Hicham EL COSTA
Date of birth: 14/06/1982
Nationality: French
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PhD in Immunology and infectious diseases
Master in Management

Area of expertise
Immune response and pathogenesis, inflammation, immune metabolism, immune aging, mucosal immunology, viral infection, congenital infection

Membership of scientific societies
Société Française d'Immunologie
Réseau National HEV

Peer review
Pathogens, viruses, Frontiers immunology, Scientific Reports, Placenta, Journal of reproductive immunology

Major Grants as PI
Feder, ANRS, FRM, SIDACTION, EMBIC, Agence de Biomedecine, Reacting-ITMO-I3M.

Teaching at Paul Sabatier University
MS Biologie-Santé Parcours Vectorologie, Thérapie génique et Vaccinologie

Experimental Skills
Cell Biology
Molecular Biology
Biochemistry
Virology
Metabolic assays
Animal experimentation

Management skills
Management of health institutions
Project management
Quality approaches
Student training and mentoring

Professional Experience

2019- Present CRCN Inserm
Toulouse Institute for Infectious and Inflammatory diseases

Metabolic fitness of immune cells in health and diseases during aging.
Hepatitis E virus immunopathogenesis in SOT patients.

2015-2019 Postdoctoral associate
Center of Pathophysiology of Toulouse - Purpan

Hepatitis E and ZIKV at the maternal-fetal interface: pathogenesis and maternal innate immune response.
Elderly patients with acute HEV infection: immune response and clinical complications.
Benefits of innate immune response in stem/progenitor cell-based cardiac regenerative/reparative therapies.

2012-2015 Postdoctoral researcher
Pasteur Institute - Paris

Control of HIV-1 infection within the human decidua: bidirectional crosstalk between decidual macrophages and NK cells.
Innate immunity of the female reproductive tract and HIV-1 transmission.

2010-2011 Quality and Risks managements
Direction de la qualité et de la sécurité des pratiques des CHU de Toulouse, Hôtel Dieu-St Jacques

2005-2009 PhD in Immunology
INSERM U563, Hôpital Purpan, Toulouse, France

Uterine NK cell functions in healthy and pathological pregnancies.

Education

Paul Sabatier University, Toulouse, France

2009 PhD in Immunology
2005 MS in Immunology and Infectious disease
2003 BS in Cellular Biology and Physiology
2002 Diploma of Higher Education in life and earth sciences

Additional Education

Paul Sabatier University, Toulouse, France
2011 MS in Management of health institutions
2017 Qualification MCF section 65 – Biologie cellulaire

Main Published Articles (* share authorship)

The mechanisms underlying the immune control of Zika virus infection at the maternal-fetal interface.
Espino A, Gouilly J, Chen Q, Colin P, Guerby P, Izopet J, Amara A, Tabiasco J, Al-Daccak R, ***El Costa H****, Jabrane-Ferrat N*.
Front Immunol. 2022 Nov 22:13:1000861

Effector memory CD8 T cell response elicits Hepatitis E Virus genotype 3 pathogenesis in the elderly.
El Costa H*, Gouilly J, Abravanel F, Bahraoui E, Pero, JM, Kamar N, Jabrane-Ferrat N, Izopet J.*
PLoS Pathog. 2021 Feb 22;17(2): e1009367

Peripheral Plasma and Semen Cytokine Response to Zika Virus in Humans.
Mansuy JM,* ***El Costa H****, Gouilly J, Mengelle C, Pasquier C, Martin-Blondel G, Izopet J, Jabrane-Ferrat N. Emerg Infect Dis. 2019 Apr;25(4):823-825.*

Genotype specific pathogenicity of hepatitis E virus at the human maternal-fetal interface.
Gouilly J, Chen Q, Siewiera J, Cartron G, Levy C, Dubois M, Al-Daccak R, Izopet J, Jabrane-Ferrat N, ***El Costa H****.* Nat Commun. 2018 Nov 12;9(1):4748. doi: 10.1038/s41467-018-07200-2.

Minimizing the risk of allo-sensitization to optimize the benefit of allogeneic cardiac-derived stem/progenitor cells.
Hocine HR, ***El Costa H****, Dam N, GiustinianiJ, Palacios I, Loiseau P, Benssussan A, Borlado LR, Charron D, Suberbielle C, Jabrane-Ferrat N, Al-Daccak R. Sci Rep. 2017 Jan 24 ;7:41125.*

ZIKA virus reveals broad tissue and cell tropism during the first trimester of pregnancy.
El Costa H*, Gouilly J, Mansuy JM, Chen Q, Levy C, Cartron G, Veas F, Al-Daccak R, Izopet J, Jabrane-Ferrat N. Sci Rep. 2016 Oct 19;6:35296.*

