

## CURRICULUM VITAE

David Tarin BSc, DM, FRCPath

### PERSONAL DETAILS

#### Current Appointments

Professor of Pathology 1997 – present  
Distinguished Member UCSD Cancer Center 2007 – present  
University of California, San Diego

(Formerly) Director, UCSD Cancer Center 1997 – 2003  
Associate Dean for Cancer Affairs  
Chugai Pharmaceutical Chair in Cancer Research  
Professor of Pathology  
University of California, San Diego  
Emeritus Professor of Pathology 1997 - present  
University of Oxford, United Kingdom

Emeritus Fellow 1997 - present  
Green College, University of Oxford, United Kingdom

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La Jolla, CA 92093-0803, USA

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University Education University of Leeds 1957 1961  
Balliol College, Oxford 1961 1963

Degrees B.Sc., Hons., Class I (Anatomy) 1961  
(Leeds University)

B.M. B.Ch (Bachelor of Medicine, Bachelor of Surgery) 1963  
(Oxford University)

D.M. (Doctor of Medicine) (Research Doctorate) 1969  
(Oxford University)

Postgraduate Clinical F.R.C.Path.(Fellow of the Royal College of Pathologists) 1979-now  
Qualifications  
Licensure General Medical Council of Great Britain 1964-2008

Medical Board of California 1998-2008  
(Special Faculty Permit # SPF0000002)

Previous Appointments House Surgeon to Mr. G.E. Moloney 1964 1965  
House Physician to Professor Witts  
Radcliffe Infirmary, Oxford  
M.C. Smith Lecturer in Pathology 1965 1967  
(Cancer Research)  
Birmingham University  
Lecturer in Anatomy 1967 1973  
Leeds University  
Senior Registrar in Neuropathology 1973 1974  
General Infirmary, Leeds  
Senior Lecturer in Histopathology 1975 1979  
Attending Pathologist Royal Postgraduate  
Medical School, Hammersmith Hospital

Nuffield Professor in Pathology 1980 1997  
Vice Chairman, Department of Pathology  
Oxford University

Professorial Fellow 1984 1997  
Green College, Oxford  
Attending Pathologist 1979 1997  
John Radcliffe Hospital  
Oxford, England  
Director, Cancer Diagnosis and 1979 1997  
Metastasis Research Laboratory  
Oxford University School of Medicine  
Chairman: Oxford Breast 1979 1997  
Diseases Group, Oxford University  
Director, UCSD Cancer Center 1997 – 2003  
Associate Dean for Cancer Affairs  
Chugai Pharmaceutical Chair in Cancer Research  
Professor of Pathology  
University of California, San Diego

#### AWARDS AND APPOINTMENTS

1. British Council: Younger Research Workers Award to work in the Austrian State Cancer Research Institute, Vienna 1967.
2. Royal Society, London, UK: Award to work in the Department of Experimental Pathology University of Helsinki 1972.
3. Royal Society, London, UK: Award to visit research centers in the U.S.A. 1973.

4. Wellcome Trust UK: Awards to visit research centers in the U.S.A. – 1973 and 1977.
5. Royal Society, London, UK: Guest Research Fellowship for outstanding investigators 1981.
6. Royal Society, London, UK: European Exchange Scheme Award 1983.
7. President: International Society of Differentiation 1987 1990.
8. National Institutes of Health USA: Master Agreement Holder Early Cancer Detection Network. Award conferred by the National Cancer Institute USA, January 1996. At the time this award was made there were only four Master Agreement Holders in this category in the USA and none in other countries.

## MEMBERSHIP OF PROFESSIONAL ADVISORY BODIES

- A. Associate Editor of the Journal Cancer Research (1986 1990)  
Associate Editor of the Journal Molecular and Cellular Differentiation (1992 1999)
- B. Editorial board of the following journals:
  1. Journal of Pathology (1995 - 2003)
  2. Journal of Clinical Pathology (1995 - 2003)
  3. Molecular Diagnosis (1995 - 1999)
  4. Differentiation (1978 - present)
  5. Anticancer Research (1985 - present)
  6. Invasion and Metastasis (1981 - 1999)
  7. International Journal of Developmental Biology (1990 - 1994)
  8. Clinical Cancer Research (2000-present)
  9. Molecular Oncology (2006-present)
  10. Journal of Cancer Microenvironment (2007-Present)
- C. Scientific referee for various peer-reviewed international journals including Nature, Science, Lancet, Cancer Research, British Journal of Cancer, etc.
- D. Advisor, Scientific Policy Review, National Cancer Institute, USA, 2002 and Cancer Research Campaign, UK – 1992
- E. Reviewer and Site Visitor for MD Anderson Cancer Center, Houston renewal of NCI Center support grant
- F. Advisor to the US National Cancer Institute on Cancer Center Support Grants (P50) and Special Programs of Research Excellence (SPORE)

