

PUBLICATIONS

BOOKS

1. **Seligsohn U.**, Rimon, A., Horoszowski H. Eds. Hemophilia. Castle House Publications, London, 1981, pp. 245.
2. Beutler E, Lichtman MA, Coller BS, Kipps TJ, **Seligsohn U.** Eds. Williams Hematology. Sixth Edition. McGraw-Hill, N.Y. January 2001.

CHAPTERS IN BOOKS

1. **Seligsohn U.** Factor XI (PTA) Deficiency in Genetic Diseases Among Ashkenazi Jews. Goodman RM and Motulsky AG, Eds. Raven press, 1979, pp. 141-148.
2. Farine I, Horoszowski, H, **Seligsohn U**, Heim M. Laser Surgery In Hemophilic Patients in FF Palazzi Tratamiento Ortopedico de Las Lesiones Hemophilicas del Aparato Locomotor, 1980.
3. Horoszowski H, Heim M, **Seligsohn U**, Farine I. The Use of the Laser Scalpel in Orthopedic Surgery on Hemophilic Patients in Hemophilia, **Seligsohn U**, Horoszowski H, Rimon A, Eds. Castle House Publication, London, 1981, pp. 189-193.
4. **Seligsohn U.** Combined Factors V and VIII Deficiency in Factor VIII - von Willebrand Factor, Volume II. Seghachian MJ, Savidge GF, Eds. CRC Press, Inc., Boca Raton, USA, 1989, pp. 89-100.
5. **Seligsohn U**, Mibashan RS, Rodeck CH, Nicolaides KH, Millar DS, Coller BS. Prevention Program of Type I Glanzmann Thrombasthenia in Israel: Prenatal Diagnosis in Current Studies in Hematology and Blood Transfusion. Karger, Basel, Switzerland. 55:174-179, 1988.
6. **Seligsohn U**, Ben-Tal O. Hereditary tendencies of thrombosis and their frequency distribution in Hemorrhages et thromboses en Pediatrie, Schlegel N, Beaufils F, Eds. Seminaires de l'Hopital Bretonneau. Reanimation urgences Pediatric. Arnette Paris, 1988, pp. 215-219.
7. Asakai R, Chung DW, Davie EW, **Seligsohn U.** Heterogeneity of Factor XI Deficiency in Ashkenazi Jews in Genetic Diversity Among Jews. Bonne-Tamir B, Adam A, Eds. Oxford University Press 1992, pp. 150-153.
8. **Seligsohn U**, Peretz H, Newman PJ, Coller BS. Glanzmann Thrombasthenia in Israel: Clinical, Biochemical, and Molecular Genetic Characterization in Genetic Diversity Among Jews. Bonne-Tamir B, Adam A, Eds. Oxford University Press 1992, pp. 275-282.
9. **Seligsohn U.** Disseminated Intravascular Coagulation in Williams Hematology. Beutler E, Lichtman MA, Kipps TJ, Coller BS, Eds. Fifth Edition, McGraw-Hill, 1995, pp. 1497-1516.

10. **Seligsohn U**, Griffin JH. Contact Phase and Factor XI in The metabolic and Molecular Basis of Inherited Diseases. Scriver CR, Beaudet AL, Sly WS, Valle D, Eds. 7th Edition. McGraw-Hill, 1995, pp. 3289-3311.
11. **Seligsohn U**. Disseminated Intravascular Coagulation in Blood: Principles and practice of hematology. Handin RI, Lux SE, Stossel TP, Eds. JB Lippincott Company, Philadelphia 1995. pp. 1289-1317.
12. **Seligsohn U**, White G. Inherited Deficiencies of Coagulation Factors II, V, VII, XI and XIII, and the Combined Deficiencies of Factors V and VIII, and of the Vitamin K Dependent Factors in: Williams Hematology, 6th edition McGraw-Hill, N.Y. 2000 (in press).
13. **Seligsohn U**. Disseminated Intravascular Coagulation in Williams Hematology 6th edition McGraw-Hill, N.Y. 2000 (in press),
14. **Seligsohn U**, Coller BS. Classification, Clinical Manifestations and Evaluation of Disorders of Hemostasis in: Williams Hematology, 6th edition. McGraw-Hill, N.Y. 2000 (in press).
15. Beutler E, Lichtman MA, Coller BS, Kipps TJ, **Seligsohn U**. Approach to the Patient in Williams Hematology, 6th edition. McGraw-Hill, N.Y. 2000 (in press).

ARTICLES

1. Zahavi J, **Seligsohn U**. Unusual course of infectious mononucleosis. J Amer Med Ass 200:1181-1183, 1967.
2. Ben-Bassat I, **Seligsohn U**, Leiba H, Leef FF, Chaitchick S, Ramot B. Sequestration studies with chromium-51 labelled red cells as criteria for splenectomy. Isr J Med Sci 3:832-837, 1967.
3. **Seligsohn U**, Ramot B. Chronic monocytic leukemia: A case with an eight year survival. Isr J Med Sci 3:868-874, 1967.
4. **Seligsohn U**, Ramot B. Angiopathic hemolytic anemia: Report of five cases and review of the literature. Harefuah 74:39-44, 1968.

