

## CURRICULUM VITAE

### Personal information

First name(s) / Surname(s)	<b>Francesco Calabi</b>
Address	CNR Istituto di Nanotecnologia c/o Campus Ecotekne Via Monteroni – 73100 Lecce
Nationality	Italian
Date of birth	26 March 1954
Gender	Male

### Work experience

Dates	June 1979 – September 1979
Occupation or position held	Postdoctoral research fellow (with Prof. Ruggero Ceppellini)
Main activities and responsibilities	Member of the Tissue Typing lab, data generation and analysis for the VIII Histocompatibility Workshop
Name and address of employer	Basel Institute for Immunology 487 Grenzacherstrasse, CH-4005 Basel (Switzerland)
Type of business or sector	Research & Development
Dates	October 1979 – January 1981
Occupation or position held	Postdoctoral research fellow (with Prof. Antonio Bargellesi Severi and Prof. Giorgio Corte)
Main activities and responsibilities	Biochemical analysis of MHC polymorphism Development, characterization and use of monoclonal antibodies against cell differentiation markers
Name and address of employer	Istituto di Chimica Biologica, Universita' degli Studi, Genoa v. Benedetto XV/1, 16132 Genoa (Italy)
Type of business or sector	University
Dates	1981 - 1989
Occupation or position held	Postdoctoral research fellow (with Dr. Cesar Milstein)
Main activities and responsibilities	Development, characterization and use of monoclonal antibodies against cell differentiation markers Molecular genetics of lymphocyte surface molecules Molecular genetics of immunoglobulin and T cell receptors
Name and address of employer	MRC Laboratory of Molecular Biology Hills Rd, CB2 2QH Cambridge (UK)
Type of business or sector	Government-funded/Medical Research

Dates	1989 - 1995
Occupation or position held	MRC senior staff member/Senior lecturer
Main activities and responsibilities	Group Leader: Molecular genetics of leukaemia MRC Leukaemia Unit/Department of Haematology (Head of Department: Prof. Lucio Luzzatto) RPMS/Hammersmith Hospital, Ducane Rd, W12 0HS London (UK)
Name and address of employer	Medical Research Council, 20 Park Crescent, London W1
Type of business or sector	Government-funded/Medical Research
Dates	1995 - 2001
Occupation or position held	MRC senior staff member/Senior Lecturer
Main activities and responsibilities	Group Leader: Molecular Oncology/Developmental Biology Developmental Biology Unit (Unit head: Prof. Peter Thorogood and Prof. Andy Copp) Institute of Child Health, Great Ormond Street, WC1N 1EH London (UK)
Name and address of employer	Medical Research Council, 20 Park Crescent, London W1
Type of business or sector	Government-funded/Medical Research
Dates	2002
Occupation or position held	Visitor
Main activities and responsibilities	Molecular Haematology
Name and address of employer	Department of Haematology, UCL (Head of Department: Prof. David Lynch) 98 Chenies Mews, WC1E 6HX London (UK)
Type of business or sector	University
Dates	From 2003
Occupation or position held	CNR Senior Staff (Primo Ricercatore) at the National Nanotechnology Laboratory (Head: Prof. Roberto Cingolani)
Main activities and responsibilities	Group Leader Nanobiotechnology/Nanomedicine
Name and address of employer	CNR, P.zzale A. Moro 7, 00100 Roma
Type of business or sector	Government-funded Research Centre
Dates	1/12/2009 – 31/10/2012
Occupation or position held	Acting Director CNR Institute for the Nanosciences, Lecce Research Unit (NNL)
Name and address of	CNR, P.zzale A. Moro 7, 00100 Roma

employer	
Type of business or sector	Government-funded Research Centre
<b>Education and training</b>	
Dates	1976
Title of qualification awarded	Diploma in pianoforte principale
Principal subjects / occupational skills covered	Piano playing
Name and type of organisation providing education and training	Conservatorio di Musica Giuseppe Verdi (Higher Education) v. Conservatorio 12, 20122 Milano (Italy)
Dates	1979
Title of qualification awarded	Medical Doctor
Principal subjects / occupational skills covered	Medicine and Surgery (Magna cum Laude)
Name and type of organisation providing education and training	Universita' degli Studi, Milano (Higher Education) v. Festa del Perdono 7, 20122 Milano (Italy)
Dates	1979
Title of qualification awarded	Abilitazione all'esercizio della professione di Medico Chirurgo (1979)
Principal subjects / occupational skills covered	Medicine and Surgery
Name and type of organisation providing education and training	Ministero dell'Università e della Ricerca, Roma, Italy