## PROFESSIONAL AFFILIATIONS

1. International Society of Differentiation  
Member of Board of Directors (1976-2000)  
President (1987-1990) and Member of Executive Committee (1990-1992)  
Member 2000- present
2. American Association for Cancer Research,  
Member (1980-present) Assoc. Editor (1986-1990)
3. Fellow of the Royal College of Pathologists (UK) 1979-present

## RESEARCH EXPERIENCE

Direct experience in leading a research team investigating various topics in cancer pathology, developmental biology and cell differentiation and their clinical implications. Particular interests have included early cancer diagnosis, metastatic spread of cancer, mechanisms of tumor invasion and intercellular signaling in differentiation and organogenesis. The list of publications below provides details. The work involved personal bench expertise in a wide variety of pathological, molecular biological and biochemical techniques, including cell culture, gross and microscopic animal pathology, enzyme biochemistry, molecular cloning and sequencing, PCR, isotope labeling and gene transfer.

## CLINICAL RESPONSIBILITIES AND EXPERIENCE

1. Attending Pathologist, in several large teaching hospitals, 1975-1997 (See list of professional appointments above for details of hospitals). Duties involved frequent active participation in clinical work and senior responsibility for leading and supervising medical colleagues performing diagnostic work on diseases of all organ systems. Additional duties included specialized pathology reporting for teams delivering care for patients with mammary, cardiovascular, pulmonary and neurological diseases. The work required expertise in reporting surgical biopsies, performing autopsies and contributing to clinical meetings.
2. Chairman and Coordinator of the Oxford Breast Diseases Group 1979-1997. This is a consortium of surgeons, medical oncologists, radiotherapists, radiologists and pathologists who meet weekly to decide the management of each patient seen by the Group and conduct research on breast cancer. It coordinates treatment and provided the platform for effective introduction of screening for breast cancer in this Region. In addition to administering the regular clinical meetings of the Group, Dr Tarin personally reviewed all the slides and reports of all patients discussed.
3. Participation in Tumor Boards UCSD Cancer Center
4. Participation in surgical pathology case review sessions Department of Pathology, UCSD

## CURRENT AND PREVIOUS ADMINISTRATIVE AND TEACHING EXPERIENCE

(a) Faculty member of the Pathology Department, UCSD. 1997-present

(b) Administration

1. Director, UCSD Cancer Center. Responsibility for leadership and management of all research and clinical activities of the Center.

2 The following achievements have had a major impact on cancer care and cancer research in San Diego:

a) Led fund raising effort for new \$110 million Cancer Center building opened April 2005,

b) obtained NCI Comprehensive Cancer Center status for UCSD, and

c) tripled NCI grant for the Center to \$21 million.

3. Associate Dean for Cancer Affairs, UCSD School of Medicine  
Responsibility for all cancer-related clinical, research and educational matters.

4. Member of the Dean's Council of Chairs, UCSD.

5 Member, Academic Senate, UCSD

6 Vice-Chair, Nuffield Department of Pathology, Oxford University, 1980-97

7. Convenor, Chairman and Founder: Oxford Breast Diseases Group, 1979-1997

This involved quality control and audit of the breast pathology service for both breast screening and for clinically overt breast cancer. It required active participation in the organisation and delivery of the breast cancer service for the Oxford Health District.

8. Member of the Governing Body of Green College, Oxford.

## EXPERIENCE IN ORGANIZING INTERNATIONAL MEETINGS

1975: Co-organiser: International Conference on Cell Differentiation and Neoplasia for the International Society of Differentiation, Copenhagen.

1986: Co-organiser: An Open International Conference: "Biological and Therapeutic Aspects of Cancer Metastasis," University of the Basque Country, Vitoria, Spain.

1988: Member of Organizing Committee: International Cancer Seminar, Sapporo, Japan.