5. **Seligsohn U**, Weber H, Yoran D, Horowitz A, Ramot B. Microangiopathic hemolytic anemia and defibrillation syndrome in metastatic carcinoma of the stomach. *Isr J Med Sci* 4:69-75, 1968.
6. **Seligsohn U**, Ramot B. Clinical and pathological aspects of the defibrillation syndrome and primary fibrinolysis. *Harefuah* 76:391-396, 1969.
7. **Seligsohn U**, Ramot B. Combined factor V and factor VIII deficiency. Report of four cases. *Brit J Haemat* 16:475-486, 1969.
8. **Seligsohn U**, Shani M, Ramot B, Adam A, Sheba C. Hereditary deficiency of blood clotting factor VII and Dubin-Johnson syndrome in an Israeli family. *Isr J Med Sci* 5:1060-1065, 1969.
9. **Seligsohn U**. Polycytemia, hypertension, prolonged fever, tumor in epigastrium, and progressive heart failure. *Harefuah* 76:302-307, 1969.
10. Shani M, **Seligsohn U**. Familial hyperbilirubinemia. *Harefuah* 77:477-579, 1969.
11. Revach M, Kabil S, Zemer D, **Seligsohn U**. Massive sublingual hemorrhage due to Coumadin causing suffocation. *Harefuah* 78:597-598, 1970.
12. **Seligsohn U**, Shani M, Ramot B. Gilbert syndrome and factor VII deficiency. (letter), *Lancet* 1:1938, 1970
13. **Seligsohn U**, Peyser MR, Toaff R, Shani M, Ramot B. Severe hereditary factor VII deficiency during pregnancy. Evidence for the absence of transplacental diffusion of factor VII. *Thromb Diath Haemorrh* 24:146-151, 1970.
14. Shani M, **Seligsohn U**, Gilon E, Sheba C, Adam A. Dubin-Johnson syndrome in Israel. I. Clinical and genetic aspects in 101 cases. *Quart J Med* 39:549-567, 1970.
15. **Seligsohn U**, Shani M, Ramot B, Adam A, Sheba C. Dubin-Johnson syndrome in Israel. II. Association with factor VII deficiency. *Quart J Med* 39:569-584, 1970.
16. Ben-Ezzer J, Remington C, Shani M, **Seligsohn U**, Sheba C, Szeinberg A. Abnormal excretion of the isomers of urinary coproporphyrin by patients with Dubin-Johnson in Israel. *Clin Sci* 40:17-30, 1971.
17. Rosenthal T, Shapiro Y, **Seligsohn U**, Ramot B. Disseminated intravascular coagulation in experimental heatstroke. *Thromb Diath Haemorrh* 26:417-425, 1971.
18. Shani M, **Seligsohn U**, Post CA, Adam A, Ramot B, Szeinberg A, Sheba C. Dubin-Johnson syndrome in Iranian Jews. *Pahlavi Med J* 2:471-475, 1971.
19. **Seligsohn U**, Man AL. Massive bleeding due to primary fibrinolysis following rhinoplasty. *Harefuah* 82:219-20, 1972.
20. **Seligsohn U**, Shani M, Ramot B, Adam A, Sheba C. Association of hereditary factor VII deficiency and Dubin-Johnson syndrome. *Birth Defects* 8:133-138. Williams & Wilkins Co., Baltimore, 1983.
21. **Seligsohn U**, Rapaport SI, Zivelin A. Patterns of incorporation of Se-methionine into fibrinogen and other plasma proteins in rabbits stimulated by different test conditions. *Thromb Diath Haemorrh* 29:76-86, 1973 75-
22. **Seligsohn U**, Alexander N, Rapaport SI. Fibrinogen synthesis in adrenalectomized rabbits. *Proc Soc Exp Biol Med* 142:824-848, 1973.

23. **Seligsohn U**, Rapaport SI, Kuefler PR. Extra-adrenal effect of ACTH on fibrinogen synthesis. Amer J Physiol 224:1172-1179, 1973.
24. **Seligsohn U**. Hemophilia and other clotting disorders. Isr J Med Sci 9:1338-1340, 1973.
25. Reichert M, **Seligsohn U**, Ramot B. Thrombasthenia in Iraqi Jews. Isr J Med Sci 9:1406, 1973.
26. Shani M, **Seligsohn U**, Adam A. The inheritance of Dubin-Johnson syndrome. Isr J Med Sci 9:1427-1430, 1973.
27. Ben-Ezzer J, Shani M, **Seligsohn U**, Post CA, Adam A, Blonder J, Szeinberg A. Dubin-Johnson syndrome: Abnormal excretion of the isomers of urinary coproporphyrin by clinically unaffected family members. Isr J Med Sci 9:1431-1436, 1973.
28. **Seligsohn U**, Rapaport SI, Shen SMC, Kuefler PR. Effect of corticosteroids upon fibrinogen metabolism in rabbits. Thromb Diath Haemorrh 30:531-540, 1973.
29. **Seligsohn U**, Rapaport SI, Rostami HJ. Delayed incorporation of (⁷⁵-Se) selenomethionine into fibrinogen: Its effect upon kinetic studies of fibrinogen with (⁷⁵-Se) selenomethionine in rabbits. Brit J Haemat 26:627-644, 1974.
30. **Seligsohn U**. The heterogeneity of hereditary disorders of blood coagulation. Harefuah 87:24-26, 1974.
31. Shani M, **Seligsohn U**, Ben-Ezzer J. effect of phenobarbital on liver function in patients with Dubin-Johnson syndrome. Gastroenterology 67:303-308, 1974.
32. **Seligsohn U**, Klein B. The effect of leucocytic extraction fibrinogen synthesis in rabbits. Thromb Res 7:17-24, 1975.
33. Cohen I, Glaser T, **Seligsohn U**. effects of ATP on bovine fibrinogen and ristocetin induced platelet aggregation in Glanzmann's thrombasthenia. Brit J Haemat 31:343-347, 1975.
34. Reichert N, **Seligsohn U**, Ramot B. Clinical and genetic aspects of Glanzmann's thrombasthenia. Report of 22 cases. Thromb Diath Haemorrh 34:806-820, 1975.
35. Meytes D, **Seligsohn U**, Ramot B. Multiple myeloma with terminal erythroleukemia. Acta Haemat 55:358-362, 1976.
36. **Seligsohn U**, Zitman D, Mani A, Klibanski C. The Coexistence of factor XI (PTA) deficiency and Gaucher's disease. Isr J Med Sci 12:1448-1452, 1976.
37. **Seligsohn U**, Shani M. The Dubin-Johnson syndrome and pregnancy. Acta Hepato Gastroenterol 24:167-169, 1977.
38. Fried D, **Seligsohn U**, Gottlieb A, Raviv U. Late onset of hemorrhagic disease of the newborn. Harefuah 92:565-566, 1977.
39. Giddings JC, **Seligsohn U**, Bloom AL. Immunological studies in combined factor V and factor VIII deficiency. Brit J Haemat 37:257-264, 1977.
40. Herscovici B, **Seligsohn U**, Weinstein I, Wolman M. Effects of prolonged administration of high molecular Levan on hematological parameters in rabbits. Biochem Exp Biol 13:193-197, 1977.

