoretical studies on the end point curve on rod-shaped particles in ultrafiltration.: H. Umezawa and N. Tanaka, Jap. Med. J., 1, 244-253, 1948.
 34. Studies on the extraction of penicillin.: H. Umezawa and T. Takeuchi, Jap. Med. J., 1, 327-338, 1948.
 35. On the differentiation of streptomycin and allied substances (streptothricin group) and rapid isolation of streptomycin-producing strain.: H. Umezawa, S. Hayano and Y. Ogata, Jap. Med. J.,

- 1, 339-346, 1948.
36. Isolation of a crystalline antibiotic substance from a strain of *Streptomyces* and its identity with chloromycetin.: H. Umezawa, T. Tazaki, H. Kanari, Y. Okami and S. Fukuyama, *Jap. Med. J.*, 1, 358-363, 1948.
 37. Isolation of streptomycin from a pink variant of *S. griseus*.: H. Umezawa, Y. Ogata, T. Takeuchi and T. Tabata, *Jap. Med. J.*, 1, 397-404, 1948.
 38. Classification of antibiotic strains of streptomyces and their antibiotic substance on the basis of their antibacterial spectra.: H. Umezawa, S. Hayano and Y. Ogata, *Jap. Med. J.*, 1, 504-511, 1948.
 39. Isolation of a new antibiotic substance, aureothricin from a strain of streptomyces.: H. Umezawa, K. Maeda and H. Kosaka, *Jap. Med. J.*, 1, 512-517, 1948.
 40. Ammonium sulphate on the production of penicillin. (in Japanese): H. Umezawa, T. Takeuchi and H. Kanari, *J. Antibiot.*, 2, 1-3, 1948/9.
 41. Some trials on the improvement of flash evaporator made in glass. (in Japanese): H. Umezawa, T. Horiguchi, T. Takeuchi and H. Kanari, *J. Antibiot.*, 2, 4-5, 1948/9.
 42. Isolation of the penicillin G of N-ethylpiperidine salt and of sodium salt and their stability. (in Japanese): K. Maeda and H. Umezawa, *J. Antibiot.*, 2, 80-87, 1948/9.
 43. Studies on the elimination of bacteria by radio-frequency and its application for the penicillin production. (in Japanese): K. Takeda and H. Umezawa, *J. Antibiot.*, 2, 231-233, 1948/9.
 44. Studies on the antibiotic substances from actinomyces. VI. A rapid isolation and identification of streptomycin producing strain. (in Japanese): H. Umezawa, S. Hayano and Y. Ogata, *J. Antibiot.*, 2, 284-288, 1948/9.
 45. Studies on the antibiotic substances from actinomyces. VII. Studies on streptomycin production and other chemical changes during laboratory tank fermentation. (in Japanese): H. Umezawa, K. Takeda and W. Suzuki, *J. Antibiot.*, 2, 289-291, 1948/9.
 46. Studies on the antibiotic substances from actinomyces. VIII. Isolation of streptomycin reineckate and streptidine picrate. (in Japanese): H. Umezawa and H. Kanari, *J. Antibiot.*, 2, 292-295, 1948/9.
 47. Isolation of a crystalline antibiotic substance from a strain of streptomyces and its identity with chloromycetin. (in Japanese): H. Umezawa, T. Tazaki, H. Kanari and S. Fukuyama, *J. Antibiot.*, 2, 415-419, 1948/9.
 48. Isolation of streptomycin from pink variants of *S. griseus*. (in Japanese): H. Umezawa, Y. Ogata, T. Takeuchi and T. Tabata, *J. Antibiot.*, 2, 489-495, 1948/9.
 49. On the molecular formula and bacteriostatic action of chloromycetin. (in Japanese): H. Umezawa and H. Kanari, *J. Antibiot.*, 2, 797-798, 1948/9.
 50. Studies on the extraction and purification of streptomycin. I. (in Japanese): H. Umezawa, T. Takeuchi and K. Endo, *J. Antibiot.*, 2, Suppl-A 92-104, 1949.
 51. Isolation of a new antibiotic substance, aureothricin from a strain of streptomyces. (in Japanese): H. Umezawa, T. Tazaki, K. Maeda, H. Kosaka and S. Fukuyama, *J. Antibiot.*, 2, Suppl-A 105-111, 1949.
 52. On some differences of the antibacterial spectra of the antibiotic streptomyces growing in the broth and on the agar. (in Japanese): H. Umezawa and T. Tabata, *J. Antibiot.*, 2, Suppl-B 55-59, 1949.
 53. Resistances of antibiotic strains of streptomyces to chloromycetin and a rapid isolation method of chloromycetin-producing strains. (in Japanese): H. Umezawa, T. Tazaki and S. Fukuyama, *J. Antibiot.*, 2, Suppl-B 87-94, 1949.

54. On the pilot plant scale production of chloromycetin.: H. Umezawa, R. Kametani, T. Osato, K. Takeda, H. Kanari, R. Utahara, A. Kawahara and R. Wada, J. Antibiot., 2, Suppl-B 95-103, 1949.
55. Studies on an antibiotic substance of Streptomyces griseus, grisein.: H. Umezawa, S. Hayano and Y. Ogata, J. Antibiot., 2, Suppl-B 104-109, 1949.
56. Studies on the streptothricin-group-substances on streptothricin A and streptothricin B.: H. Umezawa, T. Takeuchi and E. Kurosu, Jap. Med. J., 2, 9-15, 1949.
57. On the molecular formula and bacteriostatic action of chloromycetin.: H. Umezawa and H. Kanari, Jap. Med. J., 2, 19-21, 1949.
58. Resistance of antibiotic strains of streptomyces to chloromycetin and a rapid isolation method of chloromycetin-producing strains.: H. Umezawa, T. Tazaki and S. Fukuyama, Jap. Med. J., 2, 73-78, 1949.
59. Studies on an antibiotic substance of S. griseus, grisein.: H. Umezawa, S. Hayano and Y. Ogata, Jap. Med. J., 2, 79-84, 1949.
60. On the new source of chloromycetin, Streptomyces omiyaensis.: H. Umezawa, T. Tazaki, Y. Okami and S. Fukuyama, Jap. Med. J., 2, 207-211, 1949.
61. Effect of streptomycin on experimental tuberculosis. (1), (2). (in Japanese): K. Yanagisawa, H. Umezawa, A. Okabayashi, Y. Miyamoto, Y. Egashira and H. Hayashi, Rinsho, 2, 419-554, 1949.
62. Studies on the fermentation and the extraction of chloromycetin. (in Japanese): H. Umezawa and K. Maeda, J. Antibiot., 3, 41-52, 1949/50.
63. Studies on the streptothricin-group-substances. On streptothricin A and streptothricin B. (in Japanese): H. Umezawa, T. Takeuchi and E. Kurosu, J. Antibiot., 3, 232-235, 1949/50.
64. On the new source of chloromycetin, Streptomyces omiyaensis. (in Japanese): H. Umezawa, T. Tazaki, Y. Okami and S. Fukuyama, J. Antibiot., 3, 292-296, 1949/50.
65. Studies on streptothricin BI produced by S. fradiae. (in Japanese): H. Umezawa, T. Takeuchi and S. Yamagiwa, J. Antibiot., 3, 833-838, 1949/50.
66. On the streptomycin production of S. griseus, the strain No. R₄-3475. (in Japanese): H. Umezawa, Y. Okami and K. Ashino, J. Antibiot., 3, Suppl-A 4-10, 1949/50.
67. The influence of the nitrogen mustard and the ultraviolet irradiation on the strain of S. griseus, No. 41. (in Japanese): Y. Okami, K. Ashino and H. Umezawa, J. Antibiot., 3, Suppl-A 11-15, 1949/50.
68. Studies on the pilot plant scale production of streptomycin in various fermenters. (in Japanese): H. Umezawa, R. Kametani, T. Osato, H. Kanari, A. Kawahara, R. Wada and Y. Okami, J. Antibiot., 3, Suppl-A 16-21, 1949/50.
69. An observation of actinophage during the streptomycin production in the stainless steel fermenter. (in Japanese): H. Umezawa, R. Kametani, Y. Okami, A. Kawahara and T. Osato, J. Antibiot., 3, Suppl-A 22-27, 1949/50.
70. The isolation of streptomycin-producing strains and the relation between the strains and the production media. (in Japanese): Y. Okami, S. Hayano, Y. Ogata and H. Umezawa, J. Antibiot., 3, Suppl-B 1-6, 1949/50.
71. Studies on the mutation of Streptomyces griseus No. 200 by X-ray irradiation. (in Japanese): Y. Okami and H. Umezawa, J. Antibiot., 3, Suppl-B 7-9, 1949/50.
72. Studies on the inoculation for the streptomycin production. (in Japanese): K. Yagishita and H. Umezawa, J. Antibiot., 3, Suppl-B 10-15, 1949/50.
73. Studies on the pilot plant scale production of the streptomycin. III. On the aeration and the comparison of the Waksman's medium and soybean medium. (in Japanese): H. Umezawa, T. Osato, R. Utahara, K. Yagishita and Y. Okami, J. Antibiot., 3, Suppl-B 16-21, 1949/50.

74. Studies on streptothricin BI produced by *S. fradiae*.: H. Umezawa, T. Takeuchi and S. Yamagiwa, Jap. Med. J., 3, 25-30, 1950.
75. On a new antibiotic, griseolutein, produced by streptomyces.: H. Umezawa, S. Hayano, K. Maeda, Y. Ogata and Y. Okami, Jap. Med. J., 3, 111-117, 1950.
76. Studies on the intermediate metabolism of chloramphenicol production.: K. Yagishita and H. Umezawa, Jap. Med. J., 3, 289-297, 1950.
77. On a new antibiotic, griseolutein, produced by streptomyces. (in Japanese): H. Umezawa, S. Hayano, K. Maeda, Y. Ogata and Y. Okami, J. Antibiot., 4, 34-40, 1951.
78. On the various source of actinomycin.: H. Umezawa, K. Maeda and Y. Okami, J. Antibiot., 4, 335-338, 1951.
79. Studies on the intermediate metabolism of chloramphenicol production. I. Changes of amino acids during fermentation and utilization of amino acids for chloramphenicol production. (in Japanese): K. Yagishita and H. Umezawa, J. Antibiot., 4, 441-449, 1951.
80. Studies on the pilot plant scale production of streptomycin. III. On the extraction process. (in Japanese): H. Umezawa, Y. Osato, R. Utahara, K. Yagishita and Y. Okami, J. Antibiot., 4, Suppl-A 23-30, 1951.
81. Studies on chloramphenicol production in the pilot plant by fermentation.: K. Yagishita, T. Osato, R. Utahara and H. Umezawa, J. Antibiot., 4, Suppl-A 48-55, 1951.
82. On the bacteriostatic effect of naturally occurring chloramphenicol and synthetic *dl*-chloramphenicol.: H. Umezawa and M. Suzuki, J. Antibiot., 4, Suppl-A 56-58, 1951.
83. Nitrosporin, antibiotic from *Streptomyces nitrosporeus* active to gram positive bacteria.: H. Umezawa and T. Takeuchi, Jap. Med. J., 4, 173-179, 1951.
84. An antiviral substance, abikoviromycin, produced by *Streptomyces* sp.: H. Umezawa, T. Tazaki and S. Fukuyama, Jap. Med. J., 4, 331-346, 1951.
85. An antibiotic active to gram positive bacteria, nitrosporin, from *Streptomyces nitrosporeus*.: H. Umezawa and T. Takeuchi, J. Antibiot., 5, 270-273, 1952.
86. Isolation of streptomycin producing strains by using soybean medium for the screening test.: C. Iso, K. Yagishita and H. Umezawa, J. Antibiot., 5, 274-278, 1952.
87. On new antifungal substances, moldin and phaeofacin, produced by *Streptomyces* sp.: K. Maeda, Y. Okami, O. Taya and H. Umezawa, J. Antibiot., 5, 465, 1952.
88. On a new antibiotic, exfoliatin, produced by a strain of *Streptomyces*.: H. Umezawa, S. Takahashi, T. Takeuchi, K. Maeda and Y. Okami, J. Antibiot., 5, 466, 1952.
89. Cylinder plate assay and some studies on isonicotinic acid hydrazide with *M. tuberculosis* 607.: H. Umezawa, K. Oikawa and M. Suzuki, J. Antibiot., 5, 466, 1952.
90. An antiviral substance, abikoviromycin, produced by *Streptomyces* sp.: H. Umezawa, T. Tazaki and S. Fukuyama, J. Antibiot., 5, 469-476, 1952.
91. On an antitubercular antibiotic produced by *Streptomyces cinnamomensis* n. sp.: K. Maeda, Y. Okami, H. Kosaka, O. Taya and H. Umezawa, J. Antibiot., 5, 572-573, 1952.
92. Studies on a new antibiotic, exfoliatin, produced by a strain of streptomyces.: H. Umezawa, S. Takahashi, T. Takeuchi, K. Maeda and Y. Okami, Jap. J. Med. Sci. Biol., 5, 311-316, 1952.
93. Studies on antifungal substances, pheofacin and moldin produced by *Streptomyces* sp.: K. Maeda, Y. Okami, O. Taya and H. Umezawa, Jap. J. Med. Sci. Biol., 5, 327-339, 1952.
94. On an antibiotic, sarcidin, produced by *Streptomyces* n. sp. *S. achromogenes*.: T. Takeuchi, K. Nitta and H. Umezawa, J. Antibiot., A-6, 31-32, 1953.
95. On screening method of antiviral substances produced by streptomyces and on an antiviral substance, achromoviromycin.: H. Umezawa, T. Takeuchi, Y. Okami, K. Oikawa and T. Tazaki, J.

- Antibiot., A-6, 38, 1953.
96. Studies on anti-tumor substance produced by microorganisms. I. On the anti-tumor substance No. 289.: H. Umezawa, T. Takeuchi, K. Nitta, K. Maeda, T. Yamamoto and S. Yamaoka, J. Antibiot., A-6, 45-51, 1953.
 97. Studies on anti-tumor substance produced by microorganisms. II. On the process of large scale production and chemical characters of the anti-tumor substance No. 289.: T. Osato, K. Yagishita, R. Utahara, M. Ueda, K. Maeda and H. Umezawa, J. Antibiot., A-6, 52-56, 1953.
 98. Sarkomycin, an anti-tumor substance produced by streptomycetes.: H. Umezawa, T. Takeuchi, K. Nitta, T. Yamamoto and S. Yamaoka, J. Antibiot., A-6, 101, 1953.
 99. Studies on the production of griseolutein.: K. Yagishita, R. Utahara, M. Ueda, T. Osato and H. Umezawa, J. Antibiot., A-6, 113-116, 1953.
 100. A new antibiotic, pyridomycin.: K. Maeda, H. Kosaka, Y. Okami and H. Umezawa, J. Antibiot., A-6, 140, 1953.
 101. Studies on anti-tumor substances produced by microorganisms. III. On sarkomycin produced by a strain resembling to Streptomyces erythrochromogenes.: H. Umezawa, T. Takeuchi, K. Nitta, Y. Okami, T. Yamamoto and S. Yamaoka, J. Antibiot., A-6, 147-152, 1953.
 102. Studies on anti-tumor substances produced by microorganisms. IV. Sarkomycin-producing streptomycetes and other two streptomycetes producing the anti-tumor substance No. 289 and caryomycin.: Y. Okami, T. Okuda, T. Takeuchi, K. Nitta and H. Umezawa, J. Antibiot., A-6, 153-157, 1953.
 103. A new antibiotic, azomycin.: K. Maeda, T. Osato and H. Umezawa, J. Antibiot., A-6, 182, 1953.
 104. An antibiotic, phthiomycin.: K. Maeda, Y. Okami, R. Utahara, H. Kosaka and H. Umezawa, J. Antibiot., A-6, 183, 1953.
 105. Comparison of several methods of determining streptomycins A and B. (in Japanese): R. Utahara, K. Maeda and H. Umezawa, J. Antibiot., B-6, 178-181, 1953.
 106. The estimation of dihydrostreptomycin in the mixture of penicillin and dihydrostreptomycin. (in Japanese): S. Yamazaki, M. Nogi and H. Umezawa, J. Antibiot., B-6, 312-314, 1953.
 107. Thiozolidone antibiotic as an antimetabolite to biotin.: H. Umezawa, K. Oikawa, Y. Okami and K. Maeda, J. Bacteriol., 66, 118-119, 1953.
 108. Cylinder plate assay and some studies of isonicotinic acid hydrazide with M. tuberculosis 607.: H. Umezawa, K. Oikawa and M. Suzuki, Jap. J. Med. Sci. Biol., 6, 11-15, 1953.
 109. On Streptomyces cinnamonensis n. sp., the source of an antitubercular antibiotic of low toxicity.: Y. Okami, K. Maeda, H. Kosaka, O. Taya and H. Umezawa, Jap. J. Med. Sci. Biol., 6, 87-90, 1953.
 110. Studies on the intermediate metabolism of chloramphenicol production. II. On the carbohydrate metabolism of Streptomyces venezuelae.: M. Matsuoka, K. Yagishita and H. Umezawa, Jap. J. Med. Sci. Biol., 6, 161-169, 1953.
 111. On screening of antiviral substances produced by streptomycetes and on an antiviral substance achromoviomycin.: H. Umezawa, T. Takeuchi, Y. Okami, K. Oikawa and T. Tazaki, Jap. J. Med. Sci. Biol., 6, 261-268, 1953.
 112. Anti-biotin activity of thiazolidone antibiotic.: H. Umezawa, K. Oikawa, K. Maeda and Y. Okami, Jap. J. Med. Sci. Biol., 6, 395-403, 1953.
 113. The existence of griseolutein A and B.: T. Osato, K. Maeda and H. Umezawa, J. Antibiot., A-7, 15-16, 1954.
 114. Studies on the antibiotic actinomycetes. VII. Azomycin-producing strain resembling Nocardia

- mesenterica.: Y. Okami, K. Maeda and H. Umezawa, J. Antibiot., A-7, 53-54, 1954.
115. Studies on the antibiotic actinomycetes. VIII. On Streptomyces albidofuscus Okami et Umezawa nov. sp. producing a new antibiotic pyridomycin.: Y. Okami, K. Maeda and H. Umezawa, J. Antibiot., A-7, 55-56, 1954.
116. A new antifungal substance of streptomycetes, seligocidin.: S. Nakamura, K. Maeda, Y. Okami and H. Umezawa, J. Antibiot., A-7, 57, 1954.
117. Chemical studies on a toxic product of Streptomyces thioluteus, aureothin.: F. Washizu, H. Umezawa and N. Sugiyama, J. Antibiot., A-7, 60, 1954.
118. Studies on the antibiotic actinomycetes. IX. On streptomycetes producing a new antifungal substance mediocidin and antifungal substances of fungicidin-rimocidin-chromin group, eurocidin group and trichomycin-ascosin-candidicin group.: Y. Okami, R. Utahara, S. Nakamura and H. Umezawa, J. Antibiot., A-7, 98-103, 1954.
119. On a new antifungal substance, mediocidin, other antifungal substances of streptomycetes with three characteristic adsorption maxima.: R. Utahara, Y. Okami, S. Nakamura and H. Umezawa, J. Antibiot., A-7, 120-124, 1954.
120. A new toxic substance, actinoleukin, produced by a streptomycete.: M. Ueda, Y. Tanigawa, Y. Okami and H. Umezawa, J. Antibiot., A-7, 125-126, 1954.
121. Sarkomycin, an anti-cancer substance produced by Streptomyces.: H. Umezawa, T. Yamamoto, T. Takeuchi, T. Osato, Y. Okami, S. Yamaoka, T. Okuda, K. Nitta, K. Yagishita, R. Utahara and S. Umezawa, Antibiot. Chemother., 4, 514-520, 1954.
122. Structure of azomycin (2-nitroimidazole).: S. Nakamura and H. Umezawa, J. Antibiot., A-8, 66, 1955.
123. Production of tertiomycin (a new antibiotic substance) azomycin and eurocidin by S. eurocidicus.: T. Osato, M. Ueda, S. Fukuyama, K. Yagishita, Y. Okami and H. Umezawa, J. Antibiot., A-8, 105-109, 1955.
124. Effect of sarkomycin on experimental animal tumors.: T. Takeuchi, K. Nitta, T. Yamamoto and H. Umezawa, J. Antibiot., A-8, 110-117, 1955.
125. Studies on the effects of actinomycin, cyclohexamide, and other known antibiotics on Ehrlich carcinoma of mice.: K. Nitta, T. Takeuchi, T. Yamamoto and H. Umezawa, J. Antibiot., A-8, 120-125, 1955.
126. The screening of anti-toxoplasmic substance produced by streptomycete and anti-toxoplasmic substance No. 534.: Y. Okami, R. Utahara, H. Oyagi, S. Nakamura and H. Umezawa, J. Antibiot., A-8, 126-131, 1955.
127. A new antibiotic, ractinomycin.: R. Utahara, H. Oyagi, K. Yagishita, Y. Okami and H. Umezawa, J. Antibiot., A-8, 132-135, 1955.
128. On tertiomycin B produced by Streptomyces eurocidicus.: T. Osato, K. Yagishita and H. Umezawa, J. Antibiot., A-8, 161-163, 1955.
129. Antibiotics produced by Nocardia mesenterica and a new antibiotic, mesenterin.: M. Ueda and H. Umezawa, J. Antibiot., A-8, 164-167, 1955.
130. Antitumor substances of actinomycetes. Screening grouping of antitumor substances of actinomycetes—sarkomycin-pluramycin.: H. Umezawa, Giornale di Microbiologia, 2, 160-193, 1956.
131. Antitumor effect of pluramycin crude powder of Ehrlich carcinoma of mice.: T. Takeuchi, K. Nitta and H. Umezawa, J. Antibiot., A-9, 22-30, 1956.
132. A new antitumor substance, pluramycin. Studies on antitumor substances produced by actinomycetes XI.: K. Maeda, T. Takeuchi, K. Nitta, K. Yagishita, R. Utahara, T. Osato, M. Ueda, S. Kondo, Y. Okami and H. Umezawa, J. Antibiot., A-9, 75-81, 1956.

