

Curriculum Vitae

Personal information **Alessandro Ascione**

Work experience

1. Employer: Istituto Superiore di Sanità
 - Start date: 10/2019
 - End date:
 - Position: Quality assessor for biotech products
 - Activities: ISS/AIFA Quality assessor for Marketing Authorization Applications for Biotech products, on behalf of the Italian Medicines Agency.
 - Country: Italy
2. Employer: Istituto Superiore di Sanità - National Centre for the Control and Evaluation of Medicines (CNCF) (from 01/03/2019 to date) and National Centre for Global Health (from 07/02/2007 to 28/02/2019)
 - Start date: 02/2007
 - End date:
 - Position: Research Scientist
 - Activities:

-Assessor for biotechnological drugs and other Biotech product in the context of Marketing Authorization Applications;
-Analysis of mAb-based drugs (particularly by means of capillary gel electrophoresis techniques such as isoelectrofocusing and capillary gel electrophoresis), for example in the context of post-marketing pharmacovigilance activities/CAP programme, collaborative studies with EDQM, combating counterfeiting of biological drugs, drafting monographs and thematic chapters for the European Pharmacopoeia;
-Execution and setting up of analytical methods and bioassays aimed at the genetic, molecular and functional characterization of recombinant antibodies;
-Data analysis and critical interpretation; preparation of technical- scientific documents (e.g. for data publications and grant applications);
-Applied research in immunobiotechnology: design and development of antibody-based constructs as platforms for innovative therapeutic strategies;
-Management of scientific collaborations.

- Country: Italy
2. Employer: Istituto Ortopedico Rizzoli
 - Start date: 08/2005
 - End date: 12/2005
 - Position: Researcher
 - Activities:

Development of strategies aimed at reverting the drug-resistant phenotype in sarcomatous cells by identifying and characterizing recombinant antibodies (from phage libraries) specific to molecules involved in the phenomenon of drug resistance. (Research Contract within the Research Project: "Genetic and biomolecular profiles of prognosis and prediction of drug response in musculoskeletal sarcomas").
 3. Employer: Istituto Ortopedico Rizzoli
 - Country: Italy
 - Start date: 02/2005
 - End date: 07/2005
 - Position: Researcher
 - Activities:

Selection and characterization of recombinant antibodies against antigens associated with Ewing sarcomas. (Research Contract within the research project: "Development of target-specific therapies in Ewing's osteosarcoma").
 4. Employer: Istituti Fisioterapici Ospitalieri
 - Country: Italy
 - Start date: 08/2004
 - End date: 10/2004
 - Position: Researcher
 - Activities:

Engineering of murine monoclonal antibodies directed to the human MDR1_P_glycoprotein by genetic fusion of immunoglobulin variable domains with human isotypes.
 5. Employer: Istituto Superiore di Sanità
 - Country: Italy
 - Start date: 02/2004
 - End date: 04/2004
 - Position: Researcher
 - Activities:

Isolation, production and characterization of monoclonal antibodies in the scFv format against prion proteins, within the scientific program: "High pressure treatment to reduce prion infectivity in food and blood" (Fasc. : 3ABF1).

- Country: Italy
6. Employer: Tecnofarmaci S.c.p.a.
- Start date: 032002
 - End date: 012004
 - Position: Researcher
 - Activities:

Isolation of recombinant antibodies directed to tumor associated antigens for the development of reagents useful in tumor diagnosis and therapy, as part of the research Project entitled "Improvement of diagnostic imaging supports", activity N ° 1: "Identification and characterization of Tumor Antigens".