41. Siegal T, **Seligsohn U**, Aghai E, Modan M. Clinical aspects of DIC in 118 cases. **Thromb Haemost** 39:122-134, 1978.
42. Sidi A, **Seligsohn U**, Jonas P, Mani A. Factor XI deficiency: Detection and management during urological surgery. **J Urology** 119:528-530, 1978.
43. **Seligsohn U**. High frequency of factor XI (PTA) deficiency in Ashkenazi Jews. **Blood** 51:1223-1228, 1978.
44. **Seligsohn U**, Osterud B, Rapaport SI. A coupled amidolytic assay for factor VII: its use with a clotting assay to determine the activity state of factor VII. **Blood** 52:978-988, 1978.
45. **Seligsohn U**, Osterud B, Griffin JM, Rapaport SI. Evidence for the participation of both activated factor XII and activated factor IX in cold promoted activation of factor VII. **Thromb Res** 13:1049-1056, 1978.
46. **Seligsohn U**, Zivelin A, Peretz C, Modan M. Detection of hemophilia A carriers by replicate factor VIII activity and antigenicity determinations. **Brit J Haemat** 42:433-439, 1979.
47. **Seligsohn U**, Kasper C, Osterud B, Rapaport SI. Activated factor VII in factor IX concentrate: Presence in different preparations and persistence in the circulation following infusion. **Blood** 53:828-837, 1979.
48. **Seligsohn U**, Osterud B, Brown SF, Griffin JM, Rapaport SI. Activation of human factor VII in plasma and purified systems: Roles of activated factor IX, kallikrein and activated factor XII. **J Clin Invest** 64:1056-1065, 1979.
49. Horowitz I, Graubart J, Gal G, Roman Y, **Seligsohn U**. Ambulatory oral surgery treatment in haemophiliacs. **Harefuah** 99:201-203, 1980.
50. **Seligsohn U**, Modan M. Definition of the population at risk of bleeding due to factor XI deficiency in Ashkenazic Jews and the value of activated partial thromboplastin time in its detection. **Isr J Med Sci** 17:413-415, 1981.
51. Bar-Meir S, Baron J, **Seligsohn U**, Gottesfeld F, Levy R, Gilat T. qqm-Tc-HIDA colecystography in Dubin-Johnson and Rotor's syndromes. **Radiology** 142:743-746, 1982.
52. Heim M, Horoszowski H, **Seligsohn U**, Martinowitz U, Strauss S. Ilio-poas hematoma - its detection and treatment with special reference to hemophilia. **Arch Orthop Traumat Surg** 99:195-197, 1982.
53. Ochshorn M, Michalevicz R, Tchetchick M, Behar A, **Seligsohn U**. Anglo-immunoblastic lymphadenopathy: a case with a 17-year follow-up. **Postgrad Med J** 58:367-370, 1982.
54. Heim M, Horoszowski H, Martinowitz U, **Seligsohn U**, Engel J. Haemophilic hands - a three year follow-up study. **The Hand** 14:333-336, 1982.
55. **Seligsohn U**, Zivelin A, Zwang E. Combined factor V and factor VIII among non-Ashkenazi Jews. **N Engl J Med** 307:1191-1195, 1982.
56. **Seligsohn U**, Zivelin A, Bar-Shani S. Cold promoted activation of factor VII: Is it a problem under blood bank conditions. **Haemostasis** 13:186-191, 1983.
57. **Seligsohn U**, Zivelin A, Zwang E. Decreased factor VIII clotting antigen levels in the combined factor V and VIII deficiency. **Thromb Res** 33:95-98, 1984.

58. **Seligsohn U**, Berger A, Abend M, Rubin L, Attias D, Zivelin A, Rapaport SI. Homozygous protein C deficiency manifested by massive venous thrombosis in the newborn. **N Engl J Med** 310:559-562, 1984.
59. Berliner S, Lusky A, Zivelin A, Modan M, **Seligsohn U**. Hereditary factor XIII deficiency: Report of four families and definition of the carrier state. **Brit J Haematol** 56:495-505, 1984.
60. **Seligsohn U**, Zivelin A, Zwang E, Bar-Shani S. Factor VII in plasma of women taking oral contraceptives. Lack of cold activation under blood bank conditions. **Transfusion** 24:171-172, 1984.
61. Solomon A, Rahmani R, **Seligsohn U**, Ben-Artzi F. Multiple myeloma: Early vertebral involvement assessed by computerized tomography. **Skeletal Radiol** 11:258-261, 1984.
62. Levine PH, Brackmann HH, **Seligsohn U**. A proposed system of classification of hemophilia centers for the World federation of Hemophilia (W.F.H.). **Scand J Haematol** Suppl 40, 33:459-460, 1984.
63. Melamed I, Djaldetti M, Joshua H, **Seligsohn U**. Association of the hemophilia A carrier state and hemorrhagic thrombocytopathy with dilatation of the platelet membrane complex. **Acta Hemat** 71:381-387, 1984.
64. **Seligsohn U**, Rososhansky S. A Glanzmann's thrombasthenia cluster among Iraqi Jews in Israel. **Thromb Haemost** 52:230-231, 1984.
65. Zikk D, Shanon E, **Seligsohn U**, Himelfarb MZ. Parotid gland hemorrhage as a complication of coumarin compound ingestion. **Arch Otorhinolaryngol** 241:243-246, 1985.
66. **Seligsohn U**, Mibashan RS, Rodeck CH, Nicolaides KH, Miller DS, Coller BS. Prenatal diagnosis of Glanzmann's thrombasthenia (Letter). **Lancet** II:1419, 1985.
67. Mibashan RS, Millar DS, Rodeck CH, Nicolaides KH, Berger A, **Seligsohn U**. Prenatal diagnosis of hereditary protein C deficiency (Letter). **N Engl J Med** 313:607, 1985.
68. Saito H, Ratnoff OD, Bouma BN, **Seligsohn U**. Failure to detect variant (CRM+) plasma thromboplastin antecedent (factor XI) molecules in hereditary plasma thromboplastin antecedent deficiency: A study of 125 patients of several ethnic backgrounds. **J Lab Clin Med** 106:718-722, 1985.
69. Agam G, Luria R, Shohat O, Dvilansky A, **Seligsohn U**, Livne A. Lysine binding to activated human platelets and its similarity to fibrinogen finding. **Biochim Biophys Acta** 847:293-300, 1985.
70. Rubinstein ZL, **Seligsohn U**, Modan M, Shani M. Hepatic computerized tomography in the Dubin-Johnson syndrome: Increased liver density as a diagnostic aid. **Computerized Radiol** 9:315-318, 1985.
71. Sahar E, Michalevicz R, Broudo I, **Seligsohn U**. Quantitation by flow cytometry of anthracycline drug uptake by peripheral blood and bone marrow cells in human leukemias. **Exp Hematol** 14:119-125, 1986.
72. Berliner S, **Seligsohn U**, Zivelin A, Zwang E. A relatively high frequency of sever (type III) von Willebrand's disease in Israel. **Brit J Haematol** 62:535-543, 1986.