## Other positions held

Dates	From 1979
Title	Membro dell'Ordine dei Medici Chirurghi (1979 – 2003: Milano; from 2004: Lecce)
Dates	1989
Title	Teaching staff, Specialist course “Progressi in biotecnologia” organized by Istituto Scientifico Tumori, Genova, Italy
Dates	1990 - 1994
Title	Teaching staff, Specialist courses “Advances in Haematology” and “Master of Science in Haematology” held at the Department of Haematology, Royal Postgraduate Medical School, London, UK
Dates	1990 - 2000
Title	Referee, Human Frontiers Science Program Organization, Strasbourg, France
Dates	1994
Title	Contract professorship, Biochemistry, Faculty of Medicine and Surgery, University of Genova, Italy
Dates	From 7/7/2011
Title	Membro della Commissione di Collaudo in corso d'opera e finale dei lavori per la "Realizzazione Campus di Nanotecnologie", Lecce Importo dei lavori: euro 7,460,405.34 esclusa IVA (Protocollo 0050748 del 7/7/2011 e 0064215 del 13/9/2011)

## Awards

Dates	March 1981 – June 1981
Award	EMBO short term fellowship, European Molecular Biology Organization, Heidelberg, Germany
Dates	July 1981 – June 1982
Award	Cancer Research Campaign International Fellowship, International Union Against Cancer, Geneva, Switzerland
Dates	December 1982
Award	Fellowship, Accademia dei Lincei (Roma, Italia)/ Royal Society (London, UK)

Dates	January 1983 – December 1983									
Award	EMBO long term fellowship, European Molecular Biology Organization, Heidelberg, Germany									
Dates	January 1984 – December 1985									
Award	Fellowship, Leukemia Society of America (currently Leukemia & Lymphoma Society), New York, USA									
Dates	July 1986 – June 1989									
Award	Special Fellowship, Leukemia Society of America (currently Leukemia & Lymphoma Society), New York, USA									
Personal skills										
Mother tongue(s)	Italian									
Other language(s)	English									
Self-assessment										
European level (*)										
	Understanding				Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production			
	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
	(*) <a href="#">Common European Framework of Reference (CEF) level</a>									
Organisational skills and competences	Scientific and Administrative Management of National and International (EU) research projects Teaching at pre- and postdoctoral level									
Technical skills and competences	Molecular and Cell Biology/Genetics Molecular Oncology/Developmental Biology Immunology (including development, production, engineering, characterization and use of monoclonal antibodies and derivatives) Optical Microscopy Biosensing Nanomaterials and nanodevices for biomedical applications									
Computer skills and competences	Windows and Linux OS Office Suites Endnote Molecular Biology Databases and Analytical Software									

Artistic skills and  
competences

Repertoire of solo piano music and piano and strings

Driving licence(s)

Full UK and Italian (B)

## Annex 1

## Publications

- 1 Garotta G, Barbanti M, Calabi F, Neri TM, Trucco MM and Ceppellini R (1980) 8W1247. A xenogeneic monoclonal antibody against supertypic specificity DRw3,5,6. 8th Histocompatibility Workshop Newsletter 37
- 2 Neri TM, Barbanti M, Calabi F, Garotta G, Trucco MM and Ceppellini R (1980) A family analysis of DR antigens. 8th Histocompatibility Workshop Newsletter 39
- 3 Berger W, Calabi F, Garotta G, Neri TM and Ceppellini R (1980) HLA and Insulin Dependent Diabetes Mellitus. High Risk for DRw3/DRw4 heterozygous and segregation in a B/DR recombinant family. 8th Histocompatibility Workshop Newsletter 63
- 4 Corte G, Damiani G, Calabi F, Fabbi M and Bargellesi A (1981) Analysis of HLA-DR polymorphism by two-dimensional peptide mapping. Proc Natl Acad Sci USA 78: 534
- 5 Corte G, Calabi F, Damiani G, Bargellesi A, Tosi R and Sorrentino R (1981) Human Ia molecules carrying DC1 determinants differ in both  $\alpha$ - and  $\beta$ -subunits from Ia molecules carrying DR determinants. Nature 292: 357
- 6 Calabi F, Damiani G and Corte G (1981) Produzione di anticorpi monoclonali. EOS 2: 28
- 7 Sorrentino R, Corte G, Calabi F, Tanigaki N and Tosi R (1981) A three loci model for the control of the small subunit of human Ia molecules, in "Expression of differentiated functions in cancer cells ", Revoltella et al eds, Raven Press, New York, p 169
- 8 Fabio G, Scorza-Smeraldi R, Bonara P, Sabbadini-Villa MG, Vanoli M, Calabi F and Zanussi C (1982) MLR specific suppressor T lymphocytes in man. II Functional and membrane characteristics of a specific MLR suppressor subpopulation. J Immunol 129: 2458-2462
- 9 Sorrentino R, Corte G, Calabi F, Tanigaki N and Tosi R (1983) Microfingerprinting analysis of human Ia molecules favours three loci model. Mol Immunol 20: 333
- 10 Bargellesi A, Calabi F, Corte G, Cosulich ME, Damiani G, Fabbi M, Ramarli D, Risso A and Zocchi E (1983) The application of monoclonal antibodies to the biochemical and functional analysis of human lymphocyte antigens, in "Monoclonal antibodies" Elsevier/North Holland, p 45