- Country: Italy

Education and training

1. Subject: University 'La Sapienza'
 - Start date: 2003
 - End date: 2006
 - Qualification: PhD
 - Organisation:
 - Country: Italy
2. Subject: University 'Università degli Studi della Tuscia'
 - Start date: 2002
 - End date: 2003
 - Qualification: Qualification for the professional activity as biologist
 - Organisation:
 - Country: Italy
3. Subject: University of Rome "La Sapienza"
 - Start date: 1995
 - End date: 2001
 - Qualification: Degree in Biological Sciences, with honours
 - Organisation:
 - Country: Italy

Additional information

Publications

1. Ascione A, Belfiore M, Vesterinen J, Buda M, Holtkamp W, Luciani F. Charge heterogeneity of therapeutic monoclonal antibodies by different cIEF systems: Views on the current situation. **MABs 2024 mAbs, 16:1.**
2. Alessandra Mallano, Alessandro Ascione, Michela Flego. Antibody Response against SARS-CoV-2 Infection: Implications for Diagnosis, Treatment and Vaccine Development. *Int Rev Immunol.* 2021 : 1–21. Published online 2021 Sep 8. doi: 10.1080/08830185.2021.1929205
3. Istituto Superiore di Sanità (ISS) Working Group of Immunology COVID-19 (Alessandro Ascione appears as co_author). Interim immunological strategies for COVID-19 therapy and prevention. Version of June 4, 2020., published online on the ISS website, 24 p. Rapporto ISS COVID-19 n. 48/2020 (in Italian).
4. Michela Flego, Gianni Colotti, Alessandro Ascione, Maria Luisa Dupuis, Eleonora Petrucci, Roberta Riccioni, Mauro Andreotti, Carla Raggi, Alessandra Boe, Stefano Barca, Mara Gellini, Stefano Vella, Alessandra Mallano. Isolation and preliminary characterization of a human 'phage display' derived antibody against neural adhesion molecule_1 antigen interfering with fibroblast growth factor receptor_1 binding. *Hum Antibodies* 2020 Oct 23. doi: 10.3233/HAB_200431. Online ahead of print.
5. Alessandro Ascione, Claudia Arenaccio, Alessandra Mallano, Michela Flego, Mara Gellini, Mauro Andreotti, Craig Fenwick, Giuseppe Pantaleo, Stefano Vella, Maurizio Federico. Development of a novel human phage display derived anti_LAG3 scFv antibody targeting CD8+ T lymphocyte exhaustion. *BMC Biotechnol.* 2019 Oct 17;19(1):67. doi: 10.1186/s12896_019_0559_x.
6. Maurizio Federico, Flavia Ferrantelli, Claudia Arenaccio, Eleonora Olivetta, Chiara Chiozzini, Patrizia Leone, Zulema Percario, Alessandro Ascione, Michela Flego, Paola Di Bonito, Luisa Accardi. The Intracellular Delivery of anti-HPV16 E7 scFvs through Engineered Extracellular Vesicles Inhibits the Proliferation of HPV_infected Cells. *Int J Nanomedicine.* 2019 Nov 7;14:8755_8768. doi: 10.2147/IJN.S209366. eCollection 2019.