73. Coller BS, **Seligsohn U**, Zivelin A, Zwang E, Lusky A, Modan M. Immunologic and biochemical characterization of homozygous and heterozygous Glanzmann thrombasthenia in the Iraqi-Jewish and Arab populations of Israel: comparison of techniques for carrier detection. *Brit J Haematol* 62:723-735, 1986.
74. Coller BS, Peerschke EI, **Seligsohn U**, Scudder IE, Nurden AT, Rosa JP. Studies on the binding of an alloimmune and two murine monoclonal antibodies to the platelet glycoprotein IIb/IIIb complex receptor. *J Lab Clin Med* 107:384-392, 1986.
75. Tishler M, Abramov AL, **Seligsohn U**, Kahn Y. Purpura fulminans in an adult. *Isr J Med Sci* 22:820-822, 1986.
76. Berliner S, Fuchs J, **Seligsohn U**, Kariv N, Hazaz B, Rotenberg Z, Weinberger I, Agmon J, Pinkhas J, Aronson M. Possible role of fibrinogen in the aggregation white blood cells. *Thromb Hemost* 58:749-752, 1987.
77. Soberay AH, Herzberg MC, Rudney JD, Nieuwenhuis HK, Sixma JJ, **Seligsohn U**. Responses of platelets to strains of streptococcus sanguis: findings in healthy subjects, Bernard-Soulier, Glanzmann's, and collagen-unresponsive patients. *Thromb Hemost* 57:222-225, 1987.
78. Brenner B, **Seligsohn U**. Primary hypercoagulable states. *Harefuah* 112:177-180, 1987.
79. Weiss P, Soff GA, Halkin H, **Seligsohn U**. Decline of proteins C and S and factors II, VII, IX and X during the initiation of warfarin therapy. *Thromb Res* 45:783-790, 1987.
80. Coller BS, **Seligsohn U**, Little PA. Type I Glanzmann thrombasthenia patients from the Iraqi-Jewish and Arab populations in Israel can be differentiated by platelet glycoprotein IIIa immunoblot analysis. *Blood* 69:1696-1703, 1987.
81. Brenner B, Shapira A, Bahari C, Heimovich L, **Seligsohn U**. Hereditary protein C deficiency during pregnancy. *Am J Obstet Gynecol* 157:1160-1161, 1987.
82. Brenner B, **Seligsohn U**, Hochberg S. Normal response of factor VIII and von Willebrand factor to 1-Deamino-8D-Arginine vasopressin in nephrogenic diabetes insipidus. *J Clin Endocrinol Metab* 67:191-193, 1988.
83. Russell ME, **Seligsohn U**, Coller BS, Ginsberg MH, Skoglund P, Quertermous T. Structural integrity of the glycoprotein IIb and IIIa genes in Glanzmann thrombasthenia patients from Israel. *Blood* 72:1833-1836, 1988.
84. **Seligsohn U**. Disseminated intravascular coagulation. Dilemmas regarding its pathogenesis, diagnosis and treatment. *Revista Iberoamericana Thromb Hemost* 1:7-11, 1988.
85. **Seligsohn U**, Coller BS, Zivelin A, Plow EF, Ginsberg M. Immunoblot analysis of platelet glycoprotein IIb in patients with Glanzmann thrombasthenia in Israel. *Brit J Haematol* 72:415-423, 1989.
86. Barabsh GI, Hod H, Rath S, Miller HI, Roth A, Har-Zahav Y, Modan M, Rotstein Z, Butler A, Zivelin A, Charnilass J, Laniado S, Rabinowitz B, **Seligsohn U**. Intermittent, dose-related reperfusion-reocclusion cycles during infusion of recombinant tissue plasminogen activator in patients with myocardial infarction. *Amer J Cardiol* 64:225-228, 1989.

87. Ben-Tal O, Zivelin A, **Seligsohn U.** The relative frequency of hereditary thrombotic disorders among 107 patients with thrombophilia in Israel. ***Thromb Haemost*** 61:50-54, 1989.
88. Brenner B, Zwang E, Bronstein M, **Seligsohn U.** von Willebrand factor multimer patterns in pregnancy-induced hypertension. ***Thromb Haemost*** 62:715-717, 1989.
89. Barbash GI, Hod H, Roth A, Miller HI, Rath S, Har-Zahav Y, Modan M, Zivelin A, Laniado S, **Seligsohn U.** Correlation of baseline plasminogen activator inhibitor activity with patency of the infarct artery after thrombolytic therapy in acute myocardial infarction. ***Amer J Cardiol*** 64:1231-1235, 1989.
90. Brenner B, Tavori S, Zivelin A, Keller CB, Suttie JW, Tatarsky I, **Seligsohn U.** Hereditary deficiency of all vitamin K-dependent procoagulants and anticoagulants. ***Brit J Haematol*** 75:537-542, 1990.
91. Rahmani R, Rozen P, Papo J, Lellin A, **Seligsohn U.** Association of von Willebrand's disease with plasma cell dyscrasia and gastrointestinal angiodyplasia. ***Isr J Med Sci*** 26:504-509, 1990.
92. Barbash GI, Roth A, Hod H, Miller HI, Rath S, Har-Zahav Y, Modan M, **Seligsohn U.**, Battler A, Kaplinsky E, Rabinowitz B, Laniado S. Rapid resolution of ST elevation and prediction of clinical outcome in patients undergoing thrombolysis with alteplase (recombinant tissue-type plasminogen activator): results of the Israeli Study of Early Intervention in Myocardial Infarction ***Brit Heart J*** 64:241-247, 1990.
93. Barbash GI, Roth A, Hod H, Miller HI, Modan M, Rath S, Har-Zahav Y, Shachar A, Basan S, Battler A, Rabinowitz B, Kaplinsky E, **Seligsohn U.**, Laniado S. Improved survival but not left ventricular function with early and prehospital treatment with tissue plasminogen activator in acute myocardial infarction. ***Am J Cardiol*** 66:261-266, 1990.
94. Barbash G, Hod H, Roth A, Faibel HE, Mandel Y, Miller HI, Rah S, Har-Zahav Y, Rabinowitz B, **Seligsohn U.**, Pelled P, Schlesinger Z, Laniado S, Kaplinsky E. Repeat infusions of recombinant tissue-type plasminogen activator in patients with acute myocardial infarction and early recurrent myocardial ischemia. ***J Amer Coll Cardiol*** 16:779-783, 1990.
95. Coller BS, Cheresh DA, Asch E, **Seligsohn U.** Platelet vitronectin receptor expression differentiates Iraqi-Jewish from Arab patients with Glanzmann thrombasthenia in Israel. ***Blood*** 77:75-83, 1991.
96. Newman PJ, **Seligsohn U.**, Lyman S, Coller BS. The molecular genetic basis of Glanzmann's thrombasthenia in the Iraqi-Jewish and Arab populations in Israel. ***Proc Natl Acad Sci (U.S.A.)*** 88:3160-3164, 1991.
97. Asakai R, Chung DW, Davie EW, **Seligsohn U.** Factor XI deficiency in Ashkenazi Jews in Israel. ***N Engl J Med*** 325:153-158, 1991.
98. Peretz H, **Seligsohn U.**, Zwang E, Coller BS, Newman PJ. Detection of the Glanzmann's thrombasthenia mutations in Arab and Iraqi-Jewish patients by polymerase chain reaction and restriction analysis of blood or urine samples. ***Thromb Haemost*** 66:500-504, 1991.