1988: Co-organiser Ciba Foundation International Symposium on Metastasis, London.

1990: Member of Organizing Committee: International Conference on Cell Differentiation and Neoplasia for the International Society of Differentiation, Vancouver, Canada.

1992: Member of Organizing Committee: International Conference on Cell Differentiation and Neoplasia for the International Society of Differentiation, Helsinki, Finland.

1994: Member of Organizing Committee: International Conference on Cell Differentiation and Neoplasia for the International Society of Differentiation, Hiroshima, Japan.

1995: Member of Organizing Committee: First International Conference on Gastroenterological Carcinogenesis in conjunction with the Sixth Hiroshima Cancer Seminar, Hiroshima, Japan

## LIST OF PUBLICATIONS

(in chronological order)

### (a) Book

Tissue Interactions in Carcinogenesis published by Academic Press, London, 1972. It consists of the work of 12 authors including the applicant. Dr Tarin's contribution was to conceive the project, write four chapters comprising a quarter of the book (see below for details) and act as editor.

### (b) Articles

1. Tarin D. Sequential electron microscopical study of experimental mouse skin carcinogenesis. *Int J Cancer* 2:195 211, 1967

2. Tarin D. Orientation of flat specimens for ultrathin sectioning across their edges by embedding in slotted matrices: a one stage procedure. *Stain Tech* 42:160 161, 1967

3. Tarin D. Further electron microscopic studies on the mechanism of carcinogenesis: the specificity of the changes in carcinogen treated mouse skin. *Int J Cancer* 3:734 742, 1968

4. Tarin D, Spencer AT. Histological control of specimen selection for electron microscopy. *J Micr* 89:135 137, 1969

5. Tarin D. Fine structure of murine mammary tumours: the relationship between epithelium and connective tissue in neoplasms induced by various agents. *Br J Cancer* 23:417 425, 1969

6. Croft CB, Tarin D. Ultrastructural studies of wound healing in mouse skin.  
I. Epithelial behaviour. *J Anat* 106:63 77, 1970

7. Tarin D, Croft CB. Ultrastructural studies of wound healing in mouse skin.  
II. Dermo-epidermal interrelationships. *J Anat* 106:79 91, 1970

8. Scott K, Tarin D, Sharp JA. Orientation of spherical specimens for ultrathin sectioning in selected planes by embedding in agar. *J Micr* 91:217 220, 1970
9. Tarin D. Assessment of the significance of the intramitochondrial dense body in carcinogenesis. *J Invest Derm* 55:26 30, 1970
10. Tarin D, Sturdee AP. Early limb development of *Xenopus laevis*. *J Embryol Exp Morph* 26:169 179, 1971
11. Tarin D. Scanning electron microscopical studies of the embryonic surface during gastrulation and neurulation in *Xenopus laevis*. *J Anat* 109:535 547, 1971
12. Tarin D. Histological features of neural induction in *Xenopus laevis*. *J Embryol Exp Morph* 26:543 570, 1971
13. Tarin D. Tissue interactions in morphogenesis, morphostasis and carcinogenesis. *J Theor Biol* 34:61 72, 1972
14. Tarin D. Ultrastructural features of neural induction in *Xenopus laevis*. *J Anat* 111:1 28, 1972
15. Tarin D, Sturdee A. Surgical anaesthesia of mice: evaluation of tribromo ethanol, ether, halothane and methoxyflurane and development of a reliable technique. *Lab Animals* 6:79 84, 1972
16. Tarin D. Introduction: Rationale of a new approach to carcinogenesis. In: *Tissue Interactions in Carcinogenesis*, ed: Tarin D: Academic Press, London, 1972, pp. xiii xvii.
17. Tarin D. Tissue interactions and the maintenance of histological structure in adults. In: *Tissue Interactions in Carcinogenesis*, Chapter 3, ed: Tarin D: Academic Press, London, 1972, pp. 81 93
18. Tarin D. Morphological studies on the mechanism of carcinogenesis. In: *Tissue Interactions in Carcinogenesis*, Chapter 8, ed: Tarin D: Academic Press, London, 1972, pp. 227 289
19. Tarin D, Sturdee A. Transplantation of pure epidermis: observations on the behaviour of isolated epithelium in vivo and appraisal of the technique. In: *Tissue Interactions in Carcinogenesis*, Chapter 11, ed: Tarin D: Academic Press, London, 1972, pp.359 375
20. Tarin D, Irvin TT. Wound healing: experimental and clinical studies. *Folia Traumatologica* 2:1 7, 1973
21. Tarin D, Sturdee A. Histochemical features of hind limb development in *Xenopus laevis*. *J Anat* 114: 101 107, 1973