133. A new antibiotic, phleomycin.: K. Maeda, H. Kosaka, K. Yagishita and H. Umezawa, J. Antibiot., A-9, 82-85, 1956.
134. Observation on simultaneous production of actinoleukin and trichomycin group antibiotic by a streptomycetes.: M. Ueda and H. Umezawa, J. Antibiot., A-9, 86-87, 1956.
135. On the simultaneous production of an actinomycin and an eurocidin group antibiotic.: K. Maeda, K. Ooi, H. Kosaka, E. L. Wang and H. Umezawa, J. Antibiot., A-9, 125-127, 1956.
136. Cylinder plate method of testing the anti-cell effect. Studies on antitumor substances produced by actinomycetes. XII.: S. Yamazaki, K. Nitta, T. Hikiji, M. Nogi, T. Takeuchi, T. Yamamoto and H. Umezawa, J. Antibiot., A-9, 135-140, 1956.
137. Blastmycin, a new antibiotic from streptomycetes sp.: K. Watanabe, T. Tanaka, K. Fukuhara, N. Miyairi, H. Yonehara and H. Umezawa, J. Antibiot., A-10, 39-45, 1957.
138. Method of determination of chlortetracycline and some studies on use of chlortetracycline for fish preservation.: S. Yamazaki, M. Nogi, S. Takahashi, H. Umezawa, N. Takatsuka, T. Tawara and K. Higashi, J. Antibiot., A-10, 87-93, 1957.
139. Biological studies on kanamycin.: T. Takeuchi, T. Hikiji, K. Nitta, S. Yamazaki, S. Abe, H. Takayama and H. Umezawa, J. Antibiot., A-10, 107-114, 1957.
140. Effect of pluramycin A on Ehrlich carcinoma of mice. Studies on antitumor substance produced by actinomycetes. XIII.: T. Takeuchi, T. Hikiji, K. Nitta and H. Umezawa, J. Antibiot., A-10, 143-152, 1957.
141. Changing the name of pyridomycin producing streptomycete.: H. Umezawa and Y. Okami, J. Antibiot., A-10, 172, 1957.
142. Production and isolation of a new antibiotic, kanamycin.: H. Umezawa, M. Ueda, K. Maeda, K. Yagishita, S. Kondo, Y. Okami, R. Utahara, Y. Osato, K. Nitta and T. Takeuchi, J. Antibiot., A-10, 181-188, 1957.
143. Raromycin, a new tumor-inhibitory antibiotic produced by a streptomycetes. I. Studies with Ehrlich carcinoma and Croker sarcoma 180 of mice.: N. Tanaka, M. Yamazaki, K. Okabe and H. Umezawa, J. Antibiot., A-10, 189-194, 1957.
144. A new antibiotic, althiomycin.: H. Yamaguchi, Y. Nakayama, K. Takeda, K. Tawara, K. Maeda, T. Takeuchi and H. Umezawa, J. Antibiot., A-10, 195-200, 1957.
145. Studies on kanamycin.: K. Maeda, M. Ueda, K. Yagishita, S. Kawaji, S. Kondo, M. Murase, T. Takeuchi, Y. Okami and H. Umezawa, J. Antibiot., A-10, 228-231, 1957.
146. Structural studies on griseolutein B, phenazine antibiotic.: S. Nakamura, K. Maeda, T. Osato and H. Umezawa, J. Antibiot., A-10, 265-266, 1957.
147. Studies on mikamycin. I.: M. Arai, K. Karasawa, S. Nakamura, H. Yonehara and H. Umezawa, J. Antibiot., A-11, 14-20, 1958.
148. Studies on mikamycin. II. Comparative studies of mikamycin with streptogramin and the antibiotic No. 899.: M. Arai, K. Okabe, H. Yonehara and H. Umezawa, J. Antibiot., A-11, 21-25, 1958.
149. A new antibiotic, alboverticillin.: K. Maeda, S. Kondo, K. Ohi, H. Kondo, E. L. Wang, Y. Osato and H. Umezawa, J. Antibiot., A-11, 30-31, 1958.
150. Degradation studies on kanamycin.: K. Maeda, M. Murase, H. Mawatari and H. Umezawa, J. Antibiot., A-11, 73-76, 1958.
151. Effects of antitumor substances on yeasts and their respiration deficient mutants.: Y. Okami, M. Suzuki and H. Umezawa, J. Antibiot., A-11, 87-89, 1958.
152. Biological studies on mikamycin.: N. Tanaka, N. Shinjo, N. Miyairi and H. Umezawa, J. Antibiot., A-11, 127-133, 1958.

153. Studies on actinoleukin, relation to echinomycin and levomycin.: S. Ishihara, R. Utahara, M. Suzuki, Y. Okami and H. Umezawa, J. Antibiot., A-11, 160-161, 1958.
154. Structure studies on kanamycin.: K. Maeda, M. Murase, H. Mawatari and H. Umezawa, J. Antibiot., A-11, 163-165, 1958.
155. Studies on chronic toxicity of kanamycin.: T. Takeuchi, T. Nomura, T. Wakazawa, T. Hikiji, S. Yamazaki, K. Nitta, Y. Shimizu, H. Takayama and H. Umezawa, J. Antibiot., A-11, 207-211, 1958.
156. Kanamycin: Its discovery.: H. Umezawa, Ann. N. Y. Acad. Sci., 76, 20-26, 1958.
157. On antitumor effect of sarkomycin-INH.: T. Takeuchi, T. Hikiji, K. Nitta, Y. Morikubo and H. Umezawa, J. Antibiot., A-11, 212-216, 1958.
158. Identity of latamicidin with abikoviromycin.: Y. Sakagami, R. Utahara, K. Yagishita and H. Umezawa, J. Antibiot., A-11, 231-232, 1958.
159. Unamycin.: H. Umezawa and H. Yamamoto, Asian Med. J., 2(3), 98, 1958.
160. Raromycin, a new tumor-inhibitory antibiotic produced by a streptomycetes. II. Taxonomic studies of the raromycin-producing organism.: N. Tanaka, K. Karasawa, N. Miyairi, N. Shinjo, T. Nishimura and H. Umezawa, J. Gen. Appl. Microbiol., 4, 259-271, 1958.
161. Assay of chlortetracycline in fish meal freezed by chlortetracycline-ice. (in Japanese): H. Umezawa and S. Yamazaki, Shokuhin Eisei Kenkyu, 8(4), 36, 1958.
162. Inhibition of the bacteriostatic effect of kanamycin by brain.: Y. Morikubo, S. Yamazaki, T. Takeuchi, T. Hikiji and H. Umezawa, J. Antibiot., A-12, 24-25, 1959.
163. Cross resistance reaction between streptomycin and kanamycin in E. coli and Mycobacterium 607.: Y. Morikubo, T. Takeuchi, S. Yamazaki, T. Hikiji and H. Umezawa, J. Antibiot., A-12, 28-29, 1959.
164. Structure of griseolutein A.: S. Nakamura, E. L. Wang, M. Murase, K. Maeda and H. Umezawa, J. Antibiot., A-12, 55-58, 1959.
165. A new source of fradycin-mycelin like antifungal antibiotic.: R. Utahara, H. Yamazaki, Y. Okami and H. Umezawa, J. Antibiot., A-12, 73-74, 1959.
166. A product of streptomycetes exhibiting strong inhibition against Ehrlich carcinoma cells in vitro.: M. Murase, S. Takahashi, T. Takeuchi, Y. Okami, T. Hikiji, K. Nitta, H. Mawatari and H. Umezawa, J. Antibiot., A-12, 75-80, 1959.
167. Studies on metabolism of chloramphenicol-producing streptomycetes with chlorine-36. E. L. Wang, M. Izawa, T. Miura and H. Umezawa, J. Antibiot., A-12, 81-85, 1959.
168. Mouse leukemia C 1498 and antitumor substances.: T. Hikiji, T. Takeuchi, K. Nitta and H. Umezawa, J. Antibiot., A-12, 107-108, 1959.
169. Variotin, a new antifungal antibiotic, produced by Paecilomyces varioti Bainier var. antibioticus.: H. Yonehara, S. Takeuchi, H. Umezawa and Y. Sumiki, J. Antibiot., A-12, 109-110, 1959.
170. Studies on phleomycin.: T. Takita, K. Maeda and H. Umezawa, J. Antibiot., A-12, 111, 1959.
171. Studies on mikamycin B.: K. Watanabe, H. Yonehara, N. Tanaka and H. Umezawa, J. Antibiot., A-12, 112-113, 1959.
172. Lower toxic derivatives of antibiotics. I. N-Methanesulfonate derivatives of kanamycin and neomycin.: S. Umezawa, Y. Ito, S. Fukatsu and H. Umezawa, J. Antibiot., A-12, 114-115, 1959.
173. Biological studies on kanamycin-di-N- and tetra-N-methanesulfonates and fradiomycin(neomycin)-N-methanesulfonate.: H. Umezawa, T. Takeuchi, S. Yamazaki, K. Nitta, T. Osawa and S. Umezawa, J. Antibiot., A-12, 117-125, 1959.

174. Identification of an antibiotic produced by S. galbus n. sp. with streptomycin.: M. Murase, T. Takita, K. Ohi, H. Kondo, Y. Okami and H. Umezawa, J. Antibiot., A-12, 126-132, 1959.
175. Development of resistance and cross resistance relation between kanamycin and streptomycin.: Y. Morikubo, T. Takeuchi, M. Morita, T. Osawa and H. Umezawa, J. Antibiot., A-12, 177-178, 1959.
176. Alkaline hydrolysis of mikamycin A.: K. Okabe, H. Yonehara and H. Umezawa, J. Antibiot., A-12, 192-193, 1959.
177. Studies on variotin, a new antifungal antibiotic. I. Preparations and properties of variotin.: S. Takeuchi, H. Yonehara and H. Umezawa, J. Antibiot., A-12, 195-200, 1959.
178. Studies on Streptomyces kanamyceticus, producer of kanamycin.: Y. Okami, T. Tazaki, S. Katsumata, K. Honda, M. Suzuki and H. Umezawa, J. Antibiot., A-12, 252-256, 1959.
179. Streptomyces galbus nov. sp. and some remarks on Streptomyces producing streptomycin-group antibiotics.: Y. Okami, M. Suzuki, T. Takita, K. Ohi and H. Umezawa, J. Antibiot., A-12, 257-262, 1959.
180. Biological studies on mikamycin. II. Laboratory investigations of mikamycin A and mikamycin B.: N. Tanaka, N. Miyairi, K. Watanabe, N. Shinjo, T. Nishimura and H. Umezawa, J. Antibiot., A-12, 290-297, 1959.
181. Bacteriological and pharmacological studies on methanesulfonates of kanamycin and fradiomycin(neomycin).: H. Umezawa, S. Yamazaki, M. Murase, K. Nitta, T. Hikiji, T. Osawa and T. Takeuchi, J. Antibiot., A-12, 335-338, 1959.
182. Bacteriostatic effect and toxicity of kanamycin-tetra-N-methanesulfonate.: H. Umezawa, S. Yamazaki and T. Takeuchi, J. Antibiot., A-12, 339-340, 1959.
183. Paper chromatographic studies on methanesulfonates of kanamycin and fradiomycin(neomycin).: H. Umezawa, M. Murase and S. Yamazaki, J. Antibiot., A-12, 341-342, 1959.
184. Taxonomical studies of the streptomyces producing antimycin A-blastmycin group antibiotics.: K. Karasawa, N. Tanaka, H. Yonehara and H. Umezawa, J. Gen. Appl. Microbiol., 5, 13-20, 1959.
185. Screening studies of antiviral substances produced by actinomycetes and new antiviral substances, niromycins.: T. Osato, Y. Morikubo, S. Yamazaki, T. Hikiji, K. Yano, M. Kanao, T. Osono and H. Umezawa, J. Antibiot., A-13, 97-109, 1960.
186. Production and extraction of niromycin, antiviral antibiotics.: T. Osato, Y. Morikubo and H. Umezawa, J. Antibiot., A-13, 110-113, 1960.
187. Unamycin, an antifungal substance produced by Streptomyces fungicidicus.: M. Matsuoka and H. Umezawa, J. Antibiot., A-13, 114-120, 1960.
188. Studies on antagonists to angustmycins.: N. Tanaka, N. Miyairi and H. Umezawa, J. Antibiot., A-13, 265-269, 1960.
189. Chemistry of variotin.: S. Takeuchi, H. Yonehara, H. Umezawa and Y. Sumiki, J. Antibiot., A-13, 289-290, 1960.
190. Constitutive amino acids of mikamycin B and a new amino acid as its one component.: K. Watanabe, H. Yonehara, H. Umezawa and Y. Sumiki, J. Antibiot., A-13, 291-292, 1960.
191. Structure of mikamycin B.: K. Watanabe, H. Yonehara, H. Umezawa and Y. Sumiki, J. Antibiot., A-13, 293-294, 1960.
192. Kanamycin and other water-soluble basic antibiotics.: H. Umezawa, Ann. Rep. Jap. Soc. Tuberc., No. 5, 1-11, 1960.
193. Studies on antitumor substances of microbial origin.: H. Umezawa, Cancer Chemother. Rep., No. 13, July, 1961.

194. Structure of amdinomycin.: S. Nakamura, K. Karasawa, N. Tanaka, H. Yonehara and H. Umezawa, J. Antibiot., A-13, 362-365, 1960.
195. On a new antibiotic, emimycin.: M. Terao, K. Karasawa, N. Tanaka, H. Yonehara and H. Umezawa, J. Antibiot., A-13, 401-405, 1960.
196. Activity of mikamycins, angustmycins and emimycin against antibiotic-resistant staphylococci.: N. Tanaka, N. Miyairi, T. Nishimura and H. Umezawa, J. Antibiot., A-14, 18-22, 1961.
197. Differential bioassay of angustmycins A and C.: N. Tanaka, N. Miyairi and H. Umezawa, J. Antibiot., A-14, 23-26, 1961.
198. Antitumor activities of synthetic compounds structurally related to sarkomycin.: T. Takeuchi, K. Nitta, T. Hikiji, M. Kinoshita and H. Umezawa, J. Antibiot., A-14, 54-59, 1961.
199. Mechanism of action of mikamycin.: N. Tanaka, H. Yamaguchi and H. Umezawa, J. Antibiot., A-14, 60, 1961.
200. Activity of angustmycins against experimental infections and transplantable tumors.: N. Tanaka, T. Nishimura, H. Yamaguchi and H. Umezawa, J. Antibiot., A-14, 98-102, 1961.
201. A new antibiotic, amidinomycin [N-(2'-amidinoethyl)-3-aminocyclopentanecarboxamide] produced by a Streptomyces.: S. Nakamura, K. Karasawa, H. Yonehara, N. Tanaka and H. Umezawa, J. Antibiot., A-14, 103-106, 1961.
202. Identity of an anti-HeLa cell substance produced by Aspergillus terreus with terreic acid.: S. Takahashi, K. Nitta, Y. Okami and H. Umezawa, J. Antibiot., A-14, 107, 1961.
203. Phenazine compounds produced by S. griseoluteus.: S. Nakamura, K. Yagishita and H. Umezawa, J. Antibiot., A-14, 108-110, 1961.
204. Peptimycin, a product of streptomyces exhibiting apparent inhibition against Ehrlich carcinoma.: M. Murase, T. Hikiji, K. Nitta, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., A-14, 113-118, 1961.
205. Effect of angustmycin A on incorporation of ^{32}P and ^{14}C -amino acids.: N. Miyairi, N. Tanaka and H. Umezawa, J. Antibiot., A-14, 119-122, 1961.
206. Activity of cytomycin and blastidicin S against transplantable animal tumors.: N. Tanaka, Y. Sakagami, T. Nishimura, H. Yamaki and H. Umezawa, J. Antibiot., A-14, 123-126, 1961.
207. Bacimethrin, a new antibiotic produced by B. megatherium.: F. Tanaka, S. Takeuchi, N. Tanaka, H. Yonehara, H. Umezawa and Y. Sumiki, J. Antibiot., A-14, 161-162, 1961.
208. Identity of amidinomycin with myxoviomycin.: S. Nakamura, H. Umezawa and N. Ishida, J. Antibiot., A-14, 163-164, 1961.
209. Test methods for antitumor substances.: H. Umezawa, Sci. Rep. Ist. Super. Sanità, 1, 427-438, 1961.
210. Biological studies on mikamycin. III. Influence of blood on the activity and further investigations on the activity against experimental infections.: N. Tanaka, H. Yamaki, H. Yamaguchi and H. Umezawa, J. Antibiot., A-15, 28-32, 1962.
211. Biological studies on mikamycin. IV. Blood and tissue levels of tritiated mikamycins A and B.: N. Tanaka, H. Yamaguchi and H. Umezawa, J. Antibiot., A-15, 33-37, 1962.
212. New antibiotics, ilamycins.: T. Takita, K. Ohi, Y. Okami, K. Maeda and H. Umezawa, J. Antibiot., A-15, 46-48, 1962.
213. Studies on ilamycins.: T. Takita and H. Umezawa, J. Antibiot., A-15, 49-50, 1962.
214. Production of 3-carboxy-2,4-pentadienal lactol by a streptomyces and its antitumor activity.: E. Akita, Y. Okami, M. Suzuki, K. Maeda, T. Takeuchi and H. Umezawa, J. Antibiot., A-15, 130-136, 1962.

215. Pyrimidine compounds reducing toxicity of a streptothricin.: H. Ogawara, T. Takeuchi and H. Umezawa, J. Antibiot., A-15, 137-140, 1962.
216. A new antibiotic, griseococcin.: T. Takeuchi, K. Maeda, T. Miura, T. Oda, Y. Okami and H. Umezawa, J. Antibiot., A-15, 141-146, 1962.
217. A streptomyces producing O-carbamoyl-D-serine.: Y. Okami, K. Maeda, H. Kondo, T. Tanaka and H. Umezawa, J. Antibiot., A-15, 147-151, 1962.
218. Biogenesis of C₁₃-hydroxy acid moiety of variotin.: N. Tanaka and H. Umezawa, J. Antibiot., A-15, 189-190, 1962.
219. Studies on bacimethrin, a new antibiotic from B. megatherium. I. Preparations and its properties.: F. Tanaka, N. Tanaka, H. Yonehara and H. Umezawa, J. Antibiot., A-15, 191-196, 1962.
220. Inhibition of protein synthesis by kanamycin.: T. Nishimura, N. Tanaka and H. Umezawa, J. Antibiot., A-15, 210-215, 1962.
221. Enhancement of bacteriostatic activity of an antibiotic, No. A-418-Z4 and ferrimycin A by human serum.: K. Maeda, H. Kondo and H. Umezawa, J. Antibiot., A-15, 227, 1962.
222. Biogenesis of the γ -aminobutyric acid moiety of variotin.: N. Tanaka, K. Sashikata and H. Umezawa, J. Antibiot., A-15, 228-229, 1962.
223. Studies on antitumor effect of phleomycin.: H. Umezawa, M. Hori, M. Ishizuka and T. Takeuchi, J. Antibiot., A-15, 274-275, 1962.
224. Antitumor substances produced by microorganisms.: H. Umezawa, Antibiotiki, 7, 559, 1962.
225. Biogenesis of variotin. I. Incorporation of CH₃¹⁴CO₂H and ¹⁴CH₃CO₂H into variotin.: N. Tanaka and H. Umezawa, J. Gen. Appl. Microbiol., 8, 149-159, 1962.
226. Biogenesis of variotin. II. Incorporation of ¹⁴CH₃SCH₂CH₂CH(NH₂)CO₂H into variotin.: N. Tanaka and H. Umezawa, J. Gen. Appl. Microbiol., 8, 160-164, 1962.
227. Biogenesis of variotin. III. Incorporation of ¹⁴C-glutamic acid into variotin.: N. Tanaka, K. Sashikata and H. Umezawa, J. Gen. Appl. Microbiol., 8, 192-200, 1962.
228. Inhibitory effects of antitumor substances on growth and glycolysis of Yoshida rat sarcoma cells.: M. Hori, E. Ito, T. Takeuchi and H. Umezawa, J. Antibiot., A-16, 1-6, 1963.
229. Application of thin layer chromatography for separation and identification of antibiotics.: T. Ikekawa, F. Iwami, E. Akita and H. Umezawa, J. Antibiot., A-16, 56-57, 1963.
230. Mechanism of action of phleomycin. I. Selective inhibition of the DNA synthesis in E. coli and in HeLa cells.: N. Tanaka, H. Yamaguchi and H. Umezawa, J. Antibiot., A-16, 86-91, 1963.
231. Studies on enomycin, a new antitumor substance.: Y. Suhara, M. Ishizuka, H. Naganawa, M. Hori, M. Suzuki, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., A-16, 107-108, 1963.
232. Monazomycin, a new antibiotic produced by a Streptomyces.: K. Akasaki, K. Karasawa, M. Watanabe, H. Yonehara and H. Umezawa, J. Antibiot., A-16, 127-131, 1963.
233. Isolation and characterization of labilomycin, a new antibiotic.: E. Akita, K. Maeda and H. Umezawa, J. Antibiot., A-16, 147-151, 1963.
234. Taxonomical studies on a Streptomyces strain producing labilomycin.: Y. Okami, M. Suzuki and H. Umezawa, J. Antibiot., A-16, 152-154, 1963.
235. Inhibition of resistant dysentery bacilli by phleomycin.: T. Takeuchi, M. Ishizuka, Y. Yamazaki and H. Umezawa, J. Antibiot., A-16, 172, 1963.
236. Mechanism of action of O-carbamyl-D-serine.: N. Tanaka, K. Sashikata, T. Wada, S. Sugawara and H. Umezawa, J. Antibiot., A-16, 217-221, 1963.
237. Mechanism of action of phleomycin, a tumor-inhibitory antibiotic.: N. Tanaka, H. Yamaguchi and H. Umezawa, Biochem. Biophys. Res. Commun., 10, 171-174, 1963.