99. Coller BS, **Seligsohn U**, West SM, Scudder LE, Norton KJ. Platelet fibrinogen and vitronectin in Glanzmann thrombasthenia: Evidence consistent with specific roles for GPIIb/IIIa and $\alpha_v\beta_3$ integrins in platelet protein trafficking. **Blood** 78:2603-2610, 1991.
100. Inbal A, Kornbrot N, Zivelin A, Shaklai M, **Seligsohn U**. The inheritance of type I and type II von Willebrand's disease in Israel: Linkage analysis, carrier detection and prenatal diagnosis using three intragenic restriction fragment length polymorphisms. **Blood Coagul Fibrinol** 3:167-177, 1992.
101. Inbal A, **Seligsohn U**, Kornbrot N, Brenner B, Harrison P, Randi A, Rabinowitz I, Sadler JE. Characterization of three mutations causing von Willebrand disease type IIA in five unrelated families. **Thromb Haemost** 67:618-622, 1992.
102. Berliner S, Horowitz I, Martinowitz U, Brenner B, **Seligsohn U**. Dental surgery in patients with severe factor XI deficiency without plasma replacement. **Blood Coagul Fibrinol** 3:465-468, 1992.
103. Lubetsky A, **Seligsohn U**, Ezra D, Halkin H. The effect of the plasma levels of proteins C and S on the prediction of warfarin maintenance dose requirements. **Clin Pharmacol Ther** 52:42-49, 1992.
104. **Seligsohn U**. Factor XI deficiency. **Thromb Haemost** 70:68-71, 1993.
105. **Seligsohn U**, Peretz H. Molecular genetics aspects of factor XI deficiency and Glanzmann thrombasthenia. **Haemostasis** 24:81-85, 1994.
106. Peretz H, Usher S, Martinovitz U, **Seligsohn U**. Factor VIII gene rearrangement in hemophilia a carrier detection: A word of caution. (Letter). **Blood** 84:1351-1352, 1994.
107. Pittman DD, Tomkinson KN, Michnik D, **Seligsohn U**, Kaufman RJ. Post translational sulfation of factor V is required for efficient thrombin cleavage and activation and for full procoagulant activity. **Biochemistry** 33:6952-6959, 1994.
108. Coller BS, **Seligsohn U**, Peretz H, Newman PJ. Glanzmann Thrombasthenia: New insights from an historical perspective. **Semin Hematol** 31:301-311, 1994.
109. Peretz H, Rosenberg N, Usher S, Graff E, Newman PJ, Coller BS, **Seligsohn U**. Glanzmann's thrombasthenia associated with deletion-insertion and alternative splicing in the Glycoprotein IIb gene. **Blood** 85:414-420, 1995.
110. Shpilberg O, Peretz H, Zivelin A, Yatuv R, Chetrit A, Kulka T, Stern C, Weiss E, **Seligsohn U**. One of the two common mutations causing factor XI deficiency in Ashkenazi Jews (Type II) is also prevalent in Iraqi Jews, who represent the ancient gene pool of Jews. **Blood** 85:429-432, 1995.
111. Zycowitz Z, **Seligsohn U**, Zivelin A, Eldor A. Resistance to activated protein C. A novel cause of thrombosis. **Harefuah** 129:1-5, 1995.
112. Peake I, **Seligsohn U**, Gitel S, Kitchen S, Zivelin A. The laboratory diagnosis of haemophilia: Recommendations by the Laboratory Activities Committee of the World Federation of Hemophilia. **Haemophilia** 1:159-164, 1995.
113. Maymon R, **Seligsohn U**, Fainaru M. International post-graduate training program in Medicine: Survey of 13 training courses 1988-1994. **Harefuah** 129:185-188.

114. Verlander PC, Kaporis A, Liu Q, Zhang Q, **Seligsohn U**, Auerbach AD. Carrier frequency of the IVS + 4 A → T mutation of the Fanconi anemia gene FAC in the Ashkenazi Jewish population. **Blood** 86:4043-4048, 1995.
115. Dardik R, Peretz H, Usher S, **Seligsohn U**, Martinowitz U. Current strategy for genetic analysis of haemophilia A families. **Haemophilia** 2:11-17, 1996.
116. Mandel H, Brenner B, Berant M, Rosenberg N, Lanir N, Jakobs C, Fowler B, **Seligsohn U**. Coexistence of hereditary homocysteineuria and factor V Leiden. Effect on Thrombosis. **N Engl J Med** 334:763-768, 1996.
117. **Seligsohn U**, Rosenberg N. Glanzmann thrombasthenia: Clinical and molecular characterization. **Revista Iberoamericana Thromb Hemost** 9 (suppl 1):18-21, 1996.
118. Peretz H, Zivelin A, Usher S, **Seligsohn U**. A 14-bp deletion (codon 554 del AAAGtaacagatg) at exon 14/intron N junction of the coagulation factor XI gene disrupts splicing and causes severe factor XI deficiency. **Hum Mut** 8:77-78, 1996.
119. Brenner B, Zivelin A, Lanir N, Greengard JS, Griffin JH, **Seligsohn U**. Venous thromboembolism associated with double heterozygosity for R506Q mutation of factor V and for T298M mutation of protein C in a large family of a previously described homozygous protein C-deficient newborn with massive thrombosis. **Blood** 88: 877-880, 1996.