- 11 Burrone OR , Calabi F, Kefford RF and Milstein C (1983) Somatic variants of the level of expression of a cell surface antigen. EMBO J 2: 1591-1595
- 12 Calabi F, Burrone OR and Milstein C (1983) Is  $\beta_t$  a component of HLA-A B C in thymus derived cells? Mol Biol Med 1: 219-223
- 13 Neuberger MS and Calabi F (1983) Reciprocal chromosome translocation between c-myc and immunoglobulin  $\gamma 2b$  genes. Nature 305: 240-243
- 14 Kefford RF, Calabi F, Fearnley I, Burrone OR and Milstein C (1984) Serum  $\beta 2$ -microglobulin binds to a T-cell differentiation antigen and increases its expression. Nature 308: 641-642
- 15 Calabi F (1984) Traslocazioni cromosomiche e neoplasie ematologiche. Atti XXIX Settimane mediche degli ospedali 59-65
- 16 Calabi F and Neuberger MS (1985) Chromosome translocation activates heterogeneously initiated bipolar transcription of a mouse c-myc gene. EMBO J 4: 667-674
- 17 Calabi F and Milstein C (1986) A novel family of major histocompatibility complex-related genes not mapping to chromosome 6. Nature 323: 540-543
- 18 Martin LH, Calabi F and Milstein C (1986) Isolation of CD1 genes: a new family of major histocompatibility complex-related differentiation antigens. Proc Natl Acad Sci USA 83: 9154-9158
- 19 Milstein C, Calabi F, Jarvis JM, Kefford RF, Martin LH and Migone N (1986) CD1: a family of MHC-related genes which do not map to chromosome 6, in "Leucocyte Typing III" McMichael A J et al eds, Oxford University Press, p 882-889
- 20 Calabi F, Schröder J, Martin LH and Milstein C (1986) Chromosomal mapping of CD1 genes, in "Leucocyte Typing III" McMichael A J et al eds, Oxford University Press, p 72-74
- 21 Delmastro-Galfrè P, Calabi F, Arno J, Karpas A and Hayhoe FGJ (1986) Monoclonal antibodies specific for human myeloma/plasma cells, in "Leucocyte Typing III" McMichael AJ et al eds, Oxford University Press p 510-511
- 22 Calabi F and Neuberger MS (eds ) "Molecular genetics of immunoglobulin" Elsevier/North Holland, 1987
- 23 Calabi F (1987) The immunoglobulin superfamily, in "Molecular genetics of



immunoglobulin" Calabi F and Neuberger MS eds, Elsevier/North Holland, p 203-239

24 Martin LH, Calabi F, Lefebvre F-A, Bilsland CAG and Milstein C (1987) Structure and expression of the human thymocyte antigens CD1a CD1b and CD1c. *Proc Natl Acad Sci USA* 84: 9189-9193

25 Brüggemann M, Delmastro-Galfrè P, Waldmann H and Calabi F (1988) Sequence of a rat immunoglobulin  $\gamma 2c$  heavy chain constant region cDNA: extensive homology to mouse g3. *Eur J Immunol* 18: 317-320

26 Bradbury A, Belt KT, Neri TM, Milstein C and Calabi F (1988) Mouse CD1 is distinct from, and coexist with TL in the same thymus. *EMBO J* 7: 3081-3086