238. Synergism of D-4-amino-3-isoxazolidone and O-carbamyl-D-serine.: N. Tanaka and H. Umezawa, J. Antibiot., A-17, 8-10, 1964.
239. The structure of griseolutein B.: S. Nakamura, K. Maeda and H. Umezawa, J. Antibiot., A-17, 33-36, 1964.
240. Structure of labilose, a methanolysis product of labilomycin.: E. Akita, K. Maeda and H. Umezawa, J. Antibiot., A-17, 37-38, 1964.
241. A new amino acid from ilamycin B₁ and the structure of ilamycin B₁.: T. Takita, H. Naganawa, K. Maeda and H. Umezawa, J. Antibiot., A-17, 90-91, 1964.
242. A new antibiotic, formycin.: M. Hori, E. Ito, T. Takita, G. Koyama, T. Takeuchi and H. Umezawa, J. Antibiot., A-17, 96-99, 1964.
243. Antitumor activities of formycin and labilomycin.: M. Ishizuka, T. Takeuchi, K. Nitta, G. Koyama, M. Hori and H. Umezawa, J. Antibiot., A-17, 124-126, 1964.
244. The structures of ilamycin and ilamycin B₂.: T. Takita, H. Naganawa, K. Maeda and H. Umezawa, J. Antibiot., A-17, 129-131, 1964.
245. Separation of phleomycin components and their properties.: T. Ikekawa, F. Iwami, H. Hiranaka and H. Umezawa, J. Antibiot., A-17, 194-199, 1964.
246. Chemistry of labilomycin.: E. Akita, K. Maeda and H. Umezawa, J. Antibiot., A-17, 200-215, 1964.
247. On the structure of netropsin.: S. Nakamura, H. Yonehara and H. Umezawa, J. Antibiot., A-17, 220-221, 1964.
248. Selective toxicity of kanamycin and streptomycin.: T. Nishimura, N. Tanaka and H. Umezawa, J. Antibiot., A-17, 238-245, 1964.
249. Further studies on the tryptophan-parts of ilamycins.: T. Takita, H. Naganawa, K. Maeda and H. Umezawa, J. Antibiot., A-17, 264-265, 1964.
250. Activity of ribosomes from kanamycin-resistant *E. coli*.: N. Tanaka, K. Sashikata, T. Nishimura and H. Umezawa, Biochem. Biophys. Res. Commun., 16, 216-220, 1964.
251. Isolation and characterization of bottromycins A and B.: S. Nakamura, T. Chikaike, K. Karasawa, N. Tanaka, H. Yonehara and H. Umezawa, J. Antibiot., A-18, 47-52, 1965.
252. Structures of bottromycins A and B.: S. Nakamura, T. Chikaike, K. Karasawa, N. Tanaka, H. Yonehara and H. Umezawa, J. Antibiot., A-18, 60-61, 1965.
253. A new antibiotic, kasugamycin.: H. Umezawa, Y. Okami, T. Hashimoto, Y. Suhara, M. Hamada and T. Takeuchi, J. Antibiot., A-18, 101-103, 1965.
254. Antimicrobial activity of kasugamycin.: M. Hamada, T. Hashimoto, T. Takahashi, S. Yokoyama, M. Miyake, T. Takeuchi, Y. Okami and H. Umezawa, J. Antibiot., A-18, 104-106, 1965.
255. Pharmacology of kasugamycin and the effect on pseudomonas infection.: T. Takeuchi, M. Ishizuka, H. Takayama, K. Kureha, M. Hamada and H. Umezawa, J. Antibiot., A-18, 107-110, 1965.
256. Studies on the preventive effect of kasugamycin on rice blast.: T. Ishiyama, I. Hara, M. Matsuoka, K. Sato, S. Shimada, R. Izawa, T. Hashimoto, M. Hamada, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., A-18, 115-119, 1965.
257. The structural difference among ilamycin, ilamycin C₁ and ilamycin C₂.: T. Takita, H. Naganawa, K. Maeda and H. Umezawa, J. Antibiot., A-18, 135-136, 1965.
258. Mechanism of action of kasugamycin.: N. Tanaka, T. Nishimura, H. Yamaguchi, C. Yamamoto, Y. Yoshida, K. Sashikata and H. Umezawa, J. Antibiot., A-18, 139-144, 1965.
259. Formycin B and its relation to formycin.: G. Koyama and H. Umezawa, J. Antibiot., A-18, 175-177, 1965.

260. Transformation of formycin to formycin B and their biological activities.: H. Umezawa, T. Sawa, Y. Fukagawa, G. Koyama, M. Murase, M. Hamada and T. Takeuchi, J. Antibiot., A-18, 178-181, 1965.
261. Chemical studies on kasugamycin. I. Acid degradation.: Y. Suhara, K. Maeda and H. Umezawa, J. Antibiot., A-18, 182-183, 1965.
262. Chemical studies on kasugamycin. II. The structure of methylkasugaminide.: Y. Suhara, K. Maeda, H. Umezawa and M. Ohno, J. Antibiot., A-18, 184-186, 1965.
263. Chemical studies on kasugamycin. III. Structures of kasuganobiosamine and kasugamycinic acid.: Y. Suhara, K. Maeda and H. Umezawa, J. Antibiot., A-18, 187-190, 1965.
264. Deamination of purine antibiotics by adenosine deaminase.: Y. Fukagawa, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., A-18, 191, 1965.
265. Studies on formycin and formycin B phosphates.: T. Sawa, Y. Fukagawa, Y. Shimauchi, K. Ito, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., A-18, 259-266, 1965.
266. Chemical studies on kasugamycin. IV. Synthetic transformations of kasuganobiosamine to kasugamycinic acid, isokasugamycinic acid, and their amides.: Y. Suhara, K. Maeda, H. Umezawa and M. Ohno, J. Antibiot., A-18, 267-268, 1965.
267. Inhibition of RNA and DNA polymerase reactions by pluramycin A.: N. Tanaka, K. Nagai, H. Yamaguchi and H. Umezawa, Biochem. Biophys. Res. Commun., 21, 328-332, 1965.
268. Isolation, characterization and structural elucidation of new amino acids from bottromycin A.: S. Nakamura, T. Chikaike, H. Yonehara and H. Umezawa, Chem. Pharm. Bull., 13, 599-602, 1965.
269. An antibiotic, plurallin, consisting of a pluramycin-like prosthetic group and a glycoprotein.: H. Ogawara, K. Maeda, K. Nitta, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., A-19, 1-9, 1966.
270. Bottromycin A₁, A₂ and their structures.: S. Nakamura, N. Tanaka and H. Umezawa, J. Antibiot., A-19, 10-12, 1966.
271. The structure of kasugamycin hydrobromide by X-ray crystallographic analysis.: T. Ikekawa, H. Umezawa and Y. Iitaka, J. Antibiot., A-19, 49-50, 1966.
272. Inhibition of polypeptide synthesis by kasugamycin, an aminoglycosidic antibiotic.: N. Tanaka, Y. Yoshida, K. Sashikata, H. Yamaguchi and H. Umezawa, J. Antibiot., A-19, 65-68, 1966.
273. The studies on the degradation products of formycin and formycin B.: K. Kawamura, S. Fukatsu, M. Murase, G. Koyama, K. Maeda and H. Umezawa, J. Antibiot., A-19, 91-92, 1966.
274. The studies on the chemical derivations of formycin and formycin B.: S. Watanabe, G. Matsuhashi, S. Fukatsu, G. Koyama, K. Maeda and H. Umezawa, J. Antibiot., A-19, 93-96, 1966.
275. Mode of action of enomycin, an antitumor antibiotic of high molecular weight.: S. Mizuno, K. Nitta and H. Umezawa, J. Antibiot., A-19, 97-98, 1966.
276. Pluramycin complex with human serum albumin and the antitumor activity.: H. Ogawara, K. Maeda and H. Umezawa, J. Antibiot., A-19, 141-148, 1966.
277. Biological studies on bottromycin A and its hydrazide.: N. Tanaka, T. Nishimura, S. Nakamura and H. Umezawa, J. Antibiot., A-19, 149-154, 1966.
278. Degradation studies on danomycin.: H. Ogawara, K. Maeda and H. Umezawa, J. Antibiot., A-19, 190-193, 1966.
279. New antibiotics, bleomycin A and B.: H. Umezawa, K. Maeda, T. Takeuchi and Y. Okami, J. Antibiot., A-19, 200-209, 1966.
280. Purification of bleomycins.: H. Umezawa, Y. Suhara, T. Takita and K. Maeda, J. Antibiot.,

- A-19, 210-215, 1966.
281. A new antibiotic, spinamycin.: E. L. Wnag, M. Hamada, Y. Okami and H. Umezawa, J. Antibiot., A-19, 216-221, 1966.
 282. Studies on antitumor activity, antimicrobial activity, and toxicity of phleomycin.: M. Ishizuka, H. Takayama, T. Takeuchi and H. Umezawa, J. Antibiot., A-19, 260-271, 1966.
 283. Biochemical method of screening of microbial products exhibiting antitumor activity.: K. Nitta, S. Mizuno and H. Umezawa, J. Antibiot., A-19, 282-284, 1966.
 284. Antiviral effect of formycin and formycin B.: T. Takeuchi, J. Iwanaga, T. Aoyagi and H. Umezawa, J. Antibiot., A-19, 286-287, 1966.
 285. Kasugamycin, a new antibiotic.: H. Umezawa, M. Hamada, Y. Suhara, T. Hashimoto, T. Ikekawa, N. Tanaka, K. Maeda, Y. Okami and T. Takeuchi, Antimicrob. Agents Chemother.-1965, 753-757, 1966.
 286. Bleomycin and other antitumor antibiotics of high molecular weight.: H. Umezawa, Antimicrob. Agents Chemother.-1965, 1079-1085, 1966.
 287. The structure of bottromycin A₂, a new component of bottromycins.: S. Nakamura and H. Umezawa, Chem. Pharm. Bull., 14, 981-986, 1966.
 288. Inhibition of protein synthesis by bottromycin A₂ and its hydrazide.: N. Tanaka, K. Sashikata, H. Yamaguchi and H. Umezawa, J. Biochem., 60, 405-410, 1966.
 289. Mechanism of kasugamycin action on polypeptide synthesis.: N. Tanaka, H. Yamaguchi and H. Umezawa, J. Biochem., 60, 429-434, 1966.
 290. A new antibiotic kasugamycin. (in Chinese): H. Umezawa, J. Chinese Agric. Chem. Soc., 4, A1-8, 1966.
 291. The structural studies of formycin and formycin B.: G. Koyama, K. Maeda and H. Umezawa, Tetrahedron Lett., 1966, 597-602.
 292. Chemical studies on kasugamycin. V. The structure of kasugamycin.: Y. Suhara, K. Maeda, H. Umezawa and M. Ohno, Tetrahedron Lett., 1966, 1239-1244.
 293. Isolation and characterization of bottromycins A₂, B₂, C₂.: S. Nakamura, T. Yajima, Y. C. Lin and H. Umezawa, J. Antibiot., A-20, 1-5, 1967.
 294. Activity and toxicity of bleomycin.: M. Ishizuka, H. Takayama, T. Takeuchi and H. Umezawa, J. Antibiot., A-20, 15-24, 1967.
 295. Effects of biopolymers and magnesium on the mikamycins inhibition of polyphenylalanine synthesis and the synergistic action of mikamycins A and B.: H. Yamaguchi, N. Tanaka and H. Umezawa, J. Antibiot., A-20, 41-48, 1967.
 296. Antibiotic-sensitivity of ribosomes from kanamycin-resistant E. coli.: N. Tanaka, K. Sashikata and H. Umezawa, J. Antibiot., A-20, 115-119, 1967.
 297. Studies on inactivation of kanamycin and resistances of E. coli.: M. Okanishi, S. Kondo, Y. Suzuki, S. Okamoto and H. Umezawa, J. Antibiot., A-20, 132-135, 1967.
 298. Isolation and structure of kanamycin inactivated by a cell free system of kanamycin-resistant E. coli.: H. Umezawa, M. Okanishi, R. Utahara, K. Maeda and S. Kondo, J. Antibiot., A-20, 136-141, 1967.
 299. Biological studies on bleomycin A.: T. Ichikawa, A. Matsuda, K. Yamamoto, M. Tsubosaki, T. Kaihara, K. Sakamoto and H. Umezawa, J. Antibiot., A-20, 149-155, 1967.
 300. Further studies on inhibition of protein synthesis by fusidic and helvolinic acids.: N. Tanaka, H. Yamaki, Y. C. Lin and H. Umezawa, J. Antibiot., A-20, 156-161, 1967.
 301. Derivatives of bottromycin A₂ and their biological activity.: S. Nakamura, S. Omura, T. Nishimura, N. Tanaka and H. Umezawa, J. Antibiot., A-20, 162-166, 1967.

302. A new antibiotic, josamycin. I. Isolation and physico-chemical characteristics.: T. Osono, Y. Oka, S. Watanabe, Y. Numazaki, K. Moriyama, H. Ishida, K. Suzuki, Y. Okami and H. Umezawa, J. Antibiot., A-20, 174-180, 1967.
303. A new antibiotic, leucinamycin.: K. Mizuno, Y. Ohkubo, S. Yokoyama, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., A-20, 194-199, 1967.
304. A new antitumor antibiotic, phenomycin.: S. Nakamura, T. Yajima, M. Hamada, T. Nishimura, M. Ishizuka, T. Takeuchi, N. Tanaka and H. Umezawa, J. Antibiot., A-20, 210-216, 1967.
305. Application of mutation of T2 phage from h^+ to h to screening of antitumor antibiotics produced by actinomycetes.: S. Nakamura, S. Omura, M. Hamada, T. Nishimura, H. Yamaki, N. Tanaka, Y. Okami and H. Umezawa, J. Antibiot., A-20, 217-222, 1967.
306. Botromycin action on macromolecular biosynthesis.: Y. C. Lin, N. Tanaka and H. Umezawa, J. Antibiot., A-20, 223-226, 1967.
307. Mode of inhibition of coformycin on adenosine deaminase.: T. Sawa, Y. Fukagawa, I. Homma, T. Takeuchi and H. Umezawa, J. Antibiot., A-20, 227-231, 1967.
308. Screening of antimycoplasma antibiotics.: S. Omura, Y. C. Lin, T. Yajima, S. Nakamura, N. Tanaka, H. Umezawa, S. Yokoyama, Y. Homma and M. Hamada, J. Antibiot., A-20, 241-245, 1967.
309. Modes of action of phleomycin, bleomycin and formycin on HeLa S3 cells in synchronized culture.: T. Kunitomo, M. Hori and H. Umezawa, J. Antibiot., A-20, 277-281, 1967.
310. Antiviral effect of formycin derivatives.: T. Takeuchi, J. Iwanaga, T. Aoyagi, M. Murase, T. Sawa and H. Umezawa, J. Antibiot., A-20, 297-298, 1967.
311. Studies on formycin and formycin B in cells of Ehrlich carcinoma and E. coli.: H. Umezawa, T. Sawa, Y. Fukagawa, I. Homma, M. Ishizuka and T. Takeuchi, J. Antibiot., A-20, 308-316, 1967.
312. Formycin-deaminating activity of microorganisms.: T. Sawa, Y. Fukagawa, I. Homma, T. Takeuchi and H. Umezawa, J. Antibiot., A-20, 317-321, 1967.
313. Miscoding activities of biologically inactivated kanamycins.: M. Hori and H. Umezawa, J. Antibiot., A-20, 386-387, 1967.
314. Structural basis of kanamycin for miscoding activity.: N. Tanaka, H. Masukawa and H. Umezawa, Biochem. Biophys. Res. Commun., 26, 544-549, 1967.
315. Studies on bleomycin.: H. Umezawa, M. Ishizuka, K. Maeda and T. Takeuchi, Cancer, 20, 891-895, 1967.
316. Isolation and identification of the antifungal active substance in walnuts.: T. Ikekawa, E. L. Wang, M. Hamada, T. Takeuchi and H. Umezawa, Chem. Pharm. Bull., 15, 242-245, 1967.
317. Inactivation of kanamycin by E. coli carrying R factor and structures of the inactivated forms.: H. Umezawa, M. Okanishi and S. Kondo, 5th International Congress of Chemotherapy, Vienna, 57-59, 1967.
318. Clinical study of a new antitumor antibiotic bleomycin.: T. Ichikawa, K. Matsumoto and H. Umezawa, 5th International Congress of Chemotherapy, Vienna, 507-516, 1967.
319. Mode of action of enomycin, an antitumor antibiotic of high molecular weight. I. Inhibition of protein synthesis.: S. Mizuno, K. Nitta and H. Umezawa, J. Biochem., 61, 373-381, 1967.
320. Mode of action of enomycin, an antitumor antibiotic of high molecular weight. II. Preferential binding of enomycin to mammalian ribosomes.: S. Mizuno, K. Nitta and H. Umezawa, J. Biochem., 61, 382-387, 1967.
321. Kasugamycin in pseudomonas infections of the urinary tract.: T. Ichikawa and H. Umezawa, J. Urology, 97, 917-925, 1967.
322. Phosphorylative inactivation of aminoglycosidic antibiotics by Escherichia coli carrying R

- factor.: H. Umezawa, M. Okanishi, S. Kondo, K. Hamana, R. Utahara, K. Maeda and S. Mitsuhashi, Science, 157, 1559-1561, 1967.
323. The structure of pyridomycin.: G. Koyama, Y. Iitaka, K. Maeda and H. Umezawa, Tetrahedron Lett., 1967, 3587-3590.
324. Metabolism of formycin and formycin B in vivo.: M. Ishizuka, T. Sawa, G. Koyama, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 1-4, 1968.
325. Biological studies on formycin and formycin B.: M. Ishizuka, T. Sawa, S. Hori, H. Takayama, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 5-12, 1968.
326. Phosphorylation and inactivation of aminoglycosidic antibiotics by E. coli carrying R factor.: M. Okanishi, S. Kondo, R. Utahara and H. Umezawa, J. Antibiot., 21, 13-21, 1968.
327. Isolation of kanamycin and paromamine inactivated by E. coli carrying R factor.: S. Kondo, M. Okanishi, R. Utahara, K. Maeda and H. Umezawa, J. Antibiot., 21, 22-29, 1968.
328. Ablastomycin, a new anti-piricularia antibiotic.: T. Hashimoto, M. Kito, T. Takeuchi, M. Hamada, K. Maeda, Y. Okami and H. Umezawa, J. Antibiot., 21, 37-43, 1968.
329. A new antibiotic, macromycin, exhibiting antitumor and antimicrobial activity.: H. Chimura, M. Ishizuka, M. Hamada, S. Hori, K. Kimura, J. Iwanaga, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 44-49, 1968.
330. Studies on biosynthesis of kasugamycin. I. Biosynthesis of kasugamycin and the kasugamine moiety.: Y. Fukagawa, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 50-54, 1968.
331. Laspartomycin, a new anti-staphylococcal peptide.: H. Naganawa, M. Hamada, K. Maeda, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 55-62, 1968.
332. Biochemical mechanism of action of substance B44P.: H. Yamazaki, S. Mizuno, K. Nitta, R. Utahara and H. Umezawa, J. Antibiot., 21, 63-65, 1968.
333. Inhibition of RNA polymerase of Escherichia coli by an antimicrobial substance B44P (Streptovaricin).: S. Mizuno, H. Yamazaki, K. Nitta and H. Umezawa, J. Antibiot., 21, 66-67, 1968.
334. Inhibition by kasugamycin of protein synthesis in Piricularia oryzae.: H. Masukawa, N. Tanaka and H. Umezawa, J. Antibiot., 21, 73-74, 1968.
335. Activity of bottromycin against Mycoplasma gallisepticum.: N. Tanaka, T. Nishimura, S. Nakamura and H. Umezawa, J. Antibiot., 21, 75-76, 1968.
336. Chemical studies on bleomycin. I. The acid hydrolysis products of bleomycin A₂.: T. Takita, Y. Muraoka, K. Maeda and H. Umezawa, J. Antibiot., 21, 79-80, 1968.
337. Adenylstreptomycin, a product of streptomycin inactivated by E. coli carrying R factor.: H. Umezawa, S. Takasawa, M. Okanishi and R. Utahara, J. Antibiot., 21, 81-82, 1968.
338. Studies on a new antibiotic pigment, aquayamycin.: M. Sezaki, T. Hara, S. Ayukawa, T. Takeuchi, Y. Okami, M. Hamada, T. Nagatsu and H. Umezawa, J. Antibiot., 21, 91-97, 1968.
339. Phosphorylation and inactivation of kanamycin by Pseudomonas aeruginosa.: H. Umezawa, O. Doi, M. Ogura, S. Kondo and N. Tanaka, J. Antibiot., 21, 154-155, 1968.
340. Biosynthesis of kasugamycin. II. Biosynthesis of the two-carbonside chain of kasugamycin.: Y. Fukagawa, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 182-184, 1968.
341. Studies on biosynthesis of kasugamycin. III. Biosynthesis of the D-inositol moiety.: Y. Fukagawa, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 185-188, 1968.
342. Studies on antimicrobial substance B44P (Streptovaricin) produced by a strain of actinomycetes. IV. Biochemical mechanism of action of substance B44P.: H. Yamazaki, S. Mizuno, K. Nitta, R. Utahara and H. Umezawa, J. Antibiot., 21, 227-233, 1968.
343. Inhibition of DNA-dependent RNA synthesis by rifamycins.: H. Umezawa, S. Mizuno, H. Yamazaki