7. Michela Flego; Aldo Frau; Luisa Accardi; Alessandra Mallano; Alessandro Ascione; Mara Gellini; Elisa Fanunza; Stefano Vella; Paola Di Bonito; Enzo Tramontano. Human antibody fragments recognizing the VP35 protein of Zaire ebola filovirus are able to inhibit the VP35 protein activity. *BMC Biotechnol.* 2019 Sep 5;19(1):64. doi: 10.1186/s12896_019_0554_2.
8. A. Mallano, A. Ascione, M. Flego, M. Gellini, M. Andreotti, Z. Michelini, D. Moricoli e S. Vella. Abstract: 'Generazione e caratterizzazione di una immunocitochina anti_CD56/IL15 per una selettiva ricostituzione funzionale di cellule NK nell'infezione da HIV'. In occasione degli Stati Generali della Ricerca Biomedica, 27_28 aprile 2016, Roma, presso l'Auditorium del Massimo (via Massimo 1 _ EUR).
9. Mallano A, Flego M, Gellini M, Ascione A, Vella S (Department of Therapeutic Research and Medicine Evaluation, ISS). Abstract: 'Development of a human antibody able to break the CD161_mediated pathway in order to design new therapeutic strategies in Multiple Sclerosis disease'. Congresso Scientifico Annuale AISM e la sua Fondazione _ Roma, 25 _ 27 maggio 2016 [Centro Congressi Roma Eventi Piazza di Spagna, in Via Alibert, 5 _ Hotel A.ROMA Lifestyle, in Via G. Zoega, 59].
10. Maria Luisa Dupuis, Valentina Fiori, Alessandra Soriani, Biancamaria Ricci, Diego Moricoli, Sabrina Dominici, Alessandro Ascione, Angela Santoni, Mauro Magnani and Maurizio Cianfriglia. The human Antibody Fragment DIATHIS1 Specific for CEACAM1 Enhances Natural Killer_Cell Cytotoxicity Against Melanoma Cell Lines in vitro. *Journal of Immunotherapy* 2015 Nov_Dec;38(9):357_70. doi: 10.1097/CJI.0000000000000100.
11. Maria Luisa Dupuis, Valentina Fiori, Alessandra Soriani, Biancamaria Ricci, Diego Moricoli, Sabrina Dominici, Alessandro Ascione, Angela Santoni, Mauro Magnani and Maurizio Cianfriglia. Abstract: 'The human single chain antibody Diathis1 interferes in vitro with the ceacam1_mediated inhibitory mechanism hampering the NK antitumor activity: a way forward towards innovative immunotherapeutic strategies against melanoma'. Convegno "Le nuove frontiere nell'immunoterapia dei tumori: realtà e prospettive" Roma, ISS, 16 ottobre 2015
12. Dupuis ML, Ascione A, Palmisano L, Vella S, Cianfriglia M. Raltegravir does not revert efflux activity of MDR1_P_glycoprotein in human MDR cells. *BMC Pharmacol Toxicol.* 2013 Sep 20;14:47. doi: 10.1186/2050_6511_14_47.
13. Flego M*, Ascione A*, Cianfriglia M, Vella S. Clinical development of monoclonal antibody_based drugs in HIV and HCV diseases. *BMC Med.* 2013 Jan 4;11:4. doi: 10.1186/1741_7015_11_(*Contributed equally).