120. Tamary H, Fromovic Y, Shalmon L, Reich Z, Dym O, Lanir N, Brenner B, Paz M, Luder AS, Blau O, Korostishevsky M, Zaizov R, **Seligsohn U**. Ala244Val is common, probably ancient mutation causing factor VII deficiency in Moroccan and Iranian Jews. **Thromb Haemost** 76:283-291, 1996.
121. Schulman S, Langevitz P, Livneh A, Martinowitz U, **Seligsohn U**, Varon D. Cyclosporine therapy for acquired factor VIII inhibitor in a patient with systemic lupus erythematosus. **Thromb Haemost** 76:344-346, 1996.
122. Lane DE, Mannucci PM, Bauer KA, Bertina RM, Bochkov NP, Boulyjenkov V, Chandy M, Dahlback B, Ginter EK, Miletitch JP, Rosendaal FR, **Seligsohn U**. Inherited thrombophilia: Part 1. **Thromb Haemost** 76:651-662, 1996.
123. Lane DA, Mannucci PM, Bauer KA, Bertina RM, Bochkov NP, Boulyjenkov V, Chandy M, Dahlback B, Ginter EK, Miletich JP, Rosendaal FR, **Seligsohn U**. Inherited thrombophilia: Part 2. **Thromb Haemost** 76:824-834, 1996.
124. Seitz R, Duckert F, Lopaciuk S, Muszbek L, Rodeghiero F, **Seligsohn U**. Study Group. ETRO working party on factor XIII questionnaire on congenital factor XIII deficiency in Europe: Status and perspectives. **Sem Thromb Hemost** 22:415-418, 1996.
125. Zivelin A, Griffin JH, Xu X, Pabinger I, Samama M, Conard J, Brenner B, Eldor A, **Seligsohn U**. A single genetic origin for a common Caucasian risk factor for venous thrombosis. **Blood** 89:397-402, 1997.
126. Inbal A, Bank A, Zivelin D, Varon R, Dardik R, Shapiro R, Roshenthal E, Shenkman B, Gitel S, **Seligsohn U**. Acquired von Willebrand disease in a patient with angiodyplasia resulting from immune-mediated clearance of von Willebrand factor. **Br J Haematol** 96:179-182, 1997.

127. Nichols WC, **Seligsohn U**, Zivelin A, Terry VH, Arnold ND, Siemieniak DR, Kaufman J, Ginsburg D. Linkage of combined factors V and VIII deficiency to chromosome 18q by homozygosity mapping. **J Clin Invest** 99:596-601, 1997.
128. Rosenberg N, Yatuv R, Orion Y, Zivelin A, Dardik R, Peretz H, **Seligsohn U**. Glanzmann thrombasthenia caused by an 11.2-kb deletion in the glycoprotein IIIa (β_3) is a second mutation in Iraqi Jews that stemmed from a distinct founder. **Blood** 89:3654-3662, 1997.
129. **Seligsohn U**, Zivelin A. Thrombophilia as a multigenic disorder. **Thromb Haemost** 78:297-301, 1997.
130. Inbal A, Yee VC, Kornbrot N, Zivelin A, Brenner B, **Seligsohn U**. Factor XIII deficiency due to a Leu600Pro mutation in the factor XIII subunit-a gene in three unrelated Palestinian Arab families. **Thromb Haemost** 77:1062-1067, 1997.
-
131. Inbal A, Kenet G, Zivelin A, Yermiyahu T, Bronstein T, Sheinfeld T, Tamari H, Gitel S, Eshel G, Duchemin J, Aiach M, **Seligsohn U**. Purpura fulminans induced by disseminated intravascular coagulation following infection in 2 unrelated children with double heterozygosity for factor V Leiden and protein S deficiency. **Thromb Haemost** 77:1086-1089, 1997.
132. Zivelin A, Rosenberg N, Peretz H, Amit Y, Kornbrot N, **Seligsohn U**. Improved method for genotyping apolipoprotein e polymorphisms by a PCR-based assay simultaneously utilizing two distinct restriction enzymes. **Clin Chem** 43:1657-1659, 1997.
133. Peretz H, Mulai A, Usher S, Zivelin A, Segal A, Weisman Z, Mittelman M, Lupo H, Lanir N, Brenner B, Shpilberg O, **Seligsohn U**. The two common mutations causing factor XI deficiency in Jews stem from distinct founders: One of Ancient Middle-Eastern origin and another of more recent European origin. **Blood**, 90:2654-2659, 1997.
134. Brenner B, Laor A, Lupo H, Zivelin A, Lanir N, **Seligsohn U**. Bleeding predictors in factor-XI-deficient patients. **Blood Coagul Fibrinol** 8:511-515, 1997.
135. Bar-Sade RB, Theodor L, Gak E, Kruglikova A, Hirsch-Yechezkel G, Modan B, Kuperstein G, **Seligsohn U**, Rechavi G, Friedman E. Could the 185delAG BRCA1 mutation be an ancient Jewish mutation? **Eur J Hum Genet** 5:413-416, 1997.
136. Rosenberg N, Dardik R, Rosenthal E, Zivelin A, **Seligsohn U**. Mutations in the α_{IIb} and β_3 genes that cause Glanzmann thrombasthenia can be distinguished by a simple procedure using transformed B-lymphocytes. **Thromb Haemost** 79:244-248, 1998.
137. Nichols WC, **Seligsohn U**, Zivelin A, Terry VH, Hertel CE, Wheatley MA, Moussali MJ, Hauri H-P, Ciavarella N, Kaufman RJ, Ginsburg D. Mutations in the ER-Golgi intermediate compartment, protein ERGIC-53 cause combined deficiency of coagulation factors V and VIII. **Cell** 93:61-70, 1998.