22. Tarin D. Histochemical and enzyme digestion studies on neural induction in *Xenopus laevis*. *Differentiation* 1:109 126, 1973
23. Tarin D, Sturdee A. Attempts to produce cancer in epidermis by isolation in vivo. *Oncology* 28:378 384, 1973
24. Campbell PN, McIlreavy D, Tarin D. The detection of the messenger Ribonucleic acid for the a lactalbumin of guinea pig milk. *Biochem J* 134:345 347, 1973
25. Tarin D. Sturdee AP. Ultrastructural features of ectodermal mesenchymal relationships in the developing limb of *Xenopus laevis*. *J Embryol Exp Morph* 31:287 303, 1974
26. Toivonen S, Tarin D, Saxen L, Tarin PJ, Wartiovaara J. Transfilter studies on neural induction in the newt. *Differentiation* 4:1 7, 1975
27. Tarin PJ, Tarin D. General aspects of neoplasia. In: *Scientific Foundations of Dentistry*, Chapter 18, eds: Cohen B, Kramer I R H: William Heinemann Medical Books Ltd. London, 1976, pp. 215 228
28. Toivonen S, Tarin D, Saxen L. The transmission of morphogenetic signals from amphibian mesoderm to ectoderm in primary induction. *Differentiation* 5:49 55, 1976 X
29. Tarin D. Cellular interactions in neoplasia. In: *Fundamental Aspects of Metastasis*, Chapter 7, ed: Weiss L: North Holland Publishing Co, Amsterdam, 1976, pp. 151 187
30. Segal AW, Gregoriadis G, Lavender JP, Tarin D, Peters TJ. Tissue and hepatic subcellular distribution of liposomes containing bleomycin after intravenous administration to patients with neoplasms. *Clin Sci and Molec Med* 51:421 425, 1976
31. Tarin D. Studies on primary embryonic induction. In: *Cell Interactions in Differentiation*, Chapter III, ed: Karkinen Jaaskelainen M, Saxen L, Weiss L: Academic Press, London, 1977, pp. 227 247
32. Tarin D, Allison DJ, Modlin IM, Neale G. Diagnosis and management of obscure gastrointestinal bleeding. *Br Med J* 2:751 754, 1978
33. Tarin D. Embryonic induction: a review of current information on the mode of signal transmission and target response. *Med Biol* 56:380 385, 1978
34. Tarin D, Price JE. Metastatic colonization potential of primary tumour cells in mice. *Br J Cancer* 39:740 754, 1979
35. Sapsford RN, Fitchett DH, Tarin D, Anderson RH. Aneurysm of left ventricle secondary to bacterial endocarditis. *J Thorac Cardiovasc Surg* 78:79 86, 1979
36. Sewell JR, Allison DJ, Tarin D, Hughes GRV. Combined temporal arteriography and selective biopsy in suspected giant cell arteritis. *Ann Rheum Dis* 39:124 128, 1980