- and K. Nitta, J. Antibiot., 21, 234-236, 1968.
344. The structure of spinamycin.: H. Naganawa, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 21, 241-242, 1968.
345. Biochemical effects of formycin B on Xanthomonas oryzae.: M. Hori, T. Wakashiro, E. Ito, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 264-271, 1968.
346. Synthesis of tetra-N-phenylalkylkanamycins and their antimicrobial activities.: A. Fujii, K. Maeda and H. Umezawa, J. Antibiot., 21, 340-349, 1968.
347. Inhibition of tyrosine hydroxylase by aquayamycin.: S. Ayukawa, T. Takeuchi, M. Sezaki, T. Hara and H. Umezawa, J. Antibiot., 21, 350-353, 1968.
348. Inhibition of dopamine β -hydroxylase by aquayamycin.: T. Nagatsu, S. Ayukawa and H. Umezawa, J. Antibiot., 21, 354-357, 1968.
349. Studies on biosynthesis of kasugamycin. IV. Biosynthesis of the kasugamine moiety from [1- 14 C]-glucosamine and [1,2 or 6- 14 C]-glucose.: Y. Fukagawa, T. Sawa, I. Homma, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 358-360, 1968.
350. Mechanism of action of bleomycin. Studies with the growing culture of bacterial and tumor cells.: H. Suzuki, K. Nagai, H. Yamaki, N. Tanaka and H. Umezawa, J. Antibiot., 21, 379-386, 1968.
351. Studies on biosynthesis of kasugamycin. V. Biosynthesis of the amidine group.: Y. Fukagawa, T. Sawa, I. Homma, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 410-412, 1968.
352. Studies on biosynthesis of kasugamycin. VI. Some relationships between the incorporation of 14 C-compounds and the production of kasugamycin.: T. Sawa, Y. Fukagawa, I. Homma, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 413-420, 1968.
353. Peptiomycin, a new peptide antibiotic mixture.: K. Mizuno, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 21, 429-431, 1968.
354. Acrylamidine, an anti-fungal substance produced by a streptomyces.: K. Yagishita, R. Utahara, K. Maeda, M. Hamada and H. Umezawa, J. Antibiot., 21, 444-450, 1968.
355. Isolation of paromamine inactivated by Pseudomonas aeruginosa.: K. Maeda, S. Kondo, M. Okanishi, R. Utahara and H. Umezawa, J. Antibiot., 21, 458-459, 1968.
356. Studies on adenylstreptomycin, a product of streptomycin inactivation by E. coli carrying the R-factor.: S. Takasawa, R. Utahara, M. Okanishi, K. Maeda and H. Umezawa, J. Antibiot., 21, 477-484, 1968.
357. Studies on biosynthesis of 3-amino-3-deoxy-D-glucose.: S. Umezawa, S. Shibahara, S. Omoto, T. Takeuchi and H. Umezawa, J. Antibiot., 21, 485-491, 1968.
358. Localization of kanamycin sensitivity in the 23S core of 30S ribosomes of E. coli.: H. Masukawa, N. Tanaka and H. Umezawa, J. Antibiot., 21, 517-518, 1968.
359. Streptovaricin- and rifampicin-resistance of RNA polymerase in a resistant clone of Escherichia coli B.: K. Nitta, S. Mizuno, H. Yamazaki and H. Umezawa, J. Antibiot., 21, 521-522, 1968.
360. Amidinomycin from Streptomyces kasugaensis producing kasugamycin.: S. Takasawa, R. Utahara, Y. Osato, K. Maeda and H. Umezawa, J. Antibiot., 21, 567, 1968.
361. Effect of antibiotics on magnesium ion removal from E. coli ribosome suspensions.: J. Suzuki, M. Hori and H. Umezawa, J. Antibiot., 21, 571-573, 1968.
362. Biological studies on individual bleomycins.: H. Umezawa, M. Ishizuka, K. Kimura, J. Iwanaga and T. Takeuchi, J. Antibiot., 21, 592-602, 1968.
363. The distribution of 3 H-bleomycin in mouse tissue.: H. Umezawa, M. Ishizuka, S. Hori, H. Chimura, T. Takeuchi and T. Komai, J. Antibiot., 21, 638-642, 1968.

364. Oryzoxymycin, a new antibiotic.: T. Hashimoto, S. Kondo, T. Takita, M. Hamada, T. Takeuchi, Y. Okami and H. Umezawa, J. Antibiot., 21, 653-658, 1968.
365. Progress of fundamental studies on kanamycin. I. The structure and the biosynthesis.: H. Umezawa, Asian Medical J., 11, 69-77, 1968.
366. Progress of fundamental studies on kanamycin. II. Structure-activity relationship and mechanism of the resistance.: H. Umezawa, Asian Medical J., 11, 291-301, 1968.
367. Studies on the biosynthesis of kanamycins. I. Incorporation of ^{14}C -glucose or ^{14}C -glucosamine into kanamycins and kanamycin-related compounds.: M. Kojima, Y. Yamada and H. Umezawa, Agric. Biol. Chem., 32, 467-473, 1968.
368. Inactivation of kanamycin, neomycin and streptomycin by enzymes obtained in cells of Pseudomonas aeruginosa.: O. Doi, M. Ogura, N. Tanaka and H. Umezawa, Appl. Microbiol., 16, 1276-1281, 1968.
369. Inactivation and phosphorylation of kanamycin by drug-resistant Staphylococcus aureus.: O. Doi, M. Miyamoto, N. Tanaka and H. Umezawa, Appl. Microbiol., 16, 1282-1284, 1968.
370. The biosynthesis of pyridomycin. I.: H. Ogawara, K. Maeda and H. Umezawa, Biochemistry, 7, 3296-3302, 1968.
371. Inhibition of DNA-dependent RNA polymerase reaction of Escherichia coli by antimicrobial antibiotic, streptovaricin.: S. Mizuno, H. Yamazaki, K. Nitta and H. Umezawa, Biochim. Biophys. Acta, 157, 322-332, 1968.
372. Inhibition of initiation of DNA-dependent RNA synthesis by an antibiotic B44P.: S. Mizuno, H. Yamazaki, K. Nitta and H. Umezawa, Biochem. Biophys. Res. Commun., 30, 379-385, 1968.
373. The chemistry of pyridomycin.: H. Ogawara, K. Maeda, G. Koyama, H. Naganawa and H. Umezawa, Chem. Pharm. Bull., 16, 679-687, 1968.
374. A new inhibitor of RNA synthesis. (in Japanese): H. Umezawa, S. Mizuno, H. Yamazaki and K. Nitta, Igaku No Ayumi, 66, 625, 1968.
375. Kasugamycin.: Y. Suhara, K. Maeda, H. Umezawa and M. Ohno, "Advances in Chemistry Series, No. 74. Deoxy Sugars," Am. Chem. Soc. (1968), pp. 15-40.
376. The total synthesis of kasugamycin.: Y. Suhara, F. Sasaki, K. Maeda and H. Umezawa, J. Am. Chem. Soc., 90, 6559, 1968.
377. Mode of action of enomycin, an antitumor antibiotic of high molecular weight. III. On weak inhibition of polyphenylalanine synthesis directed by polyuridylic acid.: S. Mizuno, K. Nitta and H. Umezawa, J. Biochem., 63, 689-694, 1968.
378. Messenger RNA-associated 30S ribosomal subunit: Extraction from E. coli and the effect of chloramphenicol on the content.: M. Hori, J. Suzuki and H. Umezawa, J. Biochem., 64, 905-907, 1968.
379. Factors affecting infection of protoplasts with deoxyribonucleic acid of actinophage PK-66.: M. Okanishi, K. Hamana and H. Umezawa, J. Virol., 2, 686-691, 1968.
380. The crystal structure of kanamycin.: G. Koyama, Y. Iitaka, K. Maeda and H. Umezawa, Tetrahedron Lett., 1968, 1875-1879.
381. The chemistry of bleomycin. II. The molecular and crystal structure of a sulfur-containing chromophoric amino acid.: G. Koyama, H. Nakamura, Y. Muraoka, T. Takita, K. Maeda and H. Umezawa, Tetrahedron Lett., 1968, 4635-4638.
382. Biological assay method for kasugamycin. (in Japanese): M. Matsuoka, N. Hattori, T. Ishiyama, M. Hamada, T. Sawa, T. Takeuchi and H. Umezawa, Jap. J. Antibiot., 21, 49-54, 1968.
383. Symposium on mode of resistance and structure-activity.: H. Umezawa, Jap. J. Med. Sci. and Biol., 21, 215-227, 1968.

384. Characterization and active fragment of phenomycin, an antitumor polypeptide antibiotic.: T. Yajima, S. Nakamura and H. Umezawa, J. Antibiot., 22, 55-60, 1969.
385. The effect of fusidic acid on protein synthesis in a mammalian system.: N. Tanaka, T. Nishimura, T. Kinoshita and H. Umezawa, J. Antibiot., 22, 181-182, 1969.
386. A new antibiotic, gougeroxymycin.: E. L. Wang, N. Kanda and H. Umezawa, J. Antibiot., 22, 211-214, 1969.
387. Coriolin, a new basidiomycetes antibiotic.: T. Takeuchi, H. Inuma, J. Iwanaga, S. Takahashi, T. Takita and H. Umezawa, J. Antibiot., 22, 215-217, 1969.
388. Fusaric acid, a hypotensive agent produced by fungi.: H. Hidaka, T. Nagatsu, K. Takeya, T. Takeuchi, H. Suda, K. Kojiri, M. Matsuzaki and H. Umezawa, J. Antibiot., 22, 228-230, 1969.
389. Chemistry of bleomycin. III. The sugar moieties of bleomycin A2.: T. Takita, K. Maeda, H. Umezawa, S. Omoto and S. Umezawa. J. Antibiot., 22, 237-239, 1969.
390. Purification and properties of kanamycin-phosphorylating enzyme from *Pseudomonas aeruginosa*.: O. Doi, S. Kondo, N. Tanaka and H. Umezawa, J. Antibiot., 22, 273-282, 1969.
391. Leupeptins, new protease inhibitors from actinomycetes.: T. Aoyagi, T. Takeuchi, A. Matsuzaki, K. Kawamura, S. Kondo, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 22, 283-286, 1969.
392. Studies on a new pigment antibiotic, chrothiomycin.: S. Ayukawa, M. Hamada, K. Kojiri, T. Takeuchi, T. Hara, T. Nagatsu and H. Umezawa, J. Antibiot., 22, 303-308, 1969.
393. Effects of several tumor-inhibitory antibiotics on immunological responses.: H. Yamaki, N. Tanaka and H. Umezawa, J. Antibiot., 22, 315-321, 1969.
394. On the mechanism of action of bleomycin. Scission of DNA strands *in vitro* and *in vivo*.: H. Suzuki, K. Nagai, H. Yamaki, N. Tanaka and H. Umezawa, J. Antibiot., 22, 446-448, 1969.
395. Biological activities of leupeptins.: T. Aoyagi, S. Miyata, M. Nanbo, F. Kojima, M. Matsuzaki, M. Ishizuka, T. Takeuchi and H. Umezawa, J. Antibiot., 22, 558-568, 1969.
396. Decrease of melting temperature and single strand scission of DNA by bleomycin in the presence of 2-mercaptoethanol.: K. Nagai, H. Suzuki, N. Tanaka and H. Umezawa, J. Antibiot., 22, 569-573, 1969.
397. Decrease of melting temperature and single strand scission of DNA by bleomycin in the presence of hydrogen peroxide.: K. Nagai, H. Suzuki, N. Tanaka and H. Umezawa, J. Antibiot., 22, 624-628, 1969.
398. Application of high-voltage paper electrophoresis for separation and identification of antibiotics.: K. Maeda, A. Yagi, H. Naganawa, S. Kondo and H. Umezawa, J. Antibiot., 22, 635-636, 1969.
399. Studies on the biosynthesis of kanamycins. II. Incorporation of the radioactive degradation products of kanamycin A or related metabolites into kanamycin A.: M. Kojima, Y. Yamada and H. Umezawa, Agric. Biol. Chem., 33, 1181-1185, 1969.
400. The combined effects of bleomycin and sulfhydryl compounds on the thermal denaturation of DNA.: K. Nagai, H. Yamaki, H. Suzuki, N. Tanaka and H. Umezawa, Biochim. Biophys. Acta, 179, 165-171, 1969.
401. An anti-inflammatory proteinase, kinonase AI and AIII obtained from a *Streptomyces*.: S. Nakamura, Y. Marumoto, H. Yamaki, T. Nishimura, N. Tanaka, M. Hamada, M. Ishizuka, T. Takeuchi and H. Umezawa, Chem. Pharm. Bull., 17, 714-721, 1969.
402. Isolation and characterization of leupeptins produced by *Actinomycetes*.: S. Kondo, K. Kawamura, J. Iwanaga, M. Hamada, T. Aoyagi, K. Maeda, T. Takeuchi and H. Umezawa, Chem. Pharm.

- Bull., 17, 1896-1901, 1969.
403. Structures and syntheses of leupeptins Pr-LL and Ac-LL.: K. Kawamura, S. Kondo, K. Maeda and H. Umezawa, Chem. Pharm. Bull., 17, 1902-1909, 1969.
404. An anti-inflammatory proteinase, kinonase BI obtained from Streptomyces kinoluteus.: S. Nakamura, Y. Marumoto, H. Miyata, I. Tsukada, N. Tanaka, M. Ishizuka and H. Umezawa, Chem. Pharm. Bull., 17, 2044-2048, 1969.
405. Inhibition of dopamine β -hydroxylase by 5-alkylpicolinic acid and their hypotensive effects.: H. Suda, T. Takeuchi, T. Nagatsu, M. Matsuzaki, I. Matsumoto and H. Umezawa, Chem. Pharm. Bull., 17, 2377-2380, 1969.
406. The structure of coriolin, a new sesquiterpene antibiotic.: S. Takahashi, H. Inuma, T. Takita, K. Maeda and H. Umezawa, Tetrahedron Lett., 1969, 4663-4666.
407. A new antibiotic, dienomycin. I. Screening method, isolation and chemical studies.: S. Umezawa, T. Tsuchiya, K. Tatsuta, Y. Horiuchi, T. Usui, H. Umezawa, M. Hamada and A. Yagi, J. Antibiot., 23, 20-27, 1970.
408. Studies on dienomycin. II. Chemical structures of dienomycins A, B and C.: S. Umezawa, K. Tatsuta, Y. Horiuchi, T. Tsuchiya and H. Umezawa, J. Antibiot., 23, 28-34, 1970.
409. Possible control of formation of aerial mycelium and antibiotic production in Streptomyces by episomic factors.: M. Okanishi, T. Ohta and H. Umezawa, J. Antibiot., 23, 45-47, 1970.
410. Macarbomycin, a new antibiotic containing phosphorus.: S. Takahashi, M. Okanishi, R. Uthara, K. Nitta, K. Maeda and H. Umezawa, J. Antibiot., 23, 48-50, 1970.
411. Efficacy of bleomycin in the protection of rice sheath blight disease.: M. Shimura, T. Watanabe, T. Ohashi, T. Shomura, T. Niida, Y. Sekizawa and H. Umezawa, J. Antibiot., 23, 166-167, 1970.
412. A new antibiotic, negamycin.: M. Hamada, T. Takeuchi, S. Kondo, Y. Ikeda, H. Naganawa, K. Maeda, Y. Okami and H. Umezawa, J. Antibiot., 23, 170-171, 1970.
413. Chemistry of bleomycin. IV. The structure of amine component II of bleomycin A₂.: Y. Murooka, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 23, 252-253, 1970.
414. Pepstatin, a new pepsin inhibitor produced by actinomycetes.: H. Umezawa, T. Aoyagi, H. Morishima, M. Matsuzaki, M. Hamada and T. Takeuchi, J. Antibiot., 23, 259-262, 1970.
415. The structure of pepstatin.: H. Morishima, T. Takita, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 23, 263-265, 1970.
416. Studies on the mode of action of althiomycin.: H. Fujimoto, T. Kinoshita, H. Suzuki and H. Umezawa, J. Antibiot., 23, 271-275, 1970.
417. Binding of blastidicin S to ribosomes.: T. Kinoshita, N. Tanaka and H. Umezawa, J. Antibiot., 23, 288-290, 1970.
418. Lethal effect of bleomycin on cultured mammalian cells.: T. Terashima and H. Umezawa, J. Antibiot., 23, 300-304, 1970.
419. Preferential inhibition of the growth of Escherichia coli strains carrying episomes.: S. Mitsuhashi, S. Iyobe, H. Hashimoto and H. Umezawa, J. Antibiot., 23, 319-323, 1970.
420. Isolation and characterization of a new antibiotic, neopluramycin.: S. Kondo, T. Wakashiro, M. Hamada, K. Maeda, T. Takeuchi and H. Umezawa, J. Antibiot., 23, 354-359, 1970.
421. Deoxynebomycin from a Streptomyces.: H. Naganawa, T. Wakashiro, A. Yagi, S. Kondo, T. Takita, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 23, 365-368, 1970.
422. A novel fatty acid from laspartomycin.: H. Naganawa, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 23, 423-424, 1970.
423. Chymostatin, a new chymotrypsin inhibitor produced by actinomycetes.: H. Umezawa, T. Aoyagi,

- H. Morishima, S. Kunimoto, M. Matsuzaki, M. Hamada and T. Takeuchi, J. Antibiot., 23, 425-427, 1970.
424. On the mechanism of action of bleomycin: Strand scission of DNA caused by bleomycin and its binding to DNA in vitro.: H. Suzuki, K. Nagai, E. Akutsu, H. Yamaki, N. Tanaka and H. Umezawa, J. Antibiot., 23, 473-480, 1970.
425. A new microbial product, oudenone, inhibiting tyrosine hydroxylase.: H. Umezawa, T. Takeuchi, H. Iinuma, K. Suzuki, M. Ito, M. Matsuzaki, T. Nagatsu and O. Tanabe, J. Antibiot., 23, 514-518, 1970.
426. Mechanism of action of negamycin in Escherichia coli K 12. I. Inhibition of initiation of protein synthesis.: S. Mizuno, K. Nitta and H. Umezawa, J. Antibiot., 23, 581-588, 1970.
427. Mechanism of action of negamycin in Escherichia coli K 12. II. Miscoding activity in polypeptide synthesis directed by synthetic polynucleotide.: S. Mizuno, K. Nitta and H. Umezawa, J. Antibiot., 23, 589-594, 1970.
428. Inhibition of dopamine β -hydroxylase by fusaric acid (5-butylpicolinic acid) in vitro and in vivo.: T. Nagatsu, H. Hidaka, H. Kuzuya, K. Takeya, H. Umezawa, T. Takeuchi and H. Suda, Biochem. Pharmacol., 19, 35-44, 1970.
429. Anti-inflammatory neutral proteinases, retikinsonase I and II obtained from Streptomyces verticillatus var. zynogens.: S. Nakamura, M. Hamada, M. Ishizuka and H. Umezawa, Chem. Pharm. Bull., 18, 2112-2118, 1970.
430. Breaks and rejoining of DNA in cultured mammalian cells treated with bleomycin.: T. Terashima, M. Yasukawa and H. Umezawa, Gann, 61, 513-516, 1970.
431. Inhibition of nucleic acid biosynthesis in cell-free systems of Escherichia coli B by pluramycin.: K. Nagai, N. Tanaka and H. Umezawa, J. Biochem., 67, 655-660, 1970.
432. The structure of aquayamycin.: M. Sezaki, S. Kondo, K. Maeda, H. Umezawa and M. Ohno, Tetrahedron, 26, 5171-5190, 1970.
433. The structures of coriolin B and C.: S. Takahashi, H. Iinuma, T. Takita, K. Maeda and H. Umezawa, Tetrahedron Lett., 1970, 1637-1639.
434. Biochemical effects of pyridomycin.: I. Tsukada, M. Hori and H. Umezawa, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. I, Univ. Tokyo Press, 183-189, 1970.
435. Animal experiments confirming the specific effect of bleomycin against squamous cell carcinoma.: T. Ichikawa, H. Umezawa, S. Ohashi, T. Takeuchi, M. Ishizuka and S. Hori, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. II, Univ. Tokyo Press, 315-316, 1970.
436. Inhibition sites of several antibiotics in polypeptide synthesis.: N. Tanaka, T. Kinoshita, Y. Lin, T. Nishimura and H. Umezawa, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. II, Univ. Tokyo Press, 502-513, 1970.
437. Mechanisms of inactivation of aminoglycosidic antibiotics by enzymes of resistant organisms of clinical origin.: H. Umezawa, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. II, Univ. Tokyo Press, 567-571, 1970.
438. Chemical studies on an antitumor antibiotic, bleomycin A₂.: T. Takita, Y. Muraoka, S. Omoto, G. Koyama, A. Fujii, K. Maeda and H. Umezawa, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. II, Univ. Tokyo Press, 1031-1036, 1970.
439. Studies on kanamycin related compounds produced during fermentation by mutants of Streptomyces kanamyceticus. Isolation and properties.: M. Murase, T. Ito, S. Fukatsu and H. Umezawa, "Progress in Antimicrobial and Anticancer Chemotherapy," Vol. II, Univ. Tokyo Press, 1098-1110, 1970.
440. A new microbial metabolite, sphydrofuran. I. Isolation and the structure of a hydrolysis