138. Yatuv R, Rosenberg N, Dardik R, Brenner B, **Seligsohn U**. Glanzmann thrombasthenia in two Iraqi-Jewish siblings is caused by a novel splice junction mutation in the glycoprotein IIb. **Blood Coagul Fibrinol** 9:285-288, 1998.
139. Kaplinsky C, Kenet G, **Seligsohn U**, Rechavi G. Association between hyperflexibility of the thumb and an unexplained bleeding tendency: is it a rule of thumb? **Brit J Haematol** 101:260-263, 1998.
140. French DL, Coller BS, Usher S, Berkowitz R, Eng C, **Seligsohn U**. Prenatal diagnosis of Glanzmann thrombasthenia using the polymorphic markers BRCA1 and THRA1 on chromosome 17. **Brit J Haematol** 102:582-587, 1998.
141. Zivelin A, Rosenberg N, Faier S, Kornbrot N, Peretz H, Mannhalter C, Horellou MH, **Seligsohn U**. A single genetic origin for the common prothrombotic G20210A polymorphism in the prothrombin gene. **Blood** 92:1119-1124, 1998.
142. Ginsburg D, Nichols WC, Zivelin A, Kaufman RJ, **Seligsohn U**. Combined factors V and VIII deficiency – the solution. **Haemophilia** 4:677-682, 1998.
143. Salomon O, Moisseiev J, Rosenberg N, Vidne O, Yassur I, Zivelin A, Treister G, Steinberg DM, **Seligsohn U**. Analysis of genetic polymorphisms related to thrombosis and other risk factors in patients with retinal vein occlusion. **Blood Coagul Fibrinol** 9:617-622, 1998.
144. Salomon O, Steinberg DM, Zivelin A, Gitel S, Dardik R, Rosenberg N, Berliner S, Inbal A, Many A, Lubetsky A, Varon D, Martinowitz U, **Seligsohn U**. Single and combined prothrombotic factors in patients with idiopathic venous thromboembolism. Prevalence and risk assessment. **Arterioscl Thromb Vasc Biol** 19:511-518, 1999.
145. Inbal A, Freimark D, Modan B, Chetrit A, Matetsky S, Rosenberg N, Dardik R, Baron Z, **Seligsohn U**. Synergistic effects of prothrombotic polymorphisms and atherogenic factors on the risk of myocardial infarction in young males. **Blood** 93:1-6, 1999,
146. Nichols WC, Terry VH, Wheatly MA, Yang A, Zivelin A, Ciavarella N, Stefanile C, Matsushita T, Saito H, de Bosch NB, Ruiz-Saez A, Torres A, Thompson AR, Feinstein DI, White GC, Negrier C, Vinciguerra C, Aktan M, Kaufman RJ, Ginsburg D, **Seligsohn U**. ERGIC-53 gene structure and mutation analysis in 19 combined factors V and VIII deficiency families. **Blood** 93:2261-2266, 1999.
147. Beguin S, Kumar R, Keularts I, **Seligsohn U**, Coller BS, Hemker HC. Fibrin-dependent platelet procoagulant activity requires GPIb receptors and von Willebrand Factor. **Blood** 93:564-570, 1999.
148. Zivelin A, Gitel S, Griffin JH, Xu X, Fernandez JA, Martinowitz U, Cohen Y, Halkin H, **Seligsohn U**, Inbal A. Extensive venous and arterial thrombosis associated with an inhibitor to activated protein C. **Blood** 94:1-7, 1999.
149. Goldstein DB, Reich DE, Bradman N, Usher S, **Seligsohn U**, Peretz H. Age estimates of two common mutations causing factor XI deficiency: Recent genetic drift is not necessary for elevated disease incidence among Ashkenazi Jews. **Am J Hum Genet** 64:1071-1075, 1999.
150. Salomon O, Huna-Baron R, Kurtz S, Steinberg DM, Moisseiev J, Rosenberg N, Yassur I, Vidne O, Zivelin A, Gitel S, Davidson J, Ravid B, **Seligsohn U**. Analysis

- of prothrombic and vascular risk factors in patients with nonarteric anterior ischemic optic neuropathy. ***Ophthalmology*** 106:739-742, 1999.
151. Salomon O, Huna-Baron R, Steinberg DM, Kurtz S, **Seligsohn U**. Role of aspirin in reducing the frequency of second eye involvement in patients with non-arteric anterior ischaemic optic neuropathy. ***Eye*** 13:357-359, 1999.
 152. Salomon O, Apter S, Shaham D, Hiller N, Bar-Ziv J, Itzchak Y, Gitel S, Rosenberg N, Strauss S, Kaufman N, **Seligsohn U**. Risk factors associated with postpartum ovarian vein thrombosis. ***Thromb Haemost*** 82:1015-1019, 1999.
 153. Thornton MA, Poncz M, Korostishevsky M, Yakobson E, Usher S, **Seligsohn U**, Peretz H. The human platelet α IIb gene is not closely linked to its integrin partner β 3. ***Blood*** 94:2039-2047, 1999.
 154. Oddoux C, Guillen-Navarro E, Ditivoli C, Dieave E, Cilio MR, Clayton CM, Nelson H, Sarafoglou H, Sarafoglou K, McCain N, Peretz H, **Seligsohn U**, Luzzatto L, Nafa K, Nardi M, Karpatkin M, Aksentijevich I, Kastner D, Axelrod F, Ostrer H. Mendelian diseases among Roman Jews: implications for the origins of disease alleles. ***J Clin Endocrinol Metab*** 84:4405-4409, 1999.
 155. French DL, **Seligsohn U**. Platelet glycoprotein IIb/IIIa receptors and Glanzmann's thrombasthenia. ***Arterioscler Thromb Vasc Biol*** 20:607-610, 2000.
 156. Schneiderman J, Morag B, Gerniak A, Rimon U, Varon D, **Seligsohn U**, Shotan A, Adar R. Abciximab in carotid stenting for postsurgical carotid restenosis: Intermediate results. ***J Endovasc Ther*** 7:263-272, 2000.
 157. Tamary H, Fromovich-Amit Y, Salmon L, Zaizov R, Yaniv I, Klar A, Peretz H, Brenner B, Lanir N, Zivelin A, **Seligsohn U**. Molecular characterization of four novel mutations causing factor VII deficiency. ***Hematology J*** 1:382-389, 2000.
 158. Salomon O, Rosenberg N, Zivelin A, Steinberg DM, Kornbrot N, Dardik R, **Seligsohn U**. Methionine synthase A2756G and methylenetetrahydrofolate reductase A1298C polymorphisms are not risk factors for idiopathic venous thromboembolism. ***Hematology J*** 2:38-41, 2001.
 159. Keularts I, Zivelin A, **Seligsohn U**, Hemker HC, Beguin S. The role of factor XI in thrombin generation induced by low concentrations of tissue factor. ***Thromb Haemost*** 85:1060-1065, 2001.
 160. **Seligsohn U**, Lubetsky A. Genetic susceptibilities to venous thrombosis. ***N Engl J Med*** 344:1222-1231, 2001. (Review).
 161. Shahar A, Feiglin L, Shahar DR, Levy S, **Seligsohn U**. High prevalence and impact of subnormal serum vitamin B₁₂ levels in Israeli elders admitted to a geriatric hospital. ***The Journal of Nutrition, Health & Aging*** 5:124-127, 2001.
 162. Yatuv R, Rosenberg N, Zivelin A, Peretz H, Dardik R, Trakhtenbrot L, **Seligsohn U**. Identification of a region in glycoprotein IIIa involved in subunit association with glycoprotein IIb: further lessons from Iraqi-Jewish Glanzmann thrombasthenia. ***Blood*** 98:1063-1069, 2001.
 163. Mor-Cohen R, Zivelin A, Rosenberg N, Shani M, Muallem S, **Seligsohn U**. Identification and functional analysis of two novel mutations in the multidrug