37. MacArthur CGC, Tarin D, Goodwin JF. Clinicopathological conference: a case of congestive cardiomyopathy. Demonstration at the Royal College of Physicians of London. *Br Med J* 280:613 619, 1980
38. Tarin D, Price JE. Studies on the metastatic colonisation potential of cells from primary tumours. In: *Metastatic Tumor Growth, Cancer Campaign Series, Vol 4* ed: Grundmann E: G Fischer Press, Stuttgart, 1980, pp. 65 70
39. Tarin D, Lewis PD, Wright NA, Evans DJ, McGee JO'D. Aspects of healing in internal organs. In: *Varieties of Healing and their Clinical Implications, Folia Traumatologica Geigy* 1980, p.1
40. Tarin D. Stromal factors relating to invasion and metastatic spread of tumours. In: *New Aspects of Breast Cancer.* ed: Stoll B A: William Heinemann Medical Books Ltd, London, 1981, pp. 21 37
41. Nash JRG, Price JE, Tarin D. Macrophage content and colony forming potential in mouse mammary carcinomas. *Br J Cancer* 43:478 485, 1981
42. Tarin D, Price JE. Influence of microenvironment and vascular anatomy on "metastatic" colonization potential of mammary tumors. *Cancer Res* 41:3604 3609, 1981
43. Price JE, Tarin D. Lectin agglutinability of mammary tumours with differing metastatic colonisation potentials. *Differentiation* 20:264 269, 1981
44. Price JE, Tarin D. Retention of "metastatic" colonisation potential by cells of spontaneous primary tumours after cryopreservation. *Br J Cancer* 45:790 793, 1982
45. Tarin D, Hoyt BJ, Evans DJ. Correlation of collagenase secretion with metastatic-colonization potential in naturally occurring murine mammary tumours. *Br J Cancer* 46:266 278, 1982
46. Price JE, Carr D, Jones LD, Messer P, Tarin D. Experimental analysis of factors affecting metastatic spread using naturally occurring tumours. *Invasion Metastasis* 2:77 112, 1982
47. Tarin D. Investigations of the mechanisms of metastatic spread of naturally occurring neoplasms. *Cancer Metastasis Rev* 1:215 225, 1982
48. Souter RG, Tarin D, Kettlewell MGW. Peritoneovenous shunts in the management of malignant ascites. *Br J Surg* 70:478 481, 1983
49. Juacaba SF, Jones LD, Tarin D. Organ preferences in metastatic colony formation by spontaneous mammary carcinomas after intra arterial inoculation. *Invasion Metastasis* 3: 208 220, 1983

50. Potter KM, Juacaba SF, Price JE, Tarin D. Observations on organ distribution of fluorescein-labelled tumour cells released intravascularly. *Invasion Metastasis* 3:221 233, 1983
51. Sargent NSE, Price JE, Tarin D. Effect of enzymic removal of cell surface constituents on metastatic colonisation potential of mouse mammary tumour cells. *Br J Cancer* 48: 569 577, 1983
52. Kumar RK, Price JE, Sargent NSE, Tarin D. Binding of <sup>125</sup>I labelled Concanavalin A by cells from spontaneously arising murine mammary carcinomas and experimentally induced metastases. *Anticancer Res* 3:343 346, 1983
53. Tarin D, Vass ACR, Kettlewell MGW, Price JE. Absence of metastatic sequelae during long term treatment of malignant ascites by peritoneo venous shunting: a clinico pathological report. *Invasion Metastasis* 4:1 12, 1984
54. Tarin D, Price JE, Kettlewell MGW, Souter RG, Vass ACR, Crossley B. Clinicopathological observations on metastasis in man studied in patients treated with peritoneovenous shunts. *Br Med J* 288:749 751, 1984
55. Shields SE, Ogilvie DJ, McKinnell RG, Tarin D. Degradation of basement membrane collagens by metalloproteases released by human, murine and amphibian tumours. *J Path* 143:193 197, 1984
56. Seppanen ED, McKinnell RG, Tarin D, Rollins Smith LA, Hanson W. Temperature dependent dissociation of Lucke renal adenocarcinoma cells. *Differentiation* 26:227 230, 1984
57. McKinnell RG, De Bruyne GK, Mareel MM, Tarin D, Tweedell KS. Cytoplasmic microtubules of normal and tumor cells of the leopard frog. Temperature effects. *Differentiation* 26:231 234, 1984
58. Ogilvie DJ, McKinnell RG, Tarin D. Temperature dependent elaboration of collagenase by the renal adenocarcinoma of the leopard frog, *Rana pipiens*. *Cancer Res* 44:3438 3441, 1984
59. Tarin D, Price JE, Kettlewell MGW, Souter RG, Vass ACR, Crossley B. Mechanisms of human tumor metastasis studied in patients with peritoneovenous shunts. *Cancer Res* 44:3584 3592, 1984
60. Tarin D, McKinnell RG, Nace GW. Artificially induced metastasis by cells from spontaneous Lucke renal adenocarcinoma. *Invasion Metastasis* 4:198 208, 1984
61. Tarin D. The cell biology of metastatic tumour spread. *IRCS Medical Science* 12:1071 1073, 1984
62. Price JE, Carr D, Tarin D. Spontaneous and induced metastasis of naturally occurring tumors in mice: Analysis of cell shedding into the blood. *J Natl Cancer Inst* 73:1319 1326, 1984