NK cells control HIV-1 infection of macrophages through soluble factors and cellular contacts in the human decidua.
Quillay H, ***El Costa H****, Duriez M, Marlin R, Cannou C, Madec Y, de Truchis C, Rahmati M, Barré-Sinoussi F, Nugeyre MT, Menu E. Retrovirology. 2016 Jun 6;13(1):39.*

The local environment orchestrates mucosal decidual macrophage differentiation and substantially inhibits HIV-1 replication.
El Costa H*, Quillay H, Marlin R, Cannou C, Duriez M, Benjelloun F, de Truchis C, Rahmati M, Ighil J, Barré-Sinoussi F, Nugeyre MT, Menu E. Mucosal Immunol. 2016 May;9(3):634-46.*

Distinct characteristics of endometrial and decidual macrophages and regulation of their permissivity to HIV-1 infection by SAMHD1.
Quillay H, ***El Costa H****, Marlin R, Duriez M, Cannou C, Chrétien F, Fernandez H, Lebreton A, Ighil J, Schwartz O, Barré-Sinoussi F, Nugeyre MT, Menu E. J Virol. 2015 Jan 15;89(2):1329-39.*

Human cytomegalovirus infection elicits new decidual natural killer cell effector functions.
Siewiera J, ***El Costa H****, Tabiasco J, Berrebi A, Cartron G, Le Bouteiller P, Jabrane-Ferrat N. PLoS Pathog.2013 ;9(4).*

Effector functions of human decidual NK cells in healthy early pregnancy are dependent on the specific engagement of natural cytotoxicity receptors.
El Costa H*, Tabiasco J, Berrebi A, Parant O, Aguerre-Girr M, Piccinni MP, Le Bouteiller P. J Reprod Immunol. 2009 Nov;82(2):142-7. Article recommended F1000 Medicine, selected by Ofer Mandelboim.*

Critical and differential roles of NKp46- and NKp30-activating receptors expressed by uterine NK cells in early pregnancy.
El Costa H*, Casemayou A, Aguerre-Girr M, Rabot M, Berrebi A, Parant O, Clouet-Delannoy M, Lombardelli L, Jabrane-Ferrat N, Rukavina D, Bensussan A, Piccinni MP, Le Bouteiller P, Tabiasco J. J Immunol. 2008 Sep 1;181(5):3009-17.*

Reviews and Books

Decidua Basalis: An Ex Vivo Model to Study HIV-1 Infection During Pregnancy and Beyond.
*Jabrane-Ferrat J, **El Costa H.***
Methods Mol Biol. 2022:2407:205-213.

Innate Immune Response to Viral Infections at the Maternal-Fetal Interface in Human Pregnancy.
*Espino A, **El Costa H**, Tabiasco J, Al-Daccak R, Jabrane-Ferrat N.*
Front Med (Lausanne). 2021 Jul 22:8:674645.

The human decidual NK-cell response to virus infection: what can we learn from circulating NK lymphocytes?
*Le Bouteiller P, Siewiera J, Casart Y, Aguerre-Girr M, **El Costa H**, Berrebi A, Tabiasco J, Jabrane-Ferrat N. J Reprod Immunol. 2011 Mar;88(2):170-5.*

Tolérance foeto-maternelle placentaire: nouveaux concepts.
*Le Bouteiller P. & **El Costa H**. Archives de Pédiatrie 2009.*

Immunity of pregnancy: novel concepts.
*Le Bouteiller P, **El Costa H**, Aguerre-Girr M, Tabiasco J. Bull Acad Natl Med. 2009 May;193(5):1029-41; discussion 1041-2, 1067-8.*

Tolérance foeto-maternelle placentaire: nouveaux concepts.
*Le Bouteiller P & **El Costa H** (2008).In, Progrès en néonatologie, vol 28, Ed G. Moriette, Edition "Association de néonatologie de Port-Royal, pp. 245-261.*

HLA-G et récepteurs NK dans l'endomètre gestant.
***El Costa H**., Berrebi A., Clouet-Delannoy M., Tabiasco J., Le Bouteiller P. Reproduction Humaine et Hormones, 2008 Vol XXI, 1, pp.69-74.*

Tolérance foeto-maternelle placentaire: nouveaux concepts.
*Le Bouteiller P. & **El Costa H**. Archives de Pédiatrie 2008.*

Interactions HLA-G-cellules lymphoïdes et endothéliales dans la decidua basalis: conséquences fonctionnelles.
*Le Bouteiller P, Parant O, Berrebi A, **El Costa H** & Tabiasco J. (2007) Reproduction Humaine et Hormones, 20:170-175.*

Human decidual NK cells: unique phenotype and functional properties.
*Tabiasco J, Rabot M, Aguerre-Girr M, **El Costa H**, Berrebi A, Parant O, Laskarin G, Juretic K, Bensussan A, Rukavina D, Le Bouteiller P.*
Placenta. 2006 Apr;27 Suppl A:S34-9.