resistance protein 2 gene in Israeli patients with Dubin-Johnson syndrome. **J Biol Chem** 276: 36923-36930, 2001.

164. Salomon O, Huna-Baron R, Moisseiev J, Rosenberg N, Rubovitz A, Steinberg DM, Davidson J, Sela BA, **Seligsohn U**. Thrombophilia as a cause for central and branch retinal artery occlusion in patients without an apparent embolic source. **Eye** 15:511-514, 2001.
165. Streifler JY, Rosenberg N, Chetrit A, Eskaraev R, Sela BA, Dardik R, Zivelin A, Ravid B, Davidson J, **Seligsohn U**, Inbal A. Cerebrovascular events in patients with significant stenosis of the carotid artery are associated with hyperhomocysteinemia and platelet antigen-1 (Leu33Pro) polymorphism. **Stroke** 32:2753-2758, 2001.
166. Rosenberg N, Murata M, Ikeda Y, Opare-Sem O, Zivelin A, Geffen E, **Seligsohn U**. The frequent 5,10-methylenetetrahydrofolate reductase C677T polymorphism is associated with a common haplotype in Whites, Japanese, and Africans. **Am J Hum Genet** 70:758-762, 2002.
167. Shpilberg O, Rabi I, Schiller K, Walden R, Harats D, Tyrrell KS, Coller B, **Seligsohn U**. Patients with Glanzmann thrombasthenia lacking platelet glycoprotein $\alpha_{IIb}\beta_3$ (GPIIb/IIIa) and $\alpha_V\beta_3$ receptors are not protected from atherosclerosis. **Circulation** 105:1044-1048, 2002.
168. Zivelin A, Bauduer F, Ducout L, Peretz H, Rosenberg N, Yatuv R, **Seligsohn U**. Factor XI deficiency in French Basques is caused predominantly by an ancestral Cys38Arg mutation in the factor XI gene. **Blood** 99:2448-2454, 2002.
169. Goldberg Y, Berliner S, **Seligsohn U**. Clinical and economical advantages of anticoagulant treatment in specialized clinics. **Harefuah Journal of the Israel Medical Association** 141:830-832, 2002.
170. Klerk M, Verhoef P, Clarke R, Blom HJ, Kok FJ, Schouten EG, The MTHFR Studies Collaboration Group (Abbate R, Marcucci R, Samani NJ, Anderson JL, Zebrack JS, Ardissono D, Morlini FM, van Bockxmeer FM, Brownrig L, Chambers J, Kooner JS, Genest J, Rozen R, Ferrer-Antunes C, Palmeiro A, Fernandez-Arcas N, Reyes-Engel A, Folsom AR, Fowkes FGR, Lee AJ, Gemmati D, Scapoli GL, Girelli D, Corrocher R, Gulec S, Hopkins PN, Inbal A, **Seligsohn U**, Kluijtmans LAJ, Jukema JW, Kozich V, Janosikova B, Ma J, Stampfer MJ, Malinow MR, Ashfield-Watt PAL, Clark ZE, Meisel C, Stangl K, Graham IM, Morita H, Nagai R, Nakai K, Yamakawa-Kobayashi K, Hamaguchi H, Gaziano M, Schwartz SM, Siscovick DS, Silberberg JS, Szczechlik A, Domagala Teresa B, Tanis BC, Rosendaal FM, Thogersen AM, Nilsson TK, Todesco L, Litinsky P, Tokgozoglu SL, Tsai MY, Hanson NQ, Rimm FB, Verhoeff BJ, Trip MD. MTHFR 677C→T polymorphism and risk of coronary heart disease. **JAMA** 288:2023-2031, 2002.
171. **Seligsohn U**. Glanzmann thrombasthenia: a model disease which paved the way to powerful therapeutic agents. **Pathophysiol Haemost Thromb** 32:1-4, 2002.

172. Salomon O, Steinberg DM, Dardik R, Rosenberg N, Zivelin A, Tamarin I, Ravid B, Berliner S, **Seligsohn U**. Inherited factor XI deficiency confers no protection against acute myocardial infarction. **J Thromb Haemost** 1:658-661, 2003.
173. Zhang B, Cunningham MA, Nichols WC, Bernat JA, **Seligsohn U**, Pipe SW, McVey JH, Schulte-Overberg U, de Bosch NB, Ruiz-Saez A, White GC, Tuddenham EGD, Kaufman RJ, Ginsburg D. Bleeding due to disruption of a cargo-specific ER-to-Golgi transport complex. **Nature Gen** 34:220-225, 2003.
174. Salomon O, Zivelin A, Livnat T, Dardik R, Loewenthal R, Avishai O, Steinberg DM, Rosove MH, O'Connell N, Lee CA, **Seligsohn U**. Prevalence, causes, and characterization of factor XI inhibitors in patients with inherited factor XI deficiency. **Blood** 101:4783-4788, 2003.
175. Rosenberg N, Yatuv R, Sobolev V, Peretz H, Zivelin A, **Seligsohn U**. Major mutations in calf-1 and calf-2 domains of glycoprotein IIb in patients with Glanzmann thrombasthenia enable GPIIb/IIIa complex formation, but impair its transport from the endoplasmic reticulum to the Golgi apparatus. **Blood** 101:4808-4815, 2003.