27 Calabi F, Jarvis JM, Martin LH and Milstein C (1989) Two classes of CD1 genes. *Eur J Immunol* 19: 282-292

28 Calabi F, Bilsland CAB, Martin LH, Bradbury A, Belt KT and Milstein C (1989) Recent progress in the molecular study of CD1, in "Leucocyte Typing IV" Knapp W et al eds, Oxford University Press, 254-258

29 Calabi F, Belt KT, Yu CY, Bradbuty A, Mandy WJ and Milstein C (1987) The rabbit CD1 and the evolutionary conservation of the CD1 gene family. *Immunogenetics* 30: 370-377

30 Calabi F, Yu CY and Milstein C (1989) CD1: from structure to function, in "Immunogenetics of the Major Histocompatibility Complex " Srivastava R et al eds, VCH Publishers, New York, 215-243

31 Bradbury A, Calabi F, Milstein C (1990) Expression of CD1 in the mouse thymus. *Eur J Immunol* 20: 1831-1836

32 Calabi F and Bradbury A (1991) The CD1 System. *Tissue Antigens* 37:1-9

33 Daga A , Tighe JE and Calabi F (1992) Leukaemia/Drosophila homology. *Nature* 356: 484

34 Tighe JE, Daga A and Calabi F (1993): Translocation breakpoints are clustered on both chromosome 8 and chromosome 21 in the t(8;21) of acute myeloid leukaemia *BLOOD* 81: 592-596

35 Tighe JE and Calabi F (1994): Alternative, out-of-frame runt/MTG8 transcripts are encoded by the derivative(8) chromosome in the t(8;21) of acute myeloid leukaemia M2. *BLOOD* 84: 2115-2121

- 36 Calabi F, Rhodes M, Williamson P and Boyd Y (1995) Identification and chromosomal mapping of a third mouse runt-like locus. *Genomics* 26: 607-610
- 37 Simeone A, Daga A and Calabi F (1995) Expression of runt in the mouse embryo. *Dev. Dynamics* 203: 61-70
- 38 Tighe JE and Calabi F (1995) t(8;21) breakpoints are clustered between alternatively spliced exons of MTG8. *Clinical Science* 85: 215-218
- 39 Castagnola P, Gennari M, Gaggero A, Rossi F, Daga A, Corsetti MT, Calabi F and Cancedda R (1996) Expression of runtB is modulated during chondrocyte differentiation. *Exp Cell Res* 223: 215-226
- 40 Corsetti MT and Calabi F (1996) Lineage- and stage-specific expression of runt box polypeptides in primitive and definitive haemopoiesis. *BLOOD* 89: 2359-2368
- 41 Calabi F and Cilli V (1998). MTG8, a gene rearranged in human leukaemia, is a member of a multigene family. *Genomics* 52: 332-341
- 42 Calabi F and Milstein C (2000). The molecular biology of CD1. *Sem Immunol* 12: 503-509.
- 43 Calabi F, Pannell R and Pavloska G (2001) Gene targeting reveals a crucial role for MTG8 in the gut. *Mol Cell Biol* 21: 5658-5666.
- 44 Rini D and Calabi F. (2001) Identification and comparative analysis of a second RUNX3 promoter. *Gene* 273: 13-22.
- 45 Calabi, E., Calabi, F., Phillips, A. D., and Fairweather, N. F. (2002). Binding of *Clostridium difficile* surface layer proteins to gastrointestinal tissues. *Infect. Immun.* 70: 5770-5778.
- 46 Pompa, P. P., Biasco, A., Frascerra, V., Calabi, F., Cingolani, R., Rinaldi, R., Verbeet, M. P., de Waal, E., and Canters, G. W. (2004). Solid state protein monolayers: Morphological, conformational, and functional properties. *J. Chem. Physics* 121: 10325-10328.
- 47 Bramanti, A., Pompa, P. P., Maruccio, G., Calabi, F., Arima, V., Cingolani, R., Corni, S., Di Felice, R., De Rienzo, F., and Rinaldi, R. (2005). Azurin for biomolecular electronics: a reliability study. *Jap. J. Appl. Physics Part 1-Regular Papers Brief Communications & Review Papers* 44: 6864-6866.

48 Frascerra, V., Calabi, F., Maruccio, G., Pompa, P. P., Cingolani, R., and Rinaldi, R. (2005). Resonant electron tunneling through azurin in air and liquid by scanning tunneling microscopy. *IEEE Trans. Nanotech.* 4: 637-640.