63. McKinnell RG, Tarin D. Temperature dependent metastasis of the Lucke renal carcinoma and its significance for studies on mechanisms of metastasis. *Cancer Metastasis Rev* 3:373 386, 1984
64. MacArthur CGC, Tarin D, Goodwin JF, Hallidie Smith KA. The relationship of myocarditis to dilated cardiomyopathy. *Eur Heart J* 5:1023 1035, 1984
65. Ogilvie DJ, Hailey JA, Juacaba SF, Lee ECG, Tarin D. Collagenase secretion by human breast neoplasms: a clinicopathologic investigation. *J Natl Cancer Inst* 74:19 27, 1985
66. Horak E, Darling DL, Tarin D. Organ specific effects on metastatic tumour growth studied in vitro. In: *Treatment of Metastasis: Problems and Prospects*, eds: Hellmann K, Eccles S A: Taylor and Francis, London, 1985, pp. 369 372
67. Horak E, Darling DL, Tarin D. Organ specific effects on metastatic tumour growth: studies involving transplantation techniques. In: *Treatment of Metastasis: Problems and Prospects*, eds: Hellmann K, Eccles S A: Taylor and Francis, London, 1985, pp. 307 310
68. Mareel M, Bruyneel E, Tweedell K, McKinnell R, Tarin D. Temperature dependence of PNKT 4B frog renal carcinoma cell invasion in vitro. In: *Treatment of Metastasis: Problems and Prospects*, eds: Hellmann K, Eccles S A: Taylor and Francis, London, 1985, pp. 335 338
69. Souter RG, Wells C, Tarin D, Kettlewell MGW. Surgical and pathological complications associated with peritoneovenous shunts in management of malignant ascites. *Cancer* 55:1973 1978, 1985
70. Tarin D. Clinicopathologic studies on mechanisms of metastasis in man and other vertebrates. In: *Biology and Treatment of Colorectal Cancer Metastasis*, ed: Mastromarino A J: Martinus Nijhoff Publishing, Boston, 1985, pp. 41 52
71. Tarin D. Clinical and experimental studies on the biology of metastasis. *Biochim Biophys Acta* 780: 227 235, 1985
72. Price JE, Syms AJ, Wallace JS, Fleming KA, Tarin D. Cellular immortality, clonogenicity, tumourigenicity and metastatic phenotype. *Eur J Cancer Clin Oncol* 22:349 355, 1986
73. Horak E, Darling DL, Tarin D. Analysis of organ specific effects on metastatic tumor formation by studies in vitro. *J Natl Cancer Inst* 76:913 922, 1986
74. Tarin D. Biological and clinical studies relevant to metastasis of breast cancer. *Cancer Metastasis Rev* 5:95 107, 1986
75. Tarin D. Tumour host interactions in breast cancer metastasis. In: *New Frontiers in Mammary Pathology 1986*, eds: Hollmann K H, Verley J M, Martinus Nijhoff Publishers, Boston, 1986, pp. 329 338

