

## General information

- Date and place of birth: 26.09.1963, Rome-Italy
- Status : Married, two children
- Citizenship: Italian
- Address: Dipartimento di Sanità Pubblica e Malattie Infettive, Università "La Sapienza", P.le Aldo Moro 5, 00185 Rome, Italy. Tel.: 0039 06 33775629; 0039 06 4991 4933; Fax: 0039 06 4991 4653; e-mail: david.modiano@uniroma1.it

## Education

- 1994: PhD in Microbiology and Epidemiology University "La Sapienza", Rome, Italy;
- 1990: MD degree, summa cum laude, University "La Sapienza", Rome, Italy;
- 1982: Maturità, Liceo Classico, Torquato Tasso, Rome, Italy.

## Current positions

### Academic position

- 2003- : Full Professor of Parasitology, Department of Public Health and Infectious Diseases, University "La Sapienza", Rome, Italy.

### Hospital position

- 2001- : Head, Laboratory of Parasitology, Sant'Andrea Hospital, Faculty of Medicine, University of Rome "La Sapienza".

## Previous positions

- 2001-2003: Assistant Professor of Parasitology, Department of Public Health Sciences University "La Sapienza", Rome, Italy;
- 1996-2001: Assistant Professor of Parasitology, Department of Molecular, Cellular and Animal Biology, Faculty of Sciences, University of Camerino, Italy.
- 1994-1996: Consultant, WHO Collaborating Centre for Malaria Epidemiology, University of Rome "La Sapienza" (support to projects in Burkina Faso, Mali, Guinea, Benin, Madagascar).
- 1990-1999: Malariologist, Italian Cooperation, Malaria Projects in Burkina Faso and Madagascar.
- 1985-1986: Technician, Malaria Project, Italian Cooperation, Burkina Faso.

## Main scientific interests

- Genetic resistance/susceptibility to *Plasmodium falciparum* malaria;
- Malaria epidemiology;
- Pathogenesis and clinical features of severe and non complicated malaria.

## Member of:

- BioMalPar/EVIMalaR EC-NoE (<http://www.biomalpar.org/>); <http://www.evimalar.org/>);
- Malaria Genomic Epidemiology Network (MalariaGEN; <http://www.malariagen.net/>).

## Reviewer for the following international grants:

- EU FP7, Panel member, ERC LS-6, Infection and Immunity;
- EU-FP6, EDCTP Projects;
- EU BioMalPar/MIM-TDR Re-entry grants;
- EU BioMalPar PhD Programme;
- MalariaGEN Consortial Projects;
- Wellcome Trust;

- WHO MIM/TDR.

Reviewer for the following international journals:

Acta Tropica, American Journal of Tropical Medicine and Hygiene, American Journal of Human Genetics, Blood, BMC Genetics, Genes and Immunity, Genetics, Human Immunology, Journal of Infectious Diseases, Nature Genetics, PLOS One, PLOS Medicine (Academic Editor), PLOS Genetics, PLOS Pathogens, PNAS, Microbes and Infection, Scandinavian Journal of Immunology, Science, The Lancet, Tissue Antigens, Transactions of the Royal Society of Tropical Medicine, Malaria Journal.

#### Scientific accomplishments

- Demonstration of the existence of clear-cut genetic-based inter-ethnic differences in the susceptibility to Plasmodium falciparum malaria among sympatric human populations with different genetic backgrounds (PNAS, 1996). These differences are independent to classical malaria resistance genes and, as documented by more recent investigations, are based on immunogenetic differences in the immunoregulatory network (PNAS, 2008).
- Demonstration of the protective role of Haemoglobin C against clinical malaria (Nature, 2001).
- Demonstration that human genetic variation, besides affecting the resistance/susceptibility to infectious diseases, may also influence the transmission dynamics of pathogens (Nature Genetics, 2010).
- As member of the Malaria Genomic Epidemiology Network (<http://www.malariagen.net/>), he collaborates to the international effort to understand how genome variation in human, Plasmodium and Anopheles populations affects the biology and epidemiology of malaria, (Nature, 2008; Nature Genetics, 2009, Nature, 2012, Nature Genetics, 2014, Nature, 2015; Science 2017).

#### Awards

- 2012: "Battista Grassi" Prize, Accademia Nazionale dei Lincei, Rome, Italy

SCOPUS H-index: 31; citations 3513 ; Total impact factor: 510

#### Major publications

- Resistance to malaria through structural variation of red blood cell invasion receptors. Leffler EM et al. Science. 2017. Impact factor: 37.
- Characterisation of the opposing effects of G6PD deficiency on cerebral malaria and severe malarial anaemia. Clarke GM, et al; Elife. 2017. Impact factor: 8.3.
- Admixture into and within sub-Saharan Africa. Busby GB, et al; Elife. 2016. Impact Factor: 8.3.
- Glucose-6-phosphate dehydrogenase deficiency and the risk of malaria and other diseases in children in Kenya: a case-control and a cohort study. Uyoga S, et al; Lancet Haematol. 2015. Impact Factor: 4.9.
- A novel locus of resistance to severe malaria in a region of ancient balancing selection. Malaria Genomic Epidemiology Network, Band G, et al; Nature. 2015. Impact Factor: 42.35.

- Novel Insights Into the Protective Role of Hemoglobin S and C Against Plasmodium falciparum Parasitemia. Mangano VD, et al; J Infect Dis. 2015. Impact factor: 5.78.
- Reappraisal of known malaria resistance loci in a large multicenter study. Rockett KA, Clarke GM, , et al; Nature Genetics. 2014. Impact Factor: 29.65.
- An evolutionary perspective of how infection drives human genome diversity: the case of malaria. Mangano VD, Modiano D. Current Opinion in Immunology. 2014. Impact factor: 7.87.
- Analysis of Plasmodium falciparum diversity in natural infections by deep sequencing. Manske, et al; Nature. 2012. Impact Factor: 42.35.
- Human genetic variation is associated with Plasmodium falciparum drug resistance. Paganotti GM, et al; Journal of Infectious Diseases. 2011. Impact factor: 5.78.
- Genetic variation in human HBB is associated with Plasmodium falciparum transmission. Gouagna , et al; Nature Genetics. 2010. Impact Factor: 29.65.
- Genome-wide and fine-resolution association analysis of malaria in West Africa. Jallow M, , et al; Nature Genetics. 2009. Impact Factor: 29.65.
- A global network for investigating the genomic epidemiology of malaria. Achidi EA, et al; Nature. 2008. Impact Factor: 42.35.
- Functional deficit of T regulatory cells in Fulani, an ethnic group with low susceptibility to Plasmodium falciparum malaria. Torcia MG, et al; Proc Natl Acad Sci U S A. 2008. Impact factor: 9.81.
- Haemoglobin C protects against clinical Plasmodium falciparum malaria. Modiano D, et al; Nature. 2001. Impact Factor: 42.35.
- Different response to Plasmodium falciparum malaria in west African sympatric ethnic groups. Modiano D, et al; Proc Natl Acad Sci USA. 1996. Impact factor: 9.81.