- product.: S. Umezawa, T. Usui, H. Umezawa, T. Tsuchiya, T. Takeuchi and M. Hamada, J. Antibiot., 24, 85-92, 1971.
441. A new microbial metabolite, sphydrofuran. II. The structure of sphydrofuran.: T. Usui, S. Umezawa, T. Tsuchiya, H. Naganawa, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 93-106, 1971.
442. Effects of bleomycin A₂ on deoxyribonuclease, DNA polymerase and ligase reactions.: H. Yamaki, H. Suzuki, K. Nagai, N. Tanaka and H. Umezawa, J. Antibiot., 24, 178-184, 1971.
443. Neopluramycin, an inhibitor of nucleic acid synthesis.: I. Tsukada, M. Hamada, H. Umezawa, M. Horii and H. Hayashi, J. Antibiot., 24, 189-196, 1971.
444. Phenomycin, toxicity and distribution.: S. Nakamura, T. Takeuchi, S. Horii, M. Matsuzaki and H. Umezawa, J. Antibiot., 24, 197-199, 1971.
445. Reversible binding of macromomycin, a macromolecular peptide antibiotic, to cell membranes.: T. Kunimoto, M. Horii and H. Umezawa, J. Antibiot., 24, 203-205, 1971.
446. Biosynthesis of the formycin family.: T. Kunimoto, T. Sawa, T. Wakashiro, M. Horii and H. Umezawa, J. Antibiot., 24, 253-258, 1971.
447. Synthesis of 3'-deoxykanamycin effective against kanamycin-resistant Escherichia coli and Pseudomonas aeruginosa.: S. Umezawa, T. Tsuchiya, R. Muto, Y. Nishimura and H. Umezawa, J. Antibiot., 274-275, 1971.
448. The structure and activity of leupeptins and related analogs.: K. Maeda, K. Kawamura, S. Kondo, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 402-404, 1971.
449. 3',4'-Dideoxykanamycin B active against kanamycin-resistant Escherichia coli and Pseudomonas aeruginosa.: H. Umezawa, S. Umezawa, T. Tsuchiya and Y. Okazaki, J. Antibiot., 24, 485-487, 1971.
450. Effect of protease inhibitors of actinomycetes on lysosomal peptide-hydrolases from swine liver.: H. Ikezawa, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 488-490, 1971.
451. Inhibition of ligase reaction by bleomycin.: M. Miyaki, T. Ono and H. Umezawa, J. Antibiot., 24, 587-592, 1971.
452. Diketocoriolin B, an active derivative of coriolin B produced by Coriolus consors.: T. Takeuchi, S. Takahashi, H. Iinuma and H. Umezawa, J. Antibiot., 24, 631-635, 1971.
453. Effect of pepstatin on acid proteases.: T. Aoyagi, S. Kunimoto, H. Morishima, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 687-694, 1971.
454. Synthesis of 3',4'-dideoxyneamine active against kanamycin-resistant E. coli and P. aeruginosa.: S. Umezawa, T. Tsuchiya, T. Jikihara and H. Umezawa, J. Antibiot., 24, 711-712, 1971.
455. Leucylnegamycin, an antibiotic from negamycin-producing Streptomyces.: S. Kondo, H. Yamamoto, K. Maeda and H. Umezawa, J. Antibiot., 24, 732-734, 1971.
456. Arglecín, a new microbial metabolite. Isolation and chemical structure.: K. Tatsuta, T. Tsuchiya, T. Someno, S. Umezawa, H. Umezawa and H. Naganawa, J. Antibiot., 24, 735-746, 1971.
457. Reaction of bleomycin with DNA strand scission of DNA in the absence of sulfhydryl or peroxide compounds.: I. Shirakawa, M. Azegami, S. Ishii and H. Umezawa, J. Antibiot., 24, 761-766, 1971.
458. Chemistry of bleomycin. V. Revised structure of an amine component of bleomycin A₂.: T. Takita, T. Yoshioka, Y. Muraoka, K. Maeda and H. Umezawa, J. Antibiot., 24, 795-796, 1971.
459. Structure determinations of enzymatically phosphorylated products of aminoglycosidic antibiotics by proton magnetic resonance.: H. Naganawa, S. Kondo, K. Maeda and H. Umezawa, J.

- Antibiot., 24, 823-829, 1971.
460. An enzyme inhibitor, panosialin, produced by Streptomyces. I. Biological activity, isolation and characterization of panosialin.: T. Aoyagi, M. Yagisawa, M. Kumagai, M. Hamada, Y. Okami, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 860-869, 1971.
461. An enzyme inhibitor, panosialin, produced by Streptomyces. II. Chemistry of panosialin, 5-alkylbenzene-1,3-disulfates.: M. Kumagai, Y. Suhara, T. Aoyagi and H. Umezawa, J. Antibiot., 24, 870-875, 1971.
462. A new antibiotic, cyclamidomycin.: S. Takahashi, M. Nakajima, Y. Ikeda, S. Kondo, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 24, 902-903, 1971.
463. Adenylyldideoxykanamycin B a product of the inactivation of dideoxykanamycin B by Escherichia coli carrying R factor.: M. Yagisawa, H. Naganawa, S. Kondo, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 911-912, 1971.
464. The structure determination of an enzymatic inactivation product of 3',4'-dideoxykanamycin B.: H. Naganawa, M. Yagisawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 24, 913-914, 1971.
465. Jossamycin, a new macrolide antibiotic of resistance non-inducing type.: T. Osono and H. Umezawa, "Drug Action and Drug Resistance in Bacteria. I. Macrolide Antibiotics and Lincomycin," S. Mitsuhashi, Ed., Univ. Tokyo Press, Tokyo (1971), pp. 41-120.
466. Effect of ouidenone on adrenal tyrosine hydroxylase activity in vivo and on tissue catecholamine concentrations.: T. Nagatsu, I. Nagatsu, H. Umezawa and T. Takeuchi, Biochem. Pharmacol., 20, 2505-2507, 1971.
467. Adrenal enzymes of catecholamine biosynthesis and metabolism in spontaneously hypertensive rats.: I. Nagatsu, T. Nagatsu, K. Mizutani, H. Umezawa, M. Matsuzaki and T. Takeuchi, Experientia, 27, 1013-1014, 1971.
468. Application of fusaric acid, an inhibitor of dopamine β -hydroxylase against parkinsonism. (in Japanese): Y. Okada, T. Fujita, T. Ohta, T. Shinoda, H. Hidaka, T. Nagatsu, T. Takeuchi and H. Umezawa, Igaku no Ayumi, 76, 495-496, 1971.
469. Oudenone, a novel tyrosine hydroxylase inhibitor from microbial origin.: M. Ohno, M. Okamoto, N. Kawabe, H. Umezawa, T. Takeuchi, H. Iinuma and S. Takahashi, J. Am. Chem. Soc., 93, 1285-1286, 1971.
470. Negamycin, a novel hydrazide antibiotic.: S. Kondo, S. Shibahara, S. Takahashi, K. Maeda, H. Umezawa and M. Ohno, J. Am. Chem. Soc., 93, 6305-6306, 1971.
471. Relationship between sex-pili formation and macarbomycin sensitivity in Escherichia coli.: S. Iyobe, S. Mitsuhashi and H. Umezawa, J. Bacteriol., 108, 946-947, 1971.
472. Adrenal tyrosine hydroxylase and dopamine β -hydroxylase in spontaneously hypertensive rats.: I. Nagatsu, T. Nagatsu, K. Mizutani, H. Umezawa, M. Matsuzaki and T. Takeuchi, Nature, 230, 381-382, 1971.
473. Natural and artificial bleomycins: Chemistry and antitumor activities.: H. Umezawa, Pure Appl. Chem., 28, 665-680, 1971.
474. The structure of arglecin, a new metabolite of Streptomyces.: S. Umezawa, K. Tatsuta, T. Tsuchiya, H. Umezawa and H. Naganawa, Tetrahedron Lett., 1971, 259-262.
475. Revised structure and stereochemistry of coriolins.: S. Takahashi, H. Naganawa, H. Iinuma, T. Takita, K. Maeda and H. Umezawa, Tetrahedron Lett., 1971, 1955-1958.
476. Recent studies in new and extended areas of antibiotic research.: H. Umezawa, "Proc. IVth IFS: Ferment. Technol. Today (Kyoto)." 19-29, 1972.
477. Microbial hypotensive agent: Inhibitors of norepinephrine biosynthesis.: H. Umezawa, "Proc.

- Vith IFS: Ferment. Technol. Today (Kyoto)," 401-405, 1972.
478. Enzymes of catecholamine biosynthesis and metabolism in spontaneously hypertensive rats and hypotensive effects of the specific inhibitors from microbial origin.: T. Nagatsu, K. Mizutani, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, "Spontaneous hypertension—Its Pathogenesis and Complications," K. Okamoto, Ed., Igaku Shoin, Tokyo (1972), pp. 31-36.
 479. Macarboxymycin, an inhibitor of peptidoglycan synthesis.: J. Suzuki, M. Hori, T. Saeki and H. Umezawa, J. Antibiot., 25, 94-104, 1972.
 480. Stimulation of kanamycin phosphotransferase synthesis in Escherichia coli by 3',5'-cyclic AMP.: I. Tsukada, M. Yagisawa, M. Umezawa, M. Hori and H. Umezawa, J. Antibiot., 25, 144-146, 1972.
 481. Chemistry of bleomycin. VI. Selective cleavage of bleomycin A₂ by N-bromosuccinimide.: Y. Muraoka, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 25, 185-186, 1972.
 482. The structure of the sulfur-containing chromophore of phleomycin, and chemical transformation of phleomycin to bleomycin.: T. Takita, Y. Muraoka, A. Fujii, H. Itoh, K. Maeda and H. Umezawa, J. Antibiot., 25, 197-199, 1972.
 483. Dopamine β-hydroxylase inhibitor produced by Gloeophyllum striatum and its identity with oosponol.: H. Umezawa, H. Iinuma, M. Ito, M. Matsuzaki, T. Takeuchi and O. Tanabe, J. Antibiot., 25, 239-242, 1972.
 484. Mechanism of inhibition of pepsin by pepstatin.: S. Kunimoto, T. Aoyagi, H. Morishima, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 251-255, 1972.
 485. Antipain, a new protease inhibitor isolated from actinomycetes.: H. Suda, T. Aoyagi, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 263-266, 1972.
 486. Structure of antipain, a new Sakaguchi-positive product of streptomycetes.: S. Umezawa, K. Tatsuta, K. Fujimoto, T. Tsuchiya, H. Umezawa, and H. Naganawa, J. Antibiot., 25, 267-270, 1972.
 487. Effect of diketocoriolin B on antibody formation.: M. Ishizuka, H. Iinuma, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 320-321, 1972.
 488. Syntheses of 3'- and 4'-O-methylneamine.: S. Umezawa, T. Jikihara, T. Tsuchiya and H. Umezawa, J. Antibiot., 25, 322-324, 1972.
 489. Cycloamidomycin (desdanine), an inhibitor of nucleoside diphosphokinase of Escherichia coli.: T. Saeki, M. Hori and H. Umezawa, J. Antibiot., 25, 343-349, 1972.
 490. The structures of oryzoxymycin and its dimerization product.: T. Hashimoto, S. Takahashi, H. Naganawa, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 25, 350-355, 1972.
 491. Requinomycin, an inhibitor of R-factor transfer: Isolation, characterization and properties.: M. Hori, K. Takemoto, I. Homma, T. Takeuchi, S. Kondo, M. Hamada, T. Okazaki, Y. Okami and H. Umezawa, J. Antibiot., 25, 393-399, 1972.
 492. Studies on the mechanism of antitumor effect of bleomycin on squamous cell carcinoma.: H. Umezawa, T. Takeuchi, S. Hori, T. Sawa, M. Ishizuka, T. Ichikawa and T. Komai, J. Antibiot., 25, 409-420, 1972.
 493. Isolation and characterization of lividomycin A inactivated by Pseudomonas aeruginosa and Escherichia coli carrying R factor.: S. Kondo, H. Yamamoto, H. Naganawa, H. Umezawa and S. Mitsuhashi, J. Antibiot., 25, 483-484, 1972.
 494. Synthesis of lividomycin A 5''-phosphate, an enzymatically inactivated lividomycin A.: H. Yamamoto, S. Kondo, K. Maeda and H. Umezawa, J. Antibiot., 25, 485-486, 1972.
 495. Syntheses of 5''-deoxylividomycin A and its amino derivatives.: H. Yamamoto, S. Kondo, K. Maeda and H. Umezawa, J. Antibiot., 25, 487-488, 1972.

496. New pepstatins, pepstatins B and C, and pepstanone A, produced by streptomycetes.: T. Miyano, M. Tomiyasu, H. Iizuka, S. Tomisaka, T. Takita, T. Aoyagi and H. Umezawa, J. Antibiot., 25, 489-491, 1972.
497. Inactivation of 3',4'-dideoxykanamycin B by an enzyme solution of resistant E. coli and isolation of 3',4'-dideoxykanamycin B 2''-guanylate and 2''-inosinate.: M. Yagisawa, H. Naganawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 492-494, 1972.
498. 6'-N-Acetylation of 3',4'-dideoxykanamycin B by an enzyme in a resistant strain of Pseudomonas aeruginosa.: M. Yagisawa, H. Naganawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 495-496, 1972.
499. Dopastin, an inhibitor of dopamine β -hydroxylase.: H. Iinuma, T. Takeuchi, S. Kondo, M. Matsuzaki, H. Umezawa and M. Ohno, J. Antibiot., 25, 497-500, 1972.
500. Synthetic studies on leupeptins and their analogs.: B. Shimizu, A. Saito, A. Ito, K. Tokawa, K. Maeda and H. Umezawa, J. Antibiot., 25, 515-523, 1972.
501. The chemical synthesis of pepstatin A.: H. Morishima, T. Takita and H. Umezawa, J. Antibiot., 25, 551-552, 1972.
502. Synthesis of 3',4'-dideoxy and 3',4',5''-trideoxyribostamycin active against kanamycin-resistant E. coli and P. aeruginosa.: S. Umezawa, T. Tsuchiya, D. Ikeda and H. Umezawa, J. Antibiot., 25, 613-616, 1972.
503. Synthesis of 5''-deoxylividomycin B.: S. Umezawa, I. Watanabe, T. Tsuchiya, H. Umezawa and M. Hamada, J. Antibiot., 25, 617-618, 1972.
504. Chemistry of bleomycin. VII. Synthesis of β -amino-8-(4-amino-6-carboxy-5-methylpyrimidin-2-yl)-propionic acid, an amine component of bleomycin.: T. Yoshioka, Y. Muraoka, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 25, 625-626, 1972.
505. Inhibition of R-factor transfer and phage infection by requinomycin.: M. Hori, K. Takemoto, S. Watanabe, M. Umezawa and H. Umezawa, J. Antibiot., 25, 629-633, 1972.
506. Revised structure for arglecin.: K. Tatsuta, T. Tsuchiya, S. Umezawa, H. Naganawa and H. Umezawa, J. Antibiot., 25, 674-676, 1972.
507. Negamycin, a miscoding antibiotic with a unique structure.: Y. Uehara, S. Kondo, H. Umezawa, K. Suzukake and M. Hori, J. Antibiot., 25, 685-688, 1972.
508. Biological activity of pepstatins, pepstanone A and partial peptides on pepsin, cathepsin D and renin.: T. Aoyagi, H. Morishima, R. Nishizawa, S. Kunimoto, T. Takeuchi, H. Umezawa and H. Ikezawa, J. Antibiot., 25, 689-694, 1972.
509. Effect of antipain on lysosomal peptide-hydrolases from swine liver.: H. Ikezawa, K. Yamada, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 738-740, 1972.
510. Synthesis of butirosin B.: D. Ikeda, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 25, 741-742, 1972.
511. Synthesis of 6'-N-methylkanamycin and 3',4'-dideoxy-6'-N-methylkanamycin B active against resistant strains having 6'-N-acetylating enzymes.: H. Umezawa, Y. Nishimura, T. Tsuchiya and S. Umezawa, J. Antibiot., 25, 743-745, 1972.
512. Kanamycin 6'-acetate and ribostamycin 6'-acetate, enzymatically inactivated products by Pseudomonas aeruginosa.: H. Yamamoto, M. Yagisawa, H. Naganawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 746-747, 1972.
513. A new enzyme in Escherichia coli carrying R-factor phosphorylating 3'-hydroxyl of butirosin A, kanamycin, neamine and ribostamycin.: M. Yagisawa, H. Yamamoto, H. Naganawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 25, 748-750, 1972.
514. The chemistry of bleomycin. VIII. The structure of the sugar moiety of bleomycin A₂.: S.

- Omoto, T. Takita, K. Maeda, H. Umezawa and S. Umezawa, J. Antibiot., 25, 752-754, 1972.
515. The chemistry of bleomycin. IX. The structures of bleomycin and phleomycin.: T. Takita, Y. Muraoka, T. Yoshioka, A. Fujii, K. Maeda and H. Umezawa, J. Antibiot., 25, 755-758, 1972.
516. Progress in antitumor antibiotics.: H. Umezawa, "Advances in Antimicrobial and Antineoplastic Chemotherapy," Urban and Schwarzenberg (1972), pp. 81-82.
517. Kanamycin derivatives effective against resistant organisms.: H. Umezawa, T. Takeuchi, T. Tsuchiya and S. Umezawa, "Advances in Antimicrobial and Antineoplastic Chemotherapy," Urban and Schwarzenberg (1972), pp. 603-604.
518. A β -lactamase of *Escherichia coli*.: H. Ogawara, K. Maeda and H. Umezawa, Biochim. Biophys. Acta, 289, 203-211, 1972.
519. Studies on aminosugars. XXIX. The synthesis of 3'-O-methylkanamycin.: H. Umezawa, T. Tsuchiya, R. Muto and S. Umezawa, Bull. Chem. Soc. Jpn., 45, 2842-2847, 1972.
520. Studies on aminosugars. XXX. The synthesis of 3'-deoxykanamycin.: S. Umezawa, Y. Nishimura, H. Hineno, K. Watanabe, S. Koike, T. Tsuchiya and H. Umezawa, Bull. Chem. Soc. Jpn., 45, 2847-2851, 1972.
521. Studies on aminosugars. XXXII. Synthesis of 3',4'-dideoxykanamycin B.: S. Umezawa, Y. Okazaki and T. Tsuchiya, Bull. Chem. Soc. Jpn., 45, 3624-3628, 1972.
522. Macromomycin, an inhibitor of the membrane function of tumor cells.: T. Kunimoto, M. Hori and H. Umezawa, Cancer Res., 32, 1251-1256, 1972.
523. Inhibition of tumorigenesis in mouse skin by leupeptin, a protease inhibitor from *Actinomyces*.: M. Hozumi, M. Ogawa, T. Sugimura, T. Takeuchi and H. Umezawa, Cancer Res., 32, 1725-1728, 1972.
524. Alkinonase A and AF, new alkaline proteinases produced by *Streptomyces violaceorectus*.: S. Nakamura, H. Fukuda, T. Yamamoto, M. Ogura, M. Hamada, M. Matsuzaki and H. Umezawa, Chem. Pharm. Bull., 20, 385-390, 1972.
525. Inhibition of melanoma tyrosinase by fusaric acid.: T. Nagatsu, Y. Sudo, T. Okada, H. Umezawa and T. Takeuchi, Experientia, 28, 634, 1972.
526. Inhibition of human serum dopamine β -hydroxylase after the oral administration of fusaric acid.: T. Nagatsu, T. Kato, H. Kuzuya, T. Okada, H. Umezawa and T. Takeuchi, Experientia, 28, 779-780, 1972.
527. Serum dopamine β -hydroxylase in spontaneously hypertensive rats.: T. Nagatsu, T. Kato, H. Kuzuya, H. Umezawa, M. Matsuzaki and T. Takeuchi, Experientia, 29, 905-906, 1972.
528. The total syntheses of negamycin and the antipode.: S. Shibahara, S. Kondo, K. Maeda, H. Umezawa and M. Ohno, J. Am. Chem. Soc., 94, 4353-4354, 1972.
529. The total synthesis of kasugamycin.: Y. Suhara, F. Sasaki, G. Koyama, K. Maeda, H. Umezawa and M. Ohno, J. Am. Chem. Soc., 94, 6501-6507, 1972.
530. An evaluation of taxonomic criteria in streptomycetes on the basis of deoxyribonucleic acid homology.: M. Okanishi, H. Akagawa and H. Umezawa, J. Gen. Microbiol., 72, 49-58, 1972.
531. Effect of bleomycin on mammalian cell survival.: T. Terashima, Y. Takabe, T. Katsumata, M. Watanabe and H. Umezawa, J. Natl. Cancer Inst., 49, 1093-1100, 1972.
532. Sugar moiety of bleomycin.: H. Umezawa, "Biochemistry of the Glycosidic Linkage, PAABS Symposium, 2," 165-170, 1972.
533. Biosynthesis of oncostatic antibiotics: Artificial bleomycins.: H. Umezawa, Post. Hig. I. Med. Dosw., 26, 431-443, 1972.
534. Two β -lactamase inhibitors produced by a streptomycetes.: H. Umezawa, S. Mitsuhashi, M. Hamada, S. Iyobe, S. Takahashi, R. Utahara, Y. Osato, S. Yamazaki, H. Ogawara and K. Maeda,