76. Sargent NSE, Price JE, Darling DL, Flynn MP, Tarin D. Effects of altering surface glycoprotein composition on metastatic colonisation potential of murine mammary tumour cells. *Br J Cancer* 55:21 28, 1987
77. Juacaba SF, McKinnell RG, Hanson WJ, Tarin D. Vascular dissemination of tumor cells in relation to temperature dependent metastasis in frogs. *J Natn Cancer Inst* 78:259 264, 1987
78. Clarke PJ, Tarin D. Effect of pre operative blood transfusion on tumour metastases. *Br J Surg* 74:520 522, 1987
79. Wallace JS, Fleming KA, Tarin D. Tumourigenic transformation of mouse NIH 3T3 cells by transfection with plasmid pSV2neo. *J Pathol* 156:73 76, 1988
80. McMenamin MM, Hayle AJ, Darling DL, Whittaker PA, Tutty MB, Clarke PJ, Tarin D. Genetic basis of metastasis. *Adv Exp Biol Med* 233:269 279, 1988
81. Price JE, Tarin D, Fidler IJ. Influence of organ microenvironment on pigmentation of a metastatic murine melanoma. *Cancer Res* 48:2258 2264, 1988
82. Tarin D. Molecular genetics of metastasis. In: *Ciba Foundation Symposium on Metastasis*. eds: Whelan J, Bock G R: John Wiley & Sons Ltd, London, 1988, pp. 149 169
83. Tarin D. Interactions between genetic constitution of metastatic tumour cells and host factors. In: *Tumor Progression and Metastasis*. eds: Nicolson G L, Fidler I J: Alan R. Liss Inc. New York, 1988, vol. 78, pp. 157 159
84. Juacaba SF, Horak E, Price JE, Tarin D. Tumour cell dissemination patterns and metastasis of murine mammary carcinoma. *Cancer Res* 49:570 575, 1989
85. Price JE, Tarin D. Low incidence of tumourigenicity in agarose colonies from spontaneous murine mammary tumours. *Differentiation* 41:202 207, 1989
86. Wallace J S, Hayle AJ, Syms AJ, Cairney M, Tutty MB, Gazzard A, Evans MF, Fleming KA, Tarin D. The ras oncogene and tumour metastasis: Observations on murine tumour cells transfected with the activated human c Harvey ras gene. *Differentiation* 41:208 215, 1989
87. Darling D, Tarin D. The spread of cancer in the human body. *New Scientist* 1726:50 53, 1990
88. Tarin D. Tumour metastasis. In: *Oxford Textbook of Pathology*. eds: McGee J O'D, Wright NA, Isaacson P G: Oxford University Press, Oxford, 1992, pp. 607 633
89. Moffett BF, Baban DF, Bao L, Tarin D. Fate of clonal lineages during neoplasia and metastasis studied with an incorporated genetic marker. *Cancer Res* 52:1737 1743, 1992.
90. Matsumura Y, Tarin D. DNA fingerprinting survey of various human tumors and their metastases. *Cancer Res* 52:2174 2179, 1992.

91. Matsumura Y, Tarin D. Significance of CD44 gene products for cancer diagnosis and disease evaluation. *Lancet* 340:1053 1058, 1992
92. Tarin D, Matsumura Y. CD44 and cancer reply. *Lancet* 341:252 253, 1993.
93. Baban D, Matsumura Y, Kocialkowski S, Tarin D. Studies on relationships between metastatic and non metastatic tumour cell populations using lineages labelled with dominant selectable genetic markers. *Int J Devel Biol* 37:237 243, 1993.
94. Bao L, Pigott R, Matsumura Y, Baban D, Tarin D. Correlation of VLA 4 integrin expression with metastatic potential in various human tumour cell lines. *Differentiation* 52:239 246, 1993.
95. Hayle AJ, Darling DL, Taylor AR, Tarin D. Transfection of metastatic capability with total genomic DNA from human and mouse metastatic tumour cell lines. *Differentiation* 54:177 189, 1993.
96. Tarin D, Matsumura Y. Deranged CD44 gene activity in malignancy. *J Pathol* 171:249 250, 1993
97. Matsumura Y, Tarin D. Deranged activity of the CD44 gene and other loci as biomarkers for progression to metastatic malignancy. *J Cell Biochem: 17G*:173 185, 1993.
98. Matsumura Y, Hanbury D, Smith JC, Tarin D. Non invasive detection of malignancy by identification of unusual CD44 gene activity associated with exfoliated cancer cells. *Br Med J* 308:619 624, 1994.
99. Tarin D, Matsumura Y. Recent advances in the study of tumour invasion and metastasis. *J Clin Pathol* 47:385 390, 1994.
100. Bao L, Matsumura Y, Baban D, Sun Y, Tarin D. Effects of inoculation site and Matrigel on growth and metastasis of human breast cancer cells. *Br J Cancer* 70:228 232, 1994.
101. Quinn JMW, Matsumura Y, Tarin D, McGee JO'D, Athanasou NA. Cellular and hormonal mechanisms associated with malignant bone resorption. *Lab Invest* 71:465 471, 1994.
102. Tarin D. Cancer metastasis. In: *Oxford Textbook of Oncology* eds: Peckham M, Pinedo B, Veronesi U: Oxford University Press, Oxford 1995 pp.118 132.
103. Sugiyama M, Woodman A, Sugino T, Crowley S, Ho K, Smith H, Matsumura Y, Tarin D. Non invasive detection of bladder cancer by identification of abnormal CD44 proteins in exfoliated cancer cells in urine. *J Clin Pathol-Mol Pathol* 48:M142 M147, 1995.
104. Matsumura Y, Sugiyama M, Matsumura S, Hayle AJ, Robinson P, Smith JC, Tarin D. Unusual retention of introns in CD44 gene transcripts in bladder cancer provides new diagnostic and clinical oncological opportunities. *J Pathol* 177:11 20, 1995.