14. Mara Gellini, Alessandro Ascione, Michela Flego, Alessandra Mallano, Maria Luisa Dupuis, Silvia Zamboni, Manuela Terrinoni, Valeria D'Alessio, Maria Cristina Manara, Katia Scotlandi, Piero Picci, Maurizio Cianfriglia. Generation of Human single_chain Antibody to the CD99 Cell Surface Determinant Specifically Recognizing Ewing's Sarcoma Tumor Cells. *Current pharmaceutical Biotechnology* 2013 Mar;14(4):449_63.
15. Cianfriglia M, Ascione A, Flego M, Gellini M, Dupuis ML, Barca S, Tombesi M, Mallano A, Scotlandi K, Picci P, Zamboni S, Magnani M, Fiori V, Dominici S. Disegno e sviluppo di anticorpi monoclonali umani in forma di single chain fragment variable (SCFV) per migliorare efficacia e sicurezza nella immunoterapia dei tumori. In: Belardelli F, Moretti F, ed. *Attività e impegno dell'Istituto Superiore di Sanità nella lotta contro il cancro*. Roma: Istituto Superiore di Sanità; 2012. (Rapporti ISTISAN 12/37). p.139_142.
16. Maurizio Cianfriglia, Valentina Fiori, Sabrina Dominici, Silvia Zamboni, Michela Flego¹, Maria Luisa Dupuis, Alessandro Ascione, Mara Gellini, Alessandra Mallano and Mauro Magnani. CEACAM1 is a Privileged Cell Surface Antigen to Design Novel ScFv Mediated Immunotherapies of Melanoma, Lung Cancer and Other Types of Tumors. *The Open Pharmacology Journal*, 2012, 6, 1_11.
17. Cianfriglia M, Mallano A, Ascione A, Dupuis ML. Multidrug transporter proteins and cellular factors involved in free and mAb linked calicheamicin_{gamma}1 (gentuzumab ozogamicin, GO) resistance and in the selection of GO resistant variants of the HL60 AML cell line. *Int J Oncol*. 2010 Jun;36(6):1513_20.
18. Ascione A, Capecchi B, Campitelli L, Imperiale V, Flego M, Zamboni S, Gellini M, Alberini I, Pittiglio E, Donatelli I, Temperton NJ, Cianfriglia M. Human monoclonal antibodies in single chain fragment variable format with potent neutralization activity against influenza virus H5N1. *Antiviral Res*. 2009 Sep;83(3):238_44. doi: 10.1016/j.antiviral.2009.05.005. Epub 2009 May 27.
19. Ascione A, Cianfriglia M, Dupuis ML, Mallano A, Sau A, Pellizzari Tregno F, Pezzola S, Caccuri AM. The glutathione S_transferase inhibitor 6_(7_nitro_2,1,3_benzoxadiazol_4_ylthio)hexanol overcomes the MDR1_P_glycoprotein and MRP1_mediated multidrug resistance in acute myeloid leukemia cells. *Cancer Chemother Pharmacol*. 2009 Jul;64(2):419_24. Epub 2009 Mar 15.
20. Alessandra Mallano and Silvia Zamboni, Giulia G Carpinelli, Filippo F Santoro, Michela M Flego, Alessandro A Ascione, Mara M Gellini, Marina M Tombesi, Franca F Podo and Maurizio M Cianfriglia. "Generation and characterization of a human single_chain fragment variable (scFv) antibody against cytosine deaminase from Yeast". *BMC Biotechnology* 2008, 8: 68.
21. Zamboni S, Mallano A, Flego M, Ascione A, Dupuis ML, Gellini M, Barca S, Cianfriglia M "Genetic construction, expression, and characterization of a single chain anti_CEA antibody fused to cytosine deaminase from yeast." *Int J Oncol*. 2008 Jun;32(6):1245_51.
22. Flego M, Ascione A, Zamboni S, Dupuis ML, Imperiale V, Cianfriglia M. "Generation of human scFvs antibodies recognizing a prion protein epitope expressed on the surface of human lymphoblastoid cells." *BMC Biotechnol*. 2007 Jul 2;7:38.
23. Emiliano Pavoni, Michela Flego, Maria Luisa Dupuis, Stefano Barca, Fiorella Petronzelli, Anna Maria Anastasi, Valeria D'Alessio, Angela Pelliccia, Paola Vaccaro, Giorgia Monteriù, Alessandro Ascione, Rita De Santis, Franco Felici, Maurizio Cianfriglia, Olga Minenkova. "Selection, affinity maturation, and characterization of a human scFv antibody against CEA protein". *BMC Cancer* 2006, 6:41.