49 Maruccio, G., Biasco, A., Visconti, P., Bramanti, A., Pompa, P. P., Calabi, F., Cingolani, R., Rinaldi, R., Corni, S., Di Felice, R., et al. (2005). Towards protein field-effect transistors: Report and model of prototype. *Adv. Mat.* 17: 816.

50 Pompa, P. P., Chiuri, R., Manna, L., Pellegrino, T., del Mercato, L. L., Parak, W. J., Calabi, F., Cingolani, R., and Rinaldi, R. (2006). Fluorescence resonance energy transfer induced by conjugation of metalloproteins to nanoparticles. *Chem Phys Lett* 417, 351-357.

51 Pompa, P. P., Della Torre, A., del Mercato, L. L., Chiuri, R., Bramanti, A., Calabi, F., Maruccio, G., Cingolani, R., and Rinaldi, R. (2006). Charge transport in disordered films of non-redox proteins. *J Chem Phys* 125, 021103.

52 Pompa, P. P., Martiradonna L., Della Torre, A., Della Sala, F., Manna, L., De Vittorio, M., Calabi F., Cingolani R., and Rinaldi R. (2006). Metal-enhanced fluorescence of colloidal nanocrystals with nanoscale control. *Nat Nano* 1, 126.

53 Calabi, F. (2007). Hybrid Nanoparticles for Cellular Applications, In "Nanobioelectronics for electronics, biology, and medicine", A. Offenhausser, and R. Rinaldi, eds. (Springer).

54 Pompa, P. P., Martiradonna, L., Della Torre, A., Carbone, L., del Mercato, L. L., Manna, L., De Vittorio, M., Calabi, F., Cingolani, R., and Rinaldi, R. (2007). Fluorescence enhancement in colloidal semiconductor nanocrystals by metallic nanopatterns. *Sensors And Actuators B-Chemical* 126, 187-192.

## Annex 2

### Patents

1. Maruccio, G.; Primiceri, E.; Marzo, P.; Arima, V.; Krahne, R.; Pellegrino, T.; Della Torre, A.; Calabi, F.; Cingolani, R.; Rinaldi, R.  
A method and an electrical transducer device for detecting bio-recognition events in biomolecular interaction processes for genome/proteome analysis  
Patent type: International  
Patent number: WO2008139421  
Year: 2008
2. Maruccio, G.; Primiceri, E.; Marzo, P.; Arima, V.; Krahne, R.; Pellegrino, T.; Della Torre, A.; Calabi, F.; Cingolani, R.; Rinaldi, R.  
Procedimento e dispositivo a trasduzione elettrica per la rivelazione di eventi di bio-riconoscimento in processi di interazione biomolecolare per analisi genomiche/proteomiche  
Patent type: National

Patent number: TO2007A000341  
Year: 2007

3. Pompa, P.P.; Sabella, S.; Rinaldi, R.; Cingolani, R.; Calabi, F.  
Process and device for identifying and/or quantifying an analyte in a biological sample  
Patent type: International  
Patent number: PCT/IB2007/055112  
Year: 2007
4. Pompa P. P.; Sabella, S.; Rinaldi, R.; Cingolani, R.; Calabi, F.  
Procedimento e microdispositivo a trasduzione ottica per l'identificazione e/o quantificazione di un analita in un campione biologico / Method and microdevice to identify and/or quantify analytes in biological samples  
Patent type: National  
Patent number: TO2006A00088  
Year: 2006
5. Pompa P.P.; Del Mercato, L.L.; Della Torre, A.; Chiuri, R.; Calabi, F.; Maruccio, G.; Cingolani, R.; Rinaldi, R.  
Transistore biomolecolare ad effetto di campo comprendente un film di polipeptidi, e procedimento per la suarealizzazione / A biomolecular field-effect transistor comprising a polypeptide film and a method for the manufacture thereof  
Patent type: European  
Patent number: TO2005A00083  
Year: 2006
6. Pompa P.P.; Del Mercato, L.L.; Della Torre, A.; Chiuri, R.; Calabi, F.; Maruccio, G.; Cingolani, R.; Rinaldi, R.  
A biomolecular field-effect transistor comprising a polypeptide film and a method for the manufacture thereof  
Patent type: International  
Patent number: PCT/IB2006/054411  
Year: 2006