105. Borgya A, Woodman A, Sugiyama M, Donie F, Kopetski E, Matsumura Y, Tarin D. Isolation and characterisation of antibodies which specifically recognise the peptide encoded by exon 7 (V2) of the human CD44 gene. *J Clin Pathol-Mol Pathol* 48:M241 M250, 1995.
106. Yoshida K, Bolodeoku J, Sugino T, Goodison S, Matsumura Y, Warren BF, Toge T, Tahara E, Tarin D. Abnormal retention of intron 9 in CD44 gene transcripts in human gastrointestinal tumors. *Cancer Res* 55: 4273 4277, 1995.
107. Tarin D. Tumour metastasis: secondary proliferation of tumour cells in distant organs. In: *Cell Proliferation in Cancer* eds: Puzstai, L, Lewis CE, Yap E. Oxford University Press, Oxford, pp. 316 341, 1996.
108. Tarin D, Bolodeoku J, Hatfill SJ, Sugino T, Woodman A C, Yoshida K. The clinical significance of malfunction of the CD44 locus in malignancy. *J Neuro Oncol* 26:209 219, 1995.
109. Bolodeoku J, Yoshida K, Yeomans P, Wells CA, Tarin D. Demonstration of CD44 gene expression in cells from fine needle aspirates of breast lesions by the polymerase chain reaction. *J Clin Pathol-Mol Pathol* 48:M307 M309, 1995.
110. Yoshida K, Sugino T, Bolodeoku J, Warren BF, Goodison S, Woodman A, Toge T, Tahara E, Tarin D. Detection of exfoliated carcinoma cells in colonic luminal washings by identification of deranged patterns of expression of the CD44 gene. *J Clin Pathol* 49:300 305, 1996.
111. Gorham H, Sugino T, Woodman AC, Tarin D. Cellular distribution of CD44 gene transcripts in colorectal carcinomas and in normal colonic mucosa. *J Clin Pathol* 49:482 488, 1996.
112. Higashikawa K, Yokozaki Y, Ue T, Taniyama K, Ishikawa T, Tarin D, Tahara E. Evaluation of CD44 transcription variants in human digestive tract carcinomas and normal tissues. *Int J Cancer* 66:11 17, 1996.
113. Gorham H, Sugino T, Bolodeoku J, Yoshida K, Goodison S, Tarin D. Distribution of CD44 messenger RNA in archival paraffin wax embedded tumours and normal tissues viewed by in situ hybridisation. *J Clin Pathol-Mol Pathol* 49:M147 M150, 1996.
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#### (e) Published Abstracts

Over 200 on themes related to embryologic development, cancer invasion and metastasis and various clinical topics. A brief selection of recent examples includes the following::

Valerie Montel, Jeanine Kleeman, Dianne Agarwal, Virginia Urquidi, Steve Goodison, and David Tarin. Effect of Modulated Expression of a Neutrophil Collagenase (MMP-8) on the Metastatic Behavior of Two Isogenic Human Breast Cancer Cell Lines with Phenotypically Opposite Metastatic Properties In Vivo 2005, Proceedings of the American Association for Cancer Research, Anaheim, CA

David Tarin. 2007 The use of fluorescence probes to investigate molecular and cellular mechanisms of cancer spread in living animals: Proceedings of the International Conference of SPIE (Society for Photonics and Electronics) San Jose, CA

David Tarin. 2008 The molecular pathology of cancer metastasis: Reverse translation from bedside to laboratory bench. Proceedings of the International Conference of the Metastasis Research Society, Vancouver, BC

David Tarin. 2009 The Clinico-Pathological Basis for Novel Cancer Therapy Design: Proceedings of the International Meeting of the Drug Delivery Society, Tokyo, Japan

David J. Shields, Eric Murphy, Jay S. Desgrosellier, Leo Barnes, Jacqueline Lesperance, David Tarin, Christian Schmedt, David A. Tuveson, Andrew M. Lowy and David A. Cheresch. 2009: Co-operative Src kinase activation and oncogenic KrasG12D signaling induce spontaneous invasive pancreatic ductal adenocarcinoma. Proceedings of the American Association for Cancer Research, Denver, CO.

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