24. Cianfriglia M, Flego M, Ascione A, Zamboni S, Imperiale V, Gellini M, Dupuis ML. Immunotherapy of drug unresponsiveness tumors. Selection and characterization of human single chain fragment variable (SCFV) monoclonal antibodies against CEA. In: Garaci E, D'Addazio C, Giuliano F, ed. *ISS/NIH Collaborative Programme 2006 Progress report meeting*. Istituto Superiore di Sanità. Rome, July 4_6, 2006. *Proceedings*. Roma: Istituto Superiore di Sanità; 2006. (Rapporti ISTISAN 06/50). p.53_59.
25. Cianfriglia M, Flego M, Ascione A. Biotecnologie immunologiche e loro applicazioni. In: Cometa MF, Di Consiglio E, Gemma S, Parisi L, Volpe MT, ed. 14. *Congresso nazionale della Società italiana di tossicologia*. Istituto Superiore di Sanità. Roma, 6_9 febbraio 2006. *Riassunti*. Roma: Istituto Superiore di Sanità; 2006. (ISTISAN Congressi 06/C1). p.96.
26. Di Fabio S, Cianfriglia M, Flego M, Ascione A, Gellini M, Zamboni S, Binelli A, Carlini F, Germinario EAP, Vella S. Animal HU_SCID model of vaginal transmission of HIV_1 for the preclinical evaluation of microbicides. Development of peptidomimetics and mini_antibodies as a new class of microbicides of biotechnological origin. In: Garaci E, D'Addazio C, Giuliano F, ed. *ISS/NIH Collaborative Programme 2006 Progress report meeting*. Istituto Superiore di Sanità. Rome, July 4_6, 2006. *Proceedings*. Roma: Istituto Superiore di Sanità; 2006. (Rapporti ISTISAN 06/50). p.298_301.
27. Silvia Zamboni, Alessandro Ascione, Michela Flego, Maria Luisa Dupuis, Maurizio Cianfriglia. Abstract: "Generazione e manipolazione genetico_molecolare di anticorpi in forma scFv (single chain fragment variable) contro l'antigene carcinoembrionario (CEA)", (nell'ambito del III Workshop SIICA. Certosa di Pontignano (Siena), 2_4 maggio 2006).
28. Michela Flego, Paola Di Bonito, Alessandro Ascione, Silvia Zamboni, Alessandra Carattoli, Felicia Grasso, Antonio Cassone and Maurizio Cianfriglia. "Generation of human antibody fragments recognizing distinct epitopes of the nucleocapsid (N) SARS_CoV protein using a phage display approach". *BMC Infectious Diseases*: 2005 Sep 19;5:73.
29. Alessandro Ascione, Michela Flego, Silvia Zamboni, Emanuela De Cinti, Maria Luisa Dupuis, Maurizio Cianfriglia. "Application of a synthetic phage antibody library (ETH_2) for the isolation of single chain fragment variable (scFv) human antibodies to the pathogenic isoform of the hamster prion protein (HaPrPsc)". *Hybridoma and Hybridomics* 2005; 24: 3: 127_132.
30. M. Cianfriglia, M.L. Dupuis, M. Tombesi, M. Flego, S. Zamboni, A. Ascione, P. Puddu, S. Barca. Abstract: "Modulazioni delle funzioni di trasporto della P_Glicoproteina esercitata da anticorpi monoclonali specifici." Quinto programma nazionale di ricerca sull'AIDS, Istituto Superiore di Sanità, Roma 2_6 maggio 2005;
31. Alessandro Ascione, Michela Flego, Silvia Zamboni, Emanuela De Cinti, Maria Luisa Dupuis, Maurizio Cianfriglia. "Isolation and characterization of the human monoclonal antibodies C10 in single chain fragment variable (scFv) format to glucose oxidase from *Aspergillus niger*". *Hybridoma and Hybridomics* 2004; 23(6): 380_384.
32. Michela Flego, Vito Mennella, Franca Moretti, Francesca Poloni, Maria Luisa Dupuis, Alessandro Ascione, Stefano Barca, Franco Felici and Maurizio Cianfriglia. "Identification by phage display of the linear continuous MRP1 epitope in the Multidrug Resistance_Associated Protein (MRP1)". *Biol. Chem.*, Vol.384, pp.139_142, January 2003.
33. Michela Flego, Alessandro Ascione, Alessandro Pini, Vito Mennella, Maria Luisa Dupuis, Giuseppe Benagiano and Maurizio Cianfriglia. "Uso di librerie fagiche per isolare in vitro anticorpi monoclonali ricombinanti di predeterminata specificità". *Ann Ist Super Sanità* 2002; 38(4): 401_410 34. Maurizio Cianfriglia, Michela Flego, Alessandro Ascione, Stefano Barca. Abstract: "Sviluppo biotecnologico di anticorpi monoclonali per uso clinico" (nell'ambito del convegno "Immunoglobuline ad uso terapeutico: dalla produzione alla pratica clinica", Istituto Superiore di Sanità, Roma, 30_31 ottobre 2002).