- J. Antibiot., 26, 51-54, 1973.
535. The chemistry of bleomycin. X. The stereochemistry and crystal structure of β -hydroxy-histidine, an amine component of bleomycin.: G. Koyama, H. Nakamura, Y. Muraoka, T. Takita, K. Maeda, H. Umezawa and Y. Iitaka, J. Antibiot., 26, 109-111, 1973.
536. Methylspinazarin and dihydromethylspinazarin, catechol-O-methyl transferase inhibitors produced by Streptomyces.: H. Chimura, T. Sawa, T. Takita, M. Matsuzaki, T. Takeuchi, T. Nagatsu and H. Umezawa, J. Antibiot., 26, 112-114, 1973.
537. Synthesis of 4-amino-3-hydroxy-6-methylheptanoic acid, an amine component of pepstatin.: H. Morishima, T. Takita and H. Umezawa, J. Antibiot., 26, 115-116, 1973.
538. Preparation of bleomycinic acid: Hydrolysis of bleomycin B₂ by a Fusarium acylglutamine amidohydrolase.: H. Umezawa, Y. Takahashi, A. Fujii, T. Saino, T. Shirai and T. Takita, J. Antibiot., 26, 117-119, 1973.
539. Monoamine oxidase inhibitors isolated from fermented broths.: T. Takeuchi, K. Ogawa, H. Iinuma, H. Suda, K. Ukita, T. Nagatsu, M. Kato, H. Umezawa and O. Tanabe, J. Antibiot., 26, 162-167, 1973.
540. Fusaric acid derivatives: The effect on dopamine β -hydroxylase.: H. Umezawa, T. Takeuchi, K. Miyano, T. Koshigoe and H. Hamano, J. Antibiot., 26, 189, 1973.
541. Chemical cleavage of bleomycin to bleomycinic acid and synthesis of new bleomycins.: T. Takita, A. Fujii, T. Fukuoka and H. Umezawa, J. Antibiot., 26, 252-254, 1973.
542. X-ray structure determination of 4-amino-3-hydroxy-6-methylheptanoic acid, an amine component of pepstatin.: H. Nakamura, H. Morishima, T. Takita, H. Umezawa and Y. Iitaka, J. Antibiot., 26, 255-256, 1973.
543. Synthesis of 1-N-((S)-4-amino-2-hydroxybutyryl)-3',4'-dideoxyneamine.: S. Umezawa, D. Ikeda, T. Tsuchiya and H. Umezawa, J. Antibiot., 26, 304-306, 1973.
544. Synthesis of 3',4'-dideoxybutirosin B.: D. Ikeda, T. Tsuchiya, S. Umezawa, H. Umezawa and M. Hamada, J. Antibiot., 26, 307-309, 1973.
545. Synthesis of 1-N-((S)-4-amino-2-hydroxybutyryl)lividomycin A.: I. Watanabe, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 26, 310-312, 1973.
546. New components of bleomycin.: A. Fujii, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 26, 396-397, 1973.
547. Chemistry of bleomycin. XI. The structures of the terminal amines.: A. Fujii, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 26, 398-399, 1973.
548. Chemistry of bleomycin. XII. Iso-bleomycin A₂, a product of carbamoyl group migration.: Y. Nakayama, M. Kunishima, S. Omoto, T. Takita and H. Umezawa, J. Antibiot., 26, 400-402, 1973.
549. Synthesis of 3'-deoxykanamycin B.: Y. Takagi, T. Miyake, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 26, 403-406, 1973.
550. Kanamycin phosphotransferase I: Mechanism of cross resistance between kanamycin and lividomycin.: H. Umezawa, H. Yamamoto, M. Yagisawa, S. Kondo, T. Takeuchi and Y. A. Chabbert, J. Antibiot., 26, 407-411, 1973.
551. Syntheses of 1-N-[(S)-4-amino-2-hydroxybutyryl]-kanamycin B and -3',4'-dideoxykanamycin B active against kanamycin-resistant bacteria.: S. Kondo, K. Iinuma, H. Yamamoto, K. Maeda and H. Umezawa, J. Antibiot., 26, 412-415, 1973.
552. Response in macromolecular syntheses of mouse L cells to bleomycin, with special reference to cell-antibiotic interaction.: M. Watanabe, Y. Takabe, T. Katsumata, T. Terashima and H. Umezawa, J. Antibiot., 26, 417-423, 1973.
553. Biological properties of macarbomycin, an antibiotic containing phosphorus.: S. Takahashi,

- K. Nitta, S. Honjo, F. Cho and H. Umezawa, J. Antibiot., 26, 513-520, 1973.
554. The effect of bleomycin on SV40 DNA: Characteristics of bleomycin action which produces a single scission in a superhelical form of SV40 DNA.: H. Umezawa, H. Asakura, K. Oda, S. Hori and M. Hori, J. Antibiot., 26, 521-527, 1973.
555. New pepstatins, pepstatins Bu, Pr and Ac produced by Streptomyces.: T. Aoyagi, Y. Yagisawa, M. Kumagai, M. Hamada, H. Morishima, T. Takeuchi and H. Umezawa, J. Antibiot., 26, 539-541, 1973.
556. Four minor antibiotics from macarbornomycins.: S. Takahashi, M. Miyamoto, S. Fukatsu, K. Maeda and H. Umezawa, J. Antibiot., 26, 542-544, 1973.
557. Argvalin, a new microbial metabolite: Isolation and structure.: K. Tatsuta, K. Fujimoto, M. Yamashita, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 26, 606-608, 1973.
558. Gentamicin acetyltransferase in Escherichia coli carrying R factor.: H. Umezawa, M. Yagisawa, Y. Matsuhashi, H. Naganawa, H. Yamamoto, S. Kondo, T. Takeuchi and Y. A. Chabbert, J. Antibiot., 26, 612-614, 1973.
559. Hydroxyepstatin, a new pepstatin produced by streptomyces.: H. Umezawa, T. Miyano, T. Murakami, T. Takita, T. Aoyagi, T. Takeuchi, H. Naganawa and H. Morishima, J. Antibiot., 26, 615-617, 1973.
560. 7-O-Methylspinochrome B and its 6-(3-hydroxy-n-butyl)-derivative, catechol-O-methyl transferase inhibitors, produced by fungi imperfecti.: H. Chimura, T. Sawa, Y. Kumada, F. Nakamura, M. Matsuzaki, T. Takita, T. Takeuchi and H. Umezawa, J. Antibiot., 26, 618-620, 1973.
561. A thermolysin inhibitor produced by actinomycetes: Phosphoramidon.: H. Suda, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 26, 621-623, 1973.
562. The structure of chymostatin, a chymotrypsin inhibitor.: K. Tatsuta, N. Mikami, K. Fujimoto, S. Umezawa, H. Umezawa and T. Aoyagi, J. Antibiot., 26, 625-646, 1973.
563. Syntheses of (S)-4-amino-2-hydroxybutyryl derivatives of 3',4'-dideoxykanamycin B and their antibacterial activities.: S. Kondo, K. Iinuma, H. Yamamoto, Y. Ikeda, K. Maeda and H. Umezawa, J. Antibiot., 26, 705-707, 1973.
564. Elastatinal, a new elastase inhibitor produced by actinomycetes.: H. Umezawa, T. Aoyagi, A. Okura, H. Morishima, T. Takeuchi and Y. Okami, J. Antibiot., 26, 787-789, 1973.
565. Synthesis of 3'-deoxyribostamycin.: D. Ikeda, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 26, 799-801, 1973.
566. Synthesis of 6'-amino-6'-deoxylividomycin B and 6'-deoxy-6'-methylamino- and 6'-deoxy-6'-(2-hydroxyethylamino)-lividomycin B.: I. Watanabe, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 26, 802-804, 1973.
567. Inhibitory activity of pepstatin against acid protease and an estimation method of acid protease in gastric juice. (in Japanese): T. Aoyagi, S. Kunimoto, T. Takeuchi and H. Umezawa, Jap. J. Antibiot., 26, 109-114, 1973.
568. Biochemical effects of 3',4'-dideoxykanamycin B. (in Japanese): H. Umezawa, Jap. J. Antibiot., 26, 306-310, 1973.
569. Chemistry of enzyme inhibitors of microbial origin.: H. Umezawa, Pure Appl. Chem., 33, 129-144, 1973.
570. Kinetic studies on the inhibition of $(\text{Na}^+ + \text{K}^+)$ -ATPase by diketocoriolin B.: T. Kunimoto and H. Umezawa, Biochim. Biophys. Acta, 318, 78-90, 1973.
571. Mechanism of action of diketocoriolin B.: T. Kunimoto, M. Hori and H. Umezawa, Biochim. Biophys. Acta, 298, 513-525, 1973.
572. Studies on aminosugars. XXXV. Syntheses of 3',4'-dideoxyneamine and 3'- and 4'-O-methyl-

- neamines.: T. Jikihara, Tsuchiya, S. Umezawa and H. Umezawa, Bull. Chem. Soc. Jpn., 46, 3507-3510, 1973.
573. An alternate synthesis of leupeptins and their analogs.: H. Saeki, Y. Shimada, N. Kawakita, B. Shimizu, E. Ohki, K. Maeda and H. Umezawa, Chem. Pharm. Bull., 21, 163-170, 1973.
574. Leupeptin and antipain.: H. Umezawa, Hoppe-Seyler's Z. Physiol. Chem., 354, 1304-1306, 1973.
575. Studies on bleomycin: Chemistry and the biological action.: H. Umezawa, Biomedicine, 18, 459-475, 1973.
576. Cinemicrographic analysis of death in synchronously growing mouse L cells after exposure to bleomycin.: T. Katsumata, M. Watanabe, Y. Takabe, T. Terashima and H. Umezawa, Gann, 64, 71-77, 1973.
577. Immunosuppression induced with cell-free fluid of Ehrlich carcinoma ascites and its fractions.: H. Yamazaki, K. Nitta and H. Umezawa, Gann, 64, 83-92, 1973.
578. Effect of bleomycin-A₅ on rat mammary carcinoma induced by 7,12-dimethylbenz[a]anthracene.: T. Tominaga, Y. Azuma, T. Maeda, M. Yurino, T. Ishida, T. Taguchi, S. Shiba, K. Horibata and H. Umezawa, Gann, 64, 617-624, 1973.
579. Inhibition of carcinogenic process by leupeptin, an inhibitor of protease. (in Japanese): M. Hozumi, M. Ogawa, H. Mizunoe, S. Miyake, K. Shimazaki, I. Ishikawa, T. Sugiura, S. Fujimura, T. Takeuchi and H. Umezawa, Igaku no Ayumi, 87, 22-27, 1973.
580. Hypotensive action of fusaric acid derivative (5-alkylpicolinic acid). (in Japanese): H. Umezawa, Igaku no Ayumi, 86, 258-259, 1973.
581. Synthesis of dopastin, a dopamine β -hydroxylase inhibitor of microbial origin.: M. Ohno, H. Iinuma, N. Yagisawa, S. Shibahara, Y. Suhara, S. Kondo, K. Maeda and H. Umezawa, J. Chem. Soc., Chem. Commun., 1973, 147-148.
582. New inhibitors of microbial origin for dopamine β -hydroxylase.: T. Nagatsu, T. Kato, H. Kuzuya, H. Umezawa and T. Takeuchi, "Frontiers in Catecholamine Research." (1973), pp. 83-86.
583. Catecholamine synthetic enzymes of spontaneously hypertensive rats and microbial hypotensive products.: T. Nagatsu, K. Mizutani, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, Mol. Cell Biochem., 1, 107-113, 1973.
584. Bleomycin. Origin, chemistry and artificial bleomycins.: H. Umezawa, "Antibiotics. Vol. III," Springer-Verlag (1974), pp. 21-33.
585. Mode of action and biochemical studies with bleomycin.: H. Umezawa, "Proceedings of the IX International Cancer Congress (Florence)," (1974), pp. 234-237.
586. Chemistry and mechanism of action of bleomycin.: H. Umezawa, Fed. Proc., 33, 2296-2302, 1974.
587. Development and mechanism of action of bleomycin.: H. Umezawa, Res. Mol. Biol., 4, 171-185, 1974.
588. Biosynthesis of new bleomycins.: A. Fujii, T. Takita, N. Shimada and H. Umezawa, J. Antibiot., 27, 73-77, 1974.
589. Minosaminomycin, a new antibiotic containing myo-inosamine.: M. Hamada, S. Kondo, T. Yokoyama, K. Miura, K. Iinuma, H. Yamamoto, K. Maeda, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 81-83, 1974.
590. The absolute structure of oryzoxymycin.: T. Hashimoto, S. Kondo, H. Naganawa, T. Takita, K. Maeda and H. Umezawa, J. Antibiot., 27, 86-87, 1974.
591. Syntheses of isoseryl derivatives of kanamycins and their antibacterial activities.: S.

- Kondo, K. Iinuma, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 27, 90-93, 1974.
592. 4-Amino-4-deoxy- α,α -trihaloalose, a new metabolite of a streptomycetes.: H. Naganawa, N. Usui, T. Takita, M. Hamada, K. Maeda and H. Umezawa, J. Antibiot., 27, 145-146, 1974.
593. Biological effects of azomycin (2-nitro-imidazole): Inhibition of ribonucleotide reductase.: T. Saeki, H. Umezawa, T. Tokieda-Fujishige and M. Hori, J. Antibiot., 27, 225-227, 1974.
594. Biosynthetic studies on pepstatin. Biosynthesis of (3S,4S)-4-amino-3-hydroxy-6-methylheptanoic acid moiety.: H. Morishima, T. Sawa, T. Takita, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 267-273, 1974.
595. Absolute configuration of coriolin, a sesquiterpene antibiotic from Coriolum consors.: H. Nakamura, T. Takita, H. Umezawa, M. Kunishima, Y. Nakayama and Y. Iitaka, J. Antibiot., 27, 301-302, 1974.
596. Chemistry of bleomycin. XIII. The X-ray structure determination of 4-amino-3-hydroxy-2-methyl-n-valeric acid, an amino component of bleomycin.: H. Nakamura, T. Takita, H. Umezawa, Y. Muraoka and Y. Iitaka, J. Antibiot., 27, 352-355, 1974.
597. Chemistry of bleomycin. XIV. Biogenetic-like synthesis of (2S,3S,4R)-4-amino-3-hydroxy-2-methyl-n-valeric acid, an amine component of bleomycin.: T. Yoshioka, T. Hara, T. Takita and H. Umezawa, J. Antibiot., 27, 356-357, 1974.
598. Immobilization of phosphotransferases obtained from resistant bacteria.: H. Umezawa, Y. Matsushashi, M. Yagisawa, H. Yamamoto, S. Kondo and T. Takeuchi, J. Antibiot., 27, 358-360, 1974.
599. Mechanism of inhibition of pepsin by pepstatin. II.: S. Kunimoto, T. Aoyagi, R. Nishizawa, T. Komai, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 413-418, 1974.
600. A bleomycin-inactivating enzyme in mouse liver.: H. Umezawa, S. Hori, T. Sawa, T. Yoshioka and T. Takeuchi, J. Antibiot., 27, 419-424, 1974.
601. A metabolite of bleomycin A₅ in rabbit urine.: S. Hori, T. Sawa, T. Yoshioka, T. Takita, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 489-491, 1974.
602. Inactivation of β -lactamase by some site-specific reagents.: H. Ogawara and H. Umezawa, J. Antibiot., 27, 567-569, 1974.
603. KD16-U1, a new metabolite of Streptomyces: Isolation and structural studies.: K. Tatsuta, T. Tsuchiya, N. Mikami, S. Umezawa, H. Umezawa and H. Naganawa, J. Antibiot., 27, 579-586, 1974.
604. Isolation of lecanoric acid, an inhibitor of histidine decarboxylase from a fungus.: H. Umezawa, N. Shibamoto, H. Naganawa, S. Ayukawa, M. Matsuzaki, T. Takeuchi, K. Kono and T. Sakamoto, J. Antibiot., 27, 587-596, 1974.
605. Studies on a new amino acid antibiotic, amiclennomycin.: Y. Okami, T. Kitahara, M. Hamada, H. Naganawa, S. Kondo, K. Maeda, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 656-664, 1974.
606. Preferential effects of antibiotics on E. coli strains carrying plasmids.: S. Mitsuhashi, S. Iyobe, T. Kubota, M. Hamada and H. Umezawa, J. Antibiot., 27, 682-684, 1974.
607. KF77-AG6, an antipain-related metabolite.: K. Fujimoto, K. Tatsuta, T. Tsuchiya, S. Umezawa and H. Umezawa, J. Antibiot., 27, 685, 1974.
608. Synthesis of 4'-deoxykanamycin and its resistance to kanamycin phosphotransferase II.: S. Umezawa, Y. Nishimura, Y. Hata, T. Tsuchiya, M. Yagisawa and H. Umezawa, J. Antibiot., 27, 722-725, 1974.
609. 1-[2-(3,4,5,6-Tetrahydropyridyl)-1,3-pentadiene, an N-methyltransferase inhibitor produced by actinomycetes.: Y. Kumada, H. Naganawa, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 27, 726-728, 1974.

610. The molecular and crystal structure determination of bisanhydroalthiomycin by the X-ray diffraction method.: H. Nakamura, Y. Iitaka, H. Sakakibara and H. Umezawa, J. Antibiot., 27, 894-896, 1974.
611. The structure of althiomycin.: H. Sakakibara, H. Naganawa, M. Ohno, K. Maeda and H. Umezawa, J. Antibiot., 27, 897-899, 1974.
612. Purification and characterization of a sialidase inhibitor, siastatin, produced by Streptomyces.: H. Umezawa, T. Aoyagi, T. Komiyama, H. Morishima, M. Hamada and T. Takeuchi, J. Antibiot., 27, 963-969, 1974.
613. Biochemical mechanism of resistance to aminoglycosidic antibiotics.: H. Umezawa, "Advances in Carbohydrate Chemistry and Biochemistry, Vol. 30," R. S. Tipson and D. Horton, Ed., Academic Press, New York (1974), pp. 183-225.
614. Production and isolation of dopastin, an inhibitor of dopamine β -hydroxylase.: H. Iinuma, S. Kondo, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 38, 2093-2097, 1974.
615. Structure and synthesis of dopastin, an inhibitor of dopamine β -hydroxylase.: H. Iinuma, N. Yagisawa, S. Shibahara, Y. Suhara, S. Kondo, K. Maeda, T. Takeuchi, M. Ohno and H. Umezawa, Agric. Biol. Chem., 38, 2099-2105, 1974.
616. Biochemical and biological studies on dopastin, an inhibitor of dopamine β -hydroxylase.: H. Iinuma, M. Matsuzaki, T. Nagatsu, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 38, 2107-2111, 1974.
617. The crystal structure of formycin hydrobromide monohydrate.: G. Koyama, H. Umezawa and Y. Iitaka, Acta Crystallogr. Sect. B, 30, 1511-1516, 1974.
618. Negamycin inhibits termination of protein synthesis directed by phage f2 RNA in vitro.: Y. Uehara, M. Hori and H. Umezawa, Biochim. Biophys. Acta, 374, 82-95, 1974.
619. Sialic acid residues exposed on mammalian cell surface: The effect of adsorption of denatured virus particles.: T. Aoyagi, J. Suzuki, K. Nerome, R. Nishizawa, T. Takeuchi and H. Umezawa, Biochem. Biophys. Res. Commun., 57, 271-278, 1974.
620. Change of enzyme activities during the early stage of influenza virus infection.: T. Aoyagi, K. Nerome, J. Suzuki, T. Takeuchi and H. Umezawa, Biochem. Biophys. Res. Commun., 60, 1178-1184, 1974.
621. Synthesis of butirosin B and its 3',4'-dideoxy derivative.: D. Ikeda, T. Tsuchiya, S. Umezawa and H. Umezawa, Bull. Chem. Soc. Jpn., 47, 3136-3138, 1974.
622. Synthesis of 1-N-[(S)-4-amino-2-hydroxybutyryl]-3',4'-dideoxyneamine.: Y. Takagi, D. Ikeda, T. Tsuchiya, S. Umezawa and H. Umezawa, Bull. Chem. Soc. Jpn., 47, 3139-3141, 1974.
623. Promotion of antibody formation by prostaglandin.: M. Ishizuka, T. Takeuchi and H. Umezawa, Experientia, 30, 1207-1208, 1974.
624. Suppression by leupeptin on carcinogenesis in large intestine by azoxymethane. (in Japanese): T. Matsushima, R. S. Yamamoto, K. Hara, T. Sugimura, T. Takeuchi and H. Umezawa, Igaku no Ayumi, 88, 710-714, 1974.
625. Effect of diketocoliorin (DKC) on antibody-formation. (in Japanese): M. Ishizuka, T. Takeuchi and H. Umezawa, Igaku no Ayumi, 91, 519-524, 1974.
626. Synthesis of coformycin.: M. Ohno, N. Yagisawa, S. Shibahara, S. Kondo, K. Maeda and H. Umezawa, J. Am. Chem. Soc., 96, 4326, 1974.
627. Structure of coformycin, an unusual nucleoside of microbial origin.: H. Nakamura, G. Koyama, Y. Iitaka, M. Ohno, N. Yagisawa, S. Kondo, K. Maeda and H. Umezawa, J. Am. Chem. Soc., 96, 4327, 1974.
628. Purification and characterization of Streptomyces sialidases.: S. Kunimoto, T. Aoyagi, T.

- Takeuchi and H. Umezawa, J. Bacteriol., 119, 394-400, 1974.
629. Kinetic studies on the inhibition of nucleoside diphosphate kinase by desdanine.: T. Saeki, M. Hori and H. Umezawa, J. Biochem., 76, 623-629, 1974.
630. Pyruvate kinase of Escherichia coli.: T. Saeki, M. Hori and H. Umezawa, J. Biochem., 76, 631-637, 1974.
631. Formation and reversion of streptomycete protoplasts: Cultural condition and morphological study.: M. Okanishi, K. Suzuki and H. Umezawa, J. Gen. Microbiol., 80, 389-400, 1974.
632. Heterogeneity among whorl-forming streptomycetes determined by DNA reassociation.: H. Toyama, M. Okanishi and H. Umezawa, J. Gen. Microbiol., 80, 507-514, 1974.
633. Serum dopamine β -hydroxylase activity in developing hypertensive rats.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, H. Umezawa, M. Matsuzaki and T. Takeuchi, Nature, 251, 630-631, 1974.
634. A new antibiotic, calvatic acid.: H. Umezawa, T. Takeuchi, H. Iinuma, M. Ito, M. Ishizuka, Y. Kurakata, T. Nakamura, A. Obayashi and O. Tanabe, J. Antibiot., 28, 87-90, 1975.
635. The structure of SS-228Y, an antibiotic from Chainia sp.: T. Kitahara, H. Naganawa, T. Okazaki, Y. Okami and H. Umezawa, J. Antibiot., 28, 280-285, 1975.
636. The structure of elastatinal, an elastase inhibitor of microbial origin.: A. Okura, H. Morishima, T. Takita, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 337-339, 1975.
637. Synthesis of 1-N-acyl derivatives of 3',4'-dideoxy-6'-N-methylkanamycin B and their antibacterial activities.: H. Umezawa, K. Iinuma, S. Kondo, M. Hamada and K. Maeda, J. Antibiot., 28, 340-343, 1975.
638. Aminoglycoside 3'-phosphotransferase I and II in Pseudomonas aeruginosa.: Y. Matsushashi, M. Yagisawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 442-447, 1975.
639. A macromolecular antitumor antibiotic: Macracidmycin.: T. Oki, A. Yoshimoto, Y. Matsuzawa, S. Hori, H. Tone, A. Takamatsu, T. Takeuchi, M. Ishizuka, M. Hamada and H. Umezawa, J. Antibiot., 28, 479-482, 1975.
640. Synthesis and antibacterial activity of 6'-N-alkyl derivatives of 1-N-[(S)-4-amino-2-hydroxybutyryl]-kanamycin.: H. Umezawa, K. Iinuma, S. Kondo and K. Maeda, J. Antibiot., 28, 483-485, 1975.
641. Aminoglycoside 6'-N-acetyltransferase of Pseudomonas aeruginosa: Structural requirements of substrate.: M. Yagisawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 486-489, 1975.
642. Characterization of bleomycin action on DNA.: H. Asakura, M. Hori and H. Umezawa, J. Antibiot., 28, 537-542, 1975.
643. Pyridindolol, a new β -galactosidase inhibitor produced by actinomycetes.: T. Aoyagi, M. Kumagai, T. Hazato, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 555-557, 1975.
644. Reticulol, an inhibitor of cyclic adenosine 3',5'-monophosphate phosphodiesterase.: Y. Furutani, M. Shimada, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 558-560, 1975.
645. Structure of minosaminomycin.: K. Iinuma, S. Kondo, K. Maeda and H. Umezawa, J. Antibiot., 28, 613-615, 1975.
646. Synthesis of 3'-deoxybutirosin B.: D. Ikeda, F. Nagaki, S. Umezawa, T. Tsuchiya and H. Umezawa, J. Antibiot., 28, 616-618, 1975.
647. New isoflavones, inhibiting catechol-O-methyltransferase, produced by Streptomyces.: H. Chimura, T. Sawa, Y. Kumada, H. Naganawa, M. Matsuzaki, T. Takita, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 619-626, 1975.
648. A glyoxalase I inhibitor of a new structural type produced by Streptomyces.: T. Takeuchi,

- H. Chimura, M. Hamada, H. Umezawa, O. Yoshioka, N. Oguchi, Y. Takahashi and A. Matsuda, J. Antibiot., 28, 737-742, 1975.
649. The structure of a glyoxalase I inhibitor and its chemical reactivity with SH-compounds.: H. Chimura, H. Nakamura, T. Takita, T. Takeuchi, H. Umezawa, K. Kato, S. Saito, T. Tomisawa and Y. Iitaka, J. Antibiot., 28, 743-748, 1975.
650. Revistin found by screening for inhibitors of reverse transcriptase of an oncogenic virus.: M. Numata, K. Nitta, R. Utahara, K. Maeda and H. Umezawa, J. Antibiot., 28, 757-763, 1975.
651. S-2,3-Dicarboxy-aziridine, a new metabolite from a Streptomyces.: H. Naganawa, N. Usui, T. Takita, M. Hamada and H. Umezawa, J. Antibiot., 28, 828-829, 1975.
652. New antitumor antibiotics, aclacinomycins A and B.: T. Oki, Y. Matsuzawa, A. Yoshimoto, K. Numata, I. Kitamura, S. Hori, A. Takamatsu, H. Umezawa, M. Ishizuka, H. Naganawa, H. Suda, M. Hamada and T. Takeuchi, J. Antibiot., 28, 830-834, 1975.
653. Aminoglycoside 3'-phosphotransferase III, a new phosphotransferase. Resistance mechanism.: Y. Umezawa, M. Yagisawa, T. Sawa, T. Takeuchi, H. Umezawa, H. Matsumoto and T. Tazaki, J. Antibiot., 28, 845-853, 1975.
654. Structure of pyridinolol, inhibitor of β -galactosidase.: M. Kumagai, H. Naganawa, T. Aoyagi, H. Umezawa, H. Nakamura and Y. Iitaka, J. Antibiot., 28, 876-880, 1975.
655. Isolation of isoflavones inhibiting dopa decarboxylase from fungi and streptomyces.: H. Umezawa, H. Tobe, N. Shibamoto, F. Nakamura, K. Nakamura, M. Matsuzaki and T. Takeuchi, J. Antibiot., 28, 947-952, 1975.
656. Effect of desdanine on nucleoside diphosphate kinase and pyruvate kinase of Escherichia coli.: T. Saeki, M. Hori and H. Umezawa, J. Antibiot., 28, 974-981, 1975.
657. Isoflavone rhamnosides, inhibitors of β -galactosidase produced by actinomycetes.: T. Aoyagi, T. Hazato, M. Kumagai, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 1006-1008, 1975.
658. Enzymatic degradation of pepstatin A to a new tetrapeptide.: H. Tone, N. Shibamoto, Y. Matsushita, T. Inui, A. Takamatsu, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 1009-1011, 1975.
659. Purification and properties of pepstatin hydrolase from Bacillus sphaericus.: H. Tone, Y. Matsushita, Y. Yagi, A. Takamatsu, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 1012-1015, 1975.
660. N-Acylated derivatives of a peptide obtained by enzymatic degradation of pepstatins.: Y. Matsushita, H. Tone, S. Hori, Y. Yagi, A. Takamatsu, H. Morishima, T. Aoyagi, T. Takeuchi and H. Umezawa, J. Antibiot., 28, 1016-1018, 1975.
661. Biochemical mechanism of resistance to aminoglycosidic antibiotics.: H. Umezawa, "Drug Action and Drug Resistance in Bacteria. II. Aminoglycoside Antibiotics," S. Mitsuhashi, Ed., Univ. Tokyo Press, Tokyo (1975), pp. 211-248.
662. Structures and activities of protease inhibitors of microbial origin.: T. Aoyagi and H. Umezawa, "Proteases and Biological Control," Cold Spring Harbor Lab. (1975), pp. 429-454.
663. Studies on glyoxalase inhibitor. Isolation of a new active agent, MS-3, from a mushroom culture.: S. Kurasawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 39, 2003-2008, 1975.
664. The structure of MS-3: A glyoxalase I inhibitor produced by a mushroom.: S. Kurasawa, H. Naganawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 39, 2009-2014, 1975.
665. R factor-mediated aminoglycoside antibiotic resistance in Pseudomonas aeruginosa: A new aminoglycoside 6'-N-acetyltransferase.: H. Kawabe, S. Kondo, H. Umezawa and S. Mitsuhashi, Antimicrob. Agents Chemother., 7, 494-499, 1975.

666. Ion-exchange chromatography of aminoglycoside antibiotics.: H. Umezawa and S. Kondo, "Methods in Enzymology. Vol. 43. Antibiotics," J. H. Hash, Ed., Academic Press, New York (1975), pp. 263-278.
667. Electrophoresis of antibiotics.: H. Umezawa and S. Kondo, "Methods in Enzymology. Vol. 43. Antibiotics," J. H. Hash, Ed., Academic Press, New York (1975), pp. 279-290.
668. History and development of biochemical mechanism of resistance to aminoglycosidic antibiotics and their active derivatives.: H. Umezawa, "Drug-inactivating Enzymes and Antibiotic Resistance," Springer-Verlag (1975), pp. 103-113.
669. Studies on inhibitory effect of phosphoramidon and its analogs on thermolysin.: T. Komiyama, H. Suda, T. Aoyagi, T. Takeuchi, H. Umezawa, K. Fujimoto and S. Umezawa, Arch. Biochem. Biophys., 171, 727-731, 1975.
670. Pharmacological action of FD-008, a new dopamine β -hydroxylase inhibitor.: Y. Ishii, Y. Fujii, C. Mimura and H. Umezawa, Arzneim.-Forsch., 25, 55-59, 1975.
671. Reaction with N-bromosuccinimide and the properties of the product.: H. Ogawara and H. Umezawa, Biochim. Biophys. Acta, 391, 435-447, 1975.
672. Inhibitory effects of phosphoramidon on neutral metalloendopeptidases and its application on affinity chromatography.: T. Komiyama, T. Aoyagi, T. Takeuchi and H. Umezawa, Biochem. Biophys. Res. Commun., 65, 352-357, 1975.
673. Bleomycin inhibition of DNA Synthesis in isolated enzyme systems and in intact cell systems.: W. E. G. Müller, A. Totsuka, I. Nusser, R. K. Zahn and H. Umezawa, Biochem. Pharmacol., 24, 911-915, 1975.
674. Binding of bleomycin to DNA in bleomycin-sensitive and -resistant rat ascites hepatoma cells.: M. Miyaki, T. Ono, S. Hori and H. Umezawa, Cancer Res., 35, 2015-2019, 1975.
675. Dopamine β -hydroxylase and tyrosine hydroxylase activities in spontaneously hypertensive rats after NaCl administration.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, H. Kuzuya, H. Umezawa, M. Matsuzaki and T. Takeuchi, Experientia, 31, 767-768, 1975.
676. Characterization of myxovirus sialidase.: T. Aoyagi, T. Komiyama, K. Nerome, T. Takeuchi and H. Umezawa, Experientia, 31, 896-897, 1975.
677. A plasmid involved in chloramphenicol production in Streptomyces venezuelae: Evidence from genetic mapping.: H. Akagawa, M. Okanishi and H. Umezawa, J. Gen. Microbiol., 90, 336-346, 1975.
678. Effect of protease inhibitors on focus formation by murine sarcoma virus.: Y. Yuasa, H. Shimojo, T. Aoyagi and H. Umezawa, J. Natl. Cancer Inst., 54, 1255-1256, 1975.
679. Serum dopamine β -hydroxylase activity in developing spontaneously hypertensive rats and the effect of salt administration.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, H. Umezawa and T. Takeuchi, Jpn. Heart J., 16, 324-325, 1975.
680. Chemie und Wirkungsmechanismus von Bleomycin.: H. Umezawa, "Bleomycin. Experimentelle Grundlagen und erste klinische Ergebnisse," Heinrich Neck Nachf., Jllertissen/Bayern (1975), pp. 11-26.
681. Methode zur Bestimmung der Bleomycin-inaktivierenden Enzymaktivität in Geweben.: W. E. G. Müller, A. Totsuka, R. K. Zahn and H. Umezawa, Z. Krebsforsch., 83, 151-162, 1975.
682. Neothramycins A and B, new antitumor antibiotics.: T. Takeuchi, M. Miyamoto, M. Ishizuka, H. Naganawa, S. Kondo, M. Hamada and H. Umezawa, J. Antibiot., 29, 93-96, 1976.
683. Bestatin, an inhibitor of aminopeptidase B, produced by actinomycetes.: H. Umezawa, T. Aoyagi, H. Suda, M. Hamada and T. Takeuchi, J. Antibiot., 29, 97-99, 1976.
684. The structure of bestatin.: H. Suda, T. Takita, T. Aoyagi and H. Umezawa, J. Antibiot., 29,

100-101, 1976.

685. X-ray structure determination of (2S,3R)-3-amino-2-hydroxy-4-phenylbutanoic acid, a new amino acid component of bestatin.: H. Nakamura, H. Suda, T. Takita, T. Aoyagi, H. Umezawa and Y. Iitaka, J. Antibiot., 29, 102-103, 1976.
686. Purification of aminoglycoside 3'-phosphotransferase II.: Y. Matsuhashi, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 29, 204-207, 1976.
687. Syntheses and properties of negamycin analogs modified the δ -hydroxy- β -lysine moiety.: S. Kondo, K. Iinuma, K. Yoshida, K. Yokose, Y. Ikeda, M. Shimazaki and H. Umezawa, J. Antibiot., 29, 208-211, 1976.
688. Inhibition of the initial dipeptide synthesis of globin chains by the antibiotic enomycin in the reticulocyte lysate.: S. Mizuno and H. Umezawa, J. Antibiot., 29, 309-315, 1976.
689. Further purification and characterization of macromycin.: T. Yamashita, N. Naoi, K. Watanabe, T. Takeuchi and H. Umezawa, J. Antibiot., 29, 415-423, 1976.
690. The chemical synthesis of bestatin.: H. Suda, T. Takita, T. Aoyagi and H. Umezawa, J. Antibiot., 29, 600-601, 1976.
691. Structure of a new isoflavone from fungi and streptomyces inhibiting dopa decarboxylase.: H. Tobe, H. Naganawa, T. Takita, T. Takeuchi and H. Umezawa, J. Antibiot., 29, 623-625, 1976.
692. Inhibitory activity of pyridindolol on β -galactosidase.: M. Kumagai, T. Aoyagi and H. Umezawa, J. Antibiot., 29, 696-703, 1976.
693. Chemistry of bleomycin. XV. Absolute configuration of β -amino- β -(4-amino-6-carboxy-5-methylpyrimidin-2-yl)-propionic acid, an amine component of bleomycin.: H. Nakamura, T. Yoshioka, T. Takita, H. Umezawa, Y. Muraoka and Y. Iitaka, J. Antibiot., 29, 762-764, 1976.
694. Chemistry of bleomycin. XVI. *epi*-Bleomycin.: M. Kunishima, T. Fujii, Y. Nakayama, T. Takita and H. Umezawa, J. Antibiot., 29, 853-856, 1976.
695. Enhancement of delayed-type hypersensitivity by bestatin an inhibitor of aminopeptidase B and leucine aminopeptidase.: H. Umezawa, M. Ishizuka, T. Aoyagi and T. Takeuchi, J. Antibiot., 29, 857-859, 1976.
696. Dehydrocaffeic acid dilactone, an inhibitor of catechol-O-methyl transferase.: Y. Kumada, H. Naganawa, H. Iinuma, M. Matsuzaki, T. Takeuchi and H. Umezawa, J. Antibiot., 29, 882-889, 1976.
697. Structure-activity relationships among negamycin analogs.: Y. Uehara, M. Hori, S. Kondo, M. Hamada and H. Umezawa, J. Antibiot., 29, 937-943, 1976.
698. Synthesis of 3"-deoxydihydrostreptomycin active against resistant bacteria.: H. Sano, T. Tsuchiya, S. Kobayashi, M. Hamada, S. Umezawa and H. Umezawa, J. Antibiot., 29, 978-980, 1976.
699. Studies on marine macroorganisms. V. A new antibiotic, aplasmomycin, produced by a streptomycete isolated from shallow sea mud.: Y. Okami, T. Okazaki, T. Kitahara and H. Umezawa, J. Antibiot., 29, 1019-1025, 1976.
700. The revised structure of bottromycin A₂.: Y. Takahashi, H. Naganawa, T. Takita, H. Umezawa and S. Nakamura, J. Antibiot., 29, 1120-1123, 1976.
701. Immunological studies of aminoglycoside 3'-phosphotransferases.: Y. Matsuhashi, T. Sawa, T. Takeuchi and H. Umezawa, J. Antibiot., 29, 1127-1128, 1976.
702. Localization of aminoglycoside 3'-phosphotransferase II on a cellular surface of R factor resistant *Escherichia coli*.: Y. Matsuhashi, T. Sawa, T. Takeuchi, H. Umezawa and I. Nagatsu, J. Antibiot., 29, 1129-1130, 1976.

703. Syntheses of 6',5'',6'''-triamino-6',5'',6'''-trideoxylividomycin A and 6',5''-diamino-6',5''-dideoxylividomycin B.: S. Kondo, H. Yamamoto, K. Iinuma, K. Maeda and H. Umezawa, J. Anti-biot., 29, 1134-1136, 1976.
704. The crystal and molecular structures of oxoformycin B and formycin B.: G. Koyama, H. Nakamura, H. Umezawa and Y. Iitaka, Acta Crystallogr., Sect. B, 32, 813-820, 1976.
705. Xanthosine dihydrate.: G. Koyama, H. Nakamura, H. Umezawa and Y. Iitaka, Acta Crystallogr., Sect. B, 32, 969-972, 1976.
706. The crystal and molecular structure of coformycin.: H. Nakamura, G. Koyama, H. Umezawa and Y. Iitaka, Acta Crystallogr., Sect. B, 32, 1206-1212, 1976.
707. The reaction mechanism of rat liver glyoxalase I and its inhibition by MS-3.: S. Kurasawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 40, 559-566, 1976.
708. The crystal and molecular structure of a dibromo-derivative of MS-3: a glyoxalase I inhibitor produced by a mushroom, Stereum hirsutum.: H. Nakamura, Y. Iitaka, S. Kurasawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 40, 1781-1784, 1976.
709. Inhibition of aminopeptidase B and leucine aminopeptidase by bestatin and its stereoisomer.: H. Suda, T. Aoyagi, T. Takeuchi and H. Umezawa, Arch. Biochem. Biophys., 177, 196-200, 1976.
710. Aminopeptidase activities on the surface of mammalian cells.: T. Aoyagi, H. Suda, M. Nagai, K. Ogawa, J. Suzuki, T. Takeuchi and H. Umezawa, Biochim. Biophys. Acta, 452, 131-143, 1976.
711. Specific inhibition of the termination process of protein synthesis by negamycin.: Y. Uehara, M. Hori and H. Umezawa, Biochim. Biophys. Acta, 442, 251-262, 1976.
712. Inhibitory effect of negamycin on polysomal ribosomes of Escherichia coli.: Y. Uehara, M. Hori and H. Umezawa, Biochim. Biophys. Acta, 447, 406-412, 1976.
713. A synthesis of 3',4'-dideoxykanamycin B.: T. Miyake, T. Tsuchiya, S. Umezawa and H. Umezawa, Carbohydr. Res., 49, 141-151, 1976.
714. Structure-activity study on the kasugamycin family.: M. Hori, K. Suzukake, Y. Uehara and H. Umezawa, "Chemotherapy. Vol. 3," Plenum Publishing (1976), pp. 43-46.
715. Effects of protease-inhibitors of microbial origin on experimental carcinogenesis.: T. Matsushima, T. Kakizoe, T. Kawachi, K. Hara, T. Sugimura, T. Takeuchi and H. Umezawa, "Fundamentals in Cancer Prevention," Univ. Tokyo Press (1976), pp. 57-69.
716. Structures and activities of protease inhibitors of microbial origin.: H. Umezawa, "Methods in Enzymology. Vol. 45, Proteolytic Enzymes, Part B," L. Lorand, Ed., Academic Press, New York (1976), pp. 678-695.
717. Screening of enzyme inhibitors with potential antitumor activity.: H. Umezawa, "Chemotherapy. Vol. 7," Plenum Publishing (1976), pp. 295-298.
718. Characterization of the bleomycin action on DNA.: H. Umezawa, H. Asakura and M. Hori, "Chemotherapy. Vol. 8," Plenum Publishing (1976), pp. 165-168.
719. Structure and action of bleomycin.: H. Umezawa, Prog. Biochem. Pharmacol., 11, 18-27, 1976.
720. Bleomycin: discovery, chemistry, and action.: H. Umezawa, "Cann Monograph on Cancer Research 19. Fundamental and Clinical Studies of Bleomycin," Univ. Tokyo Press (1976), pp. 3-36.
721. Vascular and brain dopamine β -hydroxylase activity in young spontaneously hypertensive rats.: T. Nagatsu, K. Ikuta, Y. Numata, T. Kato, M. Sano, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, Science, 191, 290-291, 1976.
722. Dopamine β -hydroxylase and tyrosine hydroxylase activities in spontaneously hypertensive rats (SHR): microbial hypotensive products.: T. Kato, T. Nagatsu, Y. Numata, K. Ikuta, M. Sano, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, Clinical Experi. Pharmacol.

- Physiol. (Suppl.), 3, 109-112, 1976.
723. Chemical modification of coriolin B.: Y. Nishimura, Y. Koyama, S. Umezawa, T. Takeuchi, M. Ishizuka and H. Umezawa, J. Antibiot., 30, 59-65, 1977.
724. Distribution of chloramphenicol acetyltransferase and chloramphenicol-3-acetate esterase among Streptomyces and Corynebacterium.: H. Nakano, Y. Matsubashi, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 76-82, 1977.
725. Biochemical study of minosaminomycin in relation to the kasugamycin group antibiotics.: K. Suzukake, M. Hori, Y. Uehara, K. Iinuma, M. Hamada and H. Umezawa, J. Antibiot., 30, 132-140, 1977.
726. Chemistry of bleomycin. XVII. Chemical proof for the β -lactam of bleomycin.: Y. Muraoka, A. Fujii, T. Yoshioka, T. Takita and H. Umezawa, J. Antibiot., 30, 178-181, 1977.
727. Structure and synthesis of neothramycin.: M. Miyamoto, S. Kondo, H. Naganawa, K. Maeda, M. Ohno and H. Umezawa, J. Antibiot., 30, 340-343, 1977.
728. Chemistry of bleomycin. XVIII. Carbon-13 NMR studies.: H. Naganawa, Y. Muraoka, T. Takita and H. Umezawa, J. Antibiot., 30, 388-396, 1977.
729. Reductive cleavage of anthracycline glycosides by microsomal nadphcytochrome C reductase.: T. Oki, T. Komiyama, H. Tone, T. Inui, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 613-615, 1977.
730. New anthracycline antibiotics, rhodirubins.: I. Kitamura, N. Shibamoto, T. Oki, T. Inui, H. Naganawa, M. Ishizuka, T. Masuda, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 616-618, 1977.
731. Baumycins, new antitumor antibiotics related to daunomycin.: T. Komiyama, Y. Matsuzawa, T. Oki, T. Inui, Y. Takahashi, H. Naganawa, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 619-621, 1977.
732. The structure of baumycins A1, A2, B1, B2, C1 and C2.: Y. Takahashi, H. Naganawa, T. Takeuchi, H. Umezawa, T. Komiyama, T. Oki and T. Inui, J. Antibiot., 30, 622-624, 1977.
733. A tryptophan hydroxylase inhibitor produced by a streptomycete: 2,5-dihydro-L-phenylalanine.: K. Okabayashi, H. Morishima, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 675-677, 1977.
734. Production of nineteen anthracyclic compounds by Streptomyces galilaeus MA144-M1.: T. Oki, N. Shibamoto, Y. Matsuzawa, T. Ogasawara, A. Yoshimoto, I. Kitamura, T. Inui, H. Naganawa, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 683-687, 1977.
735. Isolation and structure of a β -lactamase inhibitor from streptomycetes.: K. Maeda, S. Takahashi, M. Sezaki, K. Iinuma, H. Naganawa, S. Kondo, M. Ohno and H. Umezawa, J. Antibiot., 30, 770-772, 1977.
736. Intracellular reduction of the cupric ion of bleomycin copper complex and transfer of the cuprous ion to a cellular protein.: K. Takahashi, O. Yoshioka, A. Matsuda and H. Umezawa, J. Antibiot., 30, 861-869, 1977.
737. 3-epi-Deoxynegamycin and leucyl-3-epi-deoxynegamycin produced by streptomycetes.: S. Kondo, K. Yoshida, T. Ikeda, K. Iinuma, Y. Honma, M. Hamada and H. Umezawa, J. Antibiot., 30, 1137-1139, 1977.
738. Structures of pluramycin A and neopluramycin.: S. Kondo, M. Miyamoto, H. Naganawa, T. Takeuchi and H. Umezawa, J. Antibiot., 30, 1143-1145, 1977.
739. Elimination of the ability of a kanamycin-producing strain to biosynthesize deoxystreptamine moiety by acriflavine.: K. Hotta, Y. Okami and H. Umezawa, J. Antibiot., 30, 1146-1149, 1977.

740. Syntheses and properties of kanamycin C derivatives active against resistant bacteria.: S. Kondo, T. Miyasaka, K. Yoshida, K. Iinuma and H. Umezawa, J. Antibiot., 30, 1150-1152, 1977.
741. Enzyme inhibitors in relation to cancer therapy.: T. Aoyagi, M. Ishizuka, T. Takeuchi and H. Umezawa, Jap. J. Antibiot., 30 (Suppl.), 121-132, 1977.
742. Recent advances in bioactive microbial secondary metabolites.: H. Umezawa, Jap. J. Antibiot., 30 (Suppl.), 138-163, 1977.
743. Protease inhibitors produced by microorganisms.: H. Umezawa, Acta Biol. Med. Germ., 36, 1899-1915, 1977.
744. Tetra-O-methyldehydrodicaffeic acid dilactones, (+) and (-) isomers.: H. Nakamura, Y. Iitaka, Y. Kumada, T. Takeuchi and H. Umezawa, Acta Crystallogr. B33, 1260-1263, 1977.
745. Purification and properties of a dehydrodicaffeic acid dilactone-forming enzyme from a mushroom, Inonotus sp. K-1410.: Y. Kumada, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 869-876, 1977.
746. Characterization of the dehydrodicaffeic acid dilactone-forming enzyme and the enzymic and chemical synthesis of this mushroom product.: Y. Kumada, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 877-885, 1977.
747. Reticulol, an inhibitor of cyclic nucleotide phosphodiesterases.: Y. Furutani, M. Shimada, M. Hamada, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 989-993, 1977.
748. Isolation and structure of new isocoumarins.: Y. Furutani, H. Naganawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 1179-1183, 1977.
749. Biosynthetic studies of reticulol, an isocoumarin, by ¹³C-NMR spectroscopy.: Y. Furutani, I. Tsuchiya, H. Naganawa, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 1581-1585, 1977.
750. Inhibition of cyclic nucleotide phosphodiesterases by reticulol.: Y. Furutani, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 41, 1587-1592, 1977.
751. Bestatin, a new specific inhibitor of aminopeptidases, enhances activation of small lymphocytes by concanavalin A.: M. Saito, T. Aoyagi, H. Umezawa and Y. Nagai, Biochem. Biophys. Res. Commun., 76, 526-533, 1977.
752. Microbial secondary metabolites with potential use in cancer treatment (Plasmid involvement in biosynthesis and compounds):. H. Umezawa, Biomedicine, 26, 236-249, 1977.
753. Synthesis of a masked derivative of 3'-deoxydihydrostreptobiosamine, a precursor for the synthesis of 3"-deoxydihydrostreptomycin.: H. Sano, T. Tsuchiya, S. Kobayashi, H. Umezawa and S. Umezawa, Bull. Chem. Soc. Jpn., 50, 975-978, 1977.
754. A synthesis of 3',4'-dideoxykanamycin B.: T. Nishimura, T. Tsuchiya, S. Umezawa and H. Umezawa, Bull. Chem. Soc. Jpn., 50, 1580-1583, 1977.
755. Total synthesis of minosaminomycin.: K. Iinuma, S. Kondo, K. Maeda and H. Umezawa, Bull. Chem. Soc. Jpn., 50, 1850-1854, 1977.
756. Correlation between serum dopamine- β -hydroxylase activity and dopamine- β -hydroxylase and tyrosine hydroxylase activities in central and peripheral adrenergic neurons and adrenal glands.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, M. Sano, I. Nagatsu, T. Takeuchi, M. Matsuzaki and H. Umezawa, Experientia, 33, 581-683, 1977.
757. Effect of leupeptin on induction of lymphoblastic leukemia in mice by N-nitrosobutylurea.: T. Kakizoe, T. Sano, T. Kawachi, T. Sugimura, T. Takeuchi and H. Umezawa, Gann, 68, 281-285, 1977.
758. Antitumor activity of new anthracycline antibiotics, aclacinomycin-A and its analogs, and

- their toxicity.: S. Hori, M. Shirai, S. Harano, T. Oki, T. Inui, S. Tsukagoshi, M. Ishizuka, T. Takeuchi and H. Umezawa, Gann, 68, 685-690, 1977.
759. Synthesis and structure-activity relationships of bestatin analogues, inhibitors of aminopeptidase B.: R. Nishizawa, T. Saino, T. Takita, H. Suda, T. Aoyagi and H. Umezawa, J. Med. Chem., 20, 510-515, 1977.
760. Further studies on the effect of leupeptin, a protease inhibitor on induction of bladder tumors in rats by N-butyl-N-(4-hydroxybutyl)nitrosamine.: T. Kakizoe, H. Esumi, T. Kawachi, T. Sugimura, T. Takeuchi and H. Umezawa, J. Natl. Cancer Inst., 59, 1503-1508, 1977.
761. Recent studies on bleomycin.: H. Umezawa, J. Natural Products (Lloydia), 40, 67-81, 1977.
762. Noradrenaline-synthesizing enzymes in brain, serum, sympathetically innervated tissues, and adrenals of spontaneously hypertensive rats.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, M. Sano, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, Jap. Heart J., 18, 583, 1977.
763. Norepinephrine-synthesizing enzymes in brain, adrenals and peripheral sympathetic nerves of spontaneously hypertensive rats.: T. Nagatsu, T. Kato, Y. Numata, K. Ikuta, M. Sano, I. Nagatsu, H. Umezawa, M. Matsuzaki and T. Takeuchi, Jap. J. Pharmacol., 27, 531-535, 1977.
764. Activities of proteinase inhibitors of microbial origin.: H. Umezawa and T. Aoyagi, "Proteinases in Mammalian Cells and Tissues," Barrett, Ed., Elsevier, North-Holland (1977), pp. 637-662.
765. The revised structure of bottromycin A₂.: Y. Takahashi, H. Naganawa, T. Takita, H. Umezawa and S. Nakamura, "Peptide Chemistry 1976," T. Nakajima, Ed., Protein Research Foundation, Osaka (1977), pp. 117-121.
766. Biosynthesis of leupeptin.: M. Hori, H. Hemmi, K. Suzukake, H. Hayashi, Y. Uehara, T. Takeuchi and H. Umezawa, J. Antibiot., 31, 95-98, 1978.
767. Transfer of the leupeptin-producing ability of the strain, Streptomyces roseus MA839-A1, by conjugation.: H. Umezawa, Y. Okami and K. Hotta, J. Antibiot., 31, 99-102, 1978.
768. Biochemical activities of the derivatives of dehydrodicaffeic acid dilactone.: Y. Kumada, H. Naganawa, T. Takeuchi, H. Umezawa, K. Yamashita and K. Watanabe, J. Antibiot., 31, 105-111, 1978.
769. DNA structures required for bleomycin binding.: H. Asakura, H. Umezawa and M. Hori, J. Antibiot., 31, 156-158, 1978.
770. Forphenicine, an inhibitor of alkaline phosphatase produced by actinomycetes.: T. Aoyagi, T. Yamamoto, K. Kojiri, F. Kojima, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 31, 244-246, 1978.
771. The structure of forphenicine.: T. Yamamoto, K. Kojiri, H. Morishima, H. Naganawa, T. Aoyagi and H. Umezawa, J. Antibiot., 31, 483-484, 1978.
772. Amastatin, an inhibitor of aminopeptidase A, produced by actinomycetes.: T. Aoyagi, H. Tobe, F. Kojima, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 31, 636-638, 1978.
773. Esterastin, an inhibitor of esterase, produced by actinomycetes.: H. Umezawa, T. Aoyagi, T. Hazato, K. Uotani, F. Kojima, M. Hamada and T. Takeuchi, J. Antibiot., 31, 639-641, 1978.
774. The structure of esterastin, an inhibitor of esterase.: S. Kondo, M. Uotani, M. Miyamoto, T. Hazato, H. Naganawa, T. Aoyagi and H. Umezawa, J. Antibiot., 31, 797-800, 1978.
775. Chemistry of bleomycin. XIX. Revised structures of bleomycin and phleomycin.: T. Takita, Y. Muraoka, T. Nakatani, A. Fujii, Y. Umezawa, H. Naganawa and H. Umezawa, J. Antibiot., 31, 801-814, 1978.
776. Chemistry of bleomycin. XX. The X-ray structure determination of P-3A Cu(II)-complex. A biosynthetic intermediate of bleomycin.: Y. Iitaka, H. Nakamura, T. Nakatani, Y. Muraoka, A.

- Fujii, T. Takita and H. Umezawa, J. Antibiot., 31, 1070-1072, 1978.
777. Chemistry of bleomycin. XXI. Metal-complex of bleomycin and its implication for the mechanism of bleomycin action.: T. Takita, Y. Muraoka, T. Nakatani, A. Fujii, Y. Iitaka and H. Umezawa, J. Antibiot., 31, 1073-1077, 1978.
778. Chemistry of bleomycin. XXII. Interaction of bleomycin with nucleic acids, preferential binding to guanine base and electrostatic effect of the terminal amine.: H. Kasai, H. Naganawa, T. Takita and H. Umezawa, J. Antibiot., 31, 1316-1320, 1978.
779. Advances in bioactive microbial secondary metabolites useful in the treatment of cancer.: H. Umezawa, "Advances in Cancer Chemotherapy," S. T. Carter & A. Goldin, Ed., Jpn. Sci. Soc. Press, Tokyo (1978), pp. 27-52.
780. Recent advances in antitumor antibiotics.: H. Umezawa, "Antibiotics and Chemotherapy. Vol. 23. Fundamentals in Cancer Chemotherapy," F. M. Schabel, Jr. & B. Ala, Ed., S. Karger, (1978), pp. 76-87.
781. Isolation and characterization of PDE-I and II, the inhibitors of cyclic adenosine-3',5'-monophosphate phosphodiesterase.: Y. Enomoto, Y. Furutani, H. Naganawa, M. Hamada, T. Takeuchi and H. Umezawa, Agric. Biol. Chem., 42, 1331-1336, 1978.
782. Crystal and molecular structures of monomethyl esters of PED-I and PED-II, new inhibitors of cyclic adenosine-3',5'-monophosphate phosphodiesterase.: H. Nakamura, Y. Enomoto, T. Takeuchi, H. Umezawa and Y. Iitaka, Agric. Biol. Chem., 42, 1337-1342, 1978.
783. Inhibition of DNA synthesis by griseolutein in Escherichia coli through a possible interaction at the cell surface.: M. Hori, S. Nozaki, K. Nagami, H. Asakura and H. Umezawa, Biochim. Biophys. Acta, 521, 101-110, 1978.
784. Release of a plasma membrane-bound triaminopeptidase activity from mammalian cells by thermolysin.: T. Aoyagi, H. Suda, M. Nagai, H. Tobe, J. Suzuki, T. Takeuchi and H. Umezawa, Biochem. Biophys. Res. Commun., 80, 435-442, 1978.
785. NADH-dependent cinerulose reductase in rat liver microsomes.: T. Komiyama, T. Oki, T. Inui, T. Takeuchi and H. Umezawa, Biochem. Biophys. Res. Commun., 82, 188-195, 1978.
786. Aminopeptidase activities on the surface of mammalian cells and their alterations associated with transformation.: T. Aoyagi, M. Nagai, M. Iwabuchi, W.-S. Liaw, T. Andoh and H. Umezawa, Cancer Res., 38, 3505-3508, 1978.
787. Stimulatory effect of bestatin, a new specific inhibitor of aminopeptidases, on the blastogenesis of guinea pig lymphocytes.: M. Saito, K. Takegoshi, T. Aoyagi, H. Umezawa and Y. Nagai, Cell. Immunol., 40, 247-264, 1978.
788. Recent studies on antitumor antibiotics.: H. Umezawa, "Advances in Pharmacology and Therapeutics. Vol. 10. Chemotherapy," M. Adolphe, Ed., Pergamon Press, Oxford and New York (1978), pp. 127-135.
789. Recent studies on biochemistry and action of bleomycin.: H. Umezawa, "Bleomycin: Current Status and New Developments," Academic Press (1978), pp. 15-19.
790. Microbial secondary metabolites.: H. Umezawa, "Guidelines to Antibiotic Therapy. Vol. 4," The Upjohn Co. (1978), pp. 2-4.
791. Influence of coformycin on the cytostatic activity of 9- β -D-arabinofuranosyladenine and adenosine in mouse L5178y cells.: W. E. G. Müller, R. K. Zahn, J. Arendes, A. Maidhof and H. Umezawa, Hoppe-Seyler's Z. Physiol. Chem., 359, 1287-1295, 1978.
792. Biosynthesis of neothramycin.: M. Miyamoto, T. Sawa, S. Kondo, T. Takeuchi and H. Umezawa, J. Ferment. Technol., 56, 329-333, 1978.
793. New plasmid-mediated phosphorylation of gentamicin C in Staphylococcus aureus.: H. Kawabe,

- H. Naganawa, S. Kondo, H. Umezawa and S. Mitsuhashi, Microbiol. Immunol., 22, 515-521, 1978.
794. Chemistry of pheganomycins, new peptide antibiotics.: T. Takita, N. Shimada, N. Yagisawa, K. Kato, H. Naganawa, K. Maeda and H. Umezawa, "Peptide Chemistry 1977," T. Shiba, Ed., Protein Research Foundation, Osaka (1978), pp. 121-126.
795. New microbial secondary metabolites under preclinical development for cancer treatment.: H. Umezawa, "Recent Results in Cancer Research. Vol. 63," S. K. Carter, Ed., Springer-Verlag (1978), pp. 120-134.
796. Biological studies on the degradation products of 3-[(S)-1'-phenylethylamino]propylamino-bleomycin: A novel analog (pepleomycin).: K. Takahashi, H. Ekimoto, S. Aoyagi, A. Koyu, H. Kuramochi, O. Yoshioka, A. Matsuda, A. Fujii and H. Umezawa, J. Antibiot., 32, 36-42, 1979.
797. p-Hydroxyphenylacetaldoxime, an inhibitor of β -galactosidase, produced by actinomycetes.: T. Hazato, M. Kumagai, H. Naganawa, T. Aoyagi and H. Umezawa, J. Antibiot., 32, 91-93, 1979.
798. A new broad-spectrum aminoglycoside antibiotic complex, sporaricin. III. The structures of sporaricins A and B.: T. Deushi, M. Nakayama, I. Watanabe, T. Mori, H. Naganawa and H. Umezawa, J. Antibiot., 32, 187-192, 1979.
799. Studies on relationships between the structure and the glycosidase-inhibiting activity of HPAAO and its analogs.: T. Hazato, T. Aoyagi and H. Umezawa, J. Antibiot., 32, 212-216, 1979.
800. β -Galactosidase-inhibiting new isoflavonoids produced by actinomycetes.: T. Hazato, H. Naganawa, M. Kumagai, T. Aoyagi and H. Umezawa, J. Antibiot., 32, 217-222, 1979.
801. Studies on auromomycin.: T. Yamashita, N. Naoi, T. Hidaka, K. Watanabe, Y. Kumada, T. Takeuchi and H. Umezawa, J. Antibiot., 32, 330-339, 1979.
802. New anthracyclic antibiotics roseorubicins A and B.: Y. Matsuzawa, A. Yoshimoto, T. Oki, T. Inui, T. Takeuchi and H. Umezawa, J. Antibiot., 32, 420-424, 1979.
803. Enzymatic conversion of aclacinomycin A to Y by a specific oxidoreductase in Streptomyces.: A. Yoshimoto, T. Ogasawara, I. Kitamura, T. Oki, T. Inui, T. Takeuchi and H. Umezawa, J. Antibiot., 32, 472-481, 1979.
804. Biosynthesis of leupeptin. II. Purification and properties of leupeptin acid synthetase.: K. Suzukake, T. Fujiyama, H. Hayashi, M. Hori and H. Umezawa, J. Antibiot., 32, 523-530, 1979.
805. Synthesis of isocoformycin, an adenosine deaminase inhibitor of synthetic origin.: M. Shimazaki, S. Kondo, K. Maeda, M. Ohno and H. Umezawa, J. Antibiot., 32, 537-538, 1979.
806. Chemistry of bleomycin. XXIII. Natural abundance ^{15}N -NMR spectroscopic evidence for the structure of bleomycin.: H. Naganawa, T. Takita, H. Umezawa and W. E. Hull, J. Antibiot., 32, 539-541, 1979.
807. Studies on inhibition of adenosine deaminase by isocoformycin in vitro and in vivo.: M. Shimazaki, Y. Kumada, T. Takeuchi, H. Umezawa and K. Watanabe, J. Antibiot., 654-658, 1979.
808. Chemistry of bleomycin. XXIV. Deamido bleomycin from viewpoint of metal coordination and oxygen activation.: Y. Sugiura, Y. Muraoka, A. Fujii, T. Takita and H. Umezawa, J. Antibiot., 32, 756-758, 1979.
809. New antibiotics, clazamycins A and B.: Y. Horiuchi, S. Kondo, T. Ikeda, D. Ikeda, K. Miura, M. Hamada, T. Takeuchi and H. Umezawa, J. Antibiot., 32, 762-764, 1979.
810. Crystal and molecular structure of clazamycin A.: H. Nakamura, Y. Iitaka and H. Umezawa, J. Antibiot., 32, 765-767, 1979.
811. A new antibiotic, 2-hydroxy-5-iminoazacyclopent-3-ene.: A. Okuyama, S. Kondo, T. Ikeda, K.

- Miura, M. Hamada and H. Umezawa, J. Antibiot., 32, 768-770, 1979.
812. Structure and chemical synthesis of amastatin.: H. Tobe, H. Morishima, H. Naganawa, T. Takita, T. Aoyagi and H. Umezawa, Agric. Biol. Chem., 43, 591-596, 1979.
813. Cancer drugs of microbial origin.: H. Umezawa, "Methods in Cancer Research. Vol. XVI," Academic Press (1979), pp. 43-72.

BOOKS IN ENGLISH

1. Recent Advances in Chemistry and Biochemistry of Antibiotics.: H. Umezawa, Microbial Chemistry Research Foundation, Tokyo, 1964.
2. Fundamental findings on kasugamycin.: H. Umezawa, "Symposium on Kasugamycin. Fundamental and Clinical Studies," Microbial Chemistry Research Foundation, Tokyo (1966), pp. 3-19.
3. Index of Antibiotics from Actinomycetes.: H. Umezawa, Ed., University of Tokyo Press, 1967.
4. Enzyme Inhibitors of Microbial Origin.: H. Umezawa, University of Tokyo Press, Tokyo 1972.
5. Index of Antibiotics from Actinomycetes. Vol. II.: H. Umezawa, Ed., Jpn. Sci. Soc. Press, 1978.