BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Lbachir BenMohamed	POSITION TITLE Assistant Professor
eRA COMMONS USER NAME Lbenmohamed	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Bab-Sahara College, Guelmim, Morocco	B.Sc	1984	Exp. Biology
Paris VII University, Paris, France	M.S.	1990	Molecular Biology
Pasteur Institute, Paris, France	Diploma	1991	Immunol/Biochemistry
Pasteur Institute & Paris VII University, Paris, France	Ph.D.	1997	Immunology

Positions and Honors