Projects

PATENT APPLICATIONS

1) 'Single_chain variable fragment (scFv) able to recognize and bind CD99 human protein' Patent No.: US 8,710,194 B2. Data of Patent: Apr. 29, 2014. Inventors: Piero Picci, Katia Scotlandi, Alessandro Ascione, Maurizio Cianfriglia, Maria Luisa Dupuis, Michela Flego, Mara Gellini, Alessandra Mallano.

2) "Generation of new selected oligomeric variants, with improved pharmacokinetic properties, of human single_chain fragment variable (scFv) antibody to the extracellular domain of CEACAM1 (CD66) cell surface determinant specifically recognizing solid tumor cells including melanoma, lung and gastric carcinomas and derivatives." Patent N.: US 8,822,648 B2. Data of patent: Sep 2, 2014. Inventors: Maurizio Cianfriglia, Michela Flego, Alessandro Ascione, Valentina Fiori, Sabrina Dominici, Alessandra Mallano, Diego Moricoli, Silvia Zamboni.

3) "Human monoclonal antibodies in scFv format with neutralization activity against Influenza H5N1" Numero di pubblicazione WO2010040572, Numero domanda PCT/EP2009/007631, Data di pubblicazione 15 apr 2010, Data di registrazione 7 ott 2009.: Alessandro Ascione, Maurizio Cianfriglia, Michela Flego.

PROJECTS

Grants (as principal investigator) BANDO NAZIONALE AIDS 2009 – ISS : "Phage display approaches for the isolation of human antibodies and their mimotopes" to HIV_1 proteins for passive immunotherapy of HIV infection and to design new and effective anti HIV biological therapeutics and vaccines".

Other Research Projects in which he has been involved As collaborator/key contributor:

- Grant: Ricerca Finalizzata 2018 _ Italian Ministry of Health. Project Code: RF_2018_12365208. Principal Investigator: Fantuzzi Laura. Applicant institution: Istituto Superiore Di Sanita' (Rome, Italy). Project title: "Innovative human bispecific ab construct targeting HIV replication, chronic inflammation and immune activation: en route for the cure and beyond."
- Grant: Ricerca Finalizzata 2016 _ Italian Ministry of Health. Project type: Italian Researcher Abroad. Project Code: PE_2016_02364927. Principal Investigator: Vella Stefano. Applicant institution: Istituto Superiore Di Sanità (Rome, Italy). Project title: 'Strengthening exhausted immunological responses through innovative mab_based drugs targeting multiple immune checkpoints and activating pathways: towards hiv functional cure'.
- Grant: Project IMI/INT/2014_02136 Title: Vaccine batch to vaccine batch comparison by consistency testing (VAC2VAC).
- Grant: FISM _ Call 2014. Project title: "Development of a human antibody able to break the cd161_mediated pathway in order to design new therapeutic strategies in multiple sclerosis disease."
- Grant: Ricerca Finalizzata 2010 _ Italian Ministry of Health. Project type: Young Researcher. Project Code: GR_2010_2306432. Principal Investigator: Alessandra Mallano. Applicant Institution: Istituto Superiore Di Sanita' (Rome, Italy). Project title: 'Generation and characterization of an anticd56_il15 immunocytokine for functional reconstitution of NK cells in HIV infection'.

Memberships

Other Relevant Information

CAP (Centrally Authorized Products testing plans) Participation in the technical_analytical control activity of mab_based products, using the cIEF (capillary isoElectric_Focusing) and capillary Gel electrophoresis CD_SDS methods, as part of CAP testing plans 2019_2020_2021_2022_2023_2024. Teaching activity 2010_2011_ Teacher of supplementary course entitled "Innovative applications of biotechnological products" as part of the 'course of "Chemistry pharmaceutical biotech products" (academic year 2010_2011), valid for the Master of Science in Biotechnology, Faculty of Science and Technology at the University "Carlo Bo", Urbino, Italy. 2009_2010_ Professor of the course of "Chemistry pharmaceutical biotech products" (academic year 2009_2010), valid for the Master of Science in Biotechnology, Faculty of Science and Technology at the University "Carlo Bo", Urbino, Italy. 2008/2010 _ Tutor for the following experimental degree thesis: a) "Development and characterization of an immuno_cytokine scFv anti_CEACAM1 / IL_2 as a potential therapeutic agent for melanoma", (candidate: Francesco Bonfilio _ academic year 2009_2010_ Faculty of Medicine I and II, Degree Degree in Medical Biotechnology, Molecular and Cellular, University of Rome "La Sapienza"); b) 2008/2009 _ "Human monoclonal antibodies in scFv format (single chain Fragment variable) with neutralizing activity against influenza virus H5N1", (candidate Eliana Pittiglio, academic year 2008_2009 _ Faculty of Pharmacy, Degree in Pharmaceutical Biotechnology, University of Rome "La Sapienza"). 15/04/2008_ Seminar: "Immunobiotechnology" within the "Master in Biotechnology in molecular diagnostics", held at the Institute of Biological Chemistry, University "G. Fornaini" "Carlo Bo", Via Saffi, 2 61029 Urbino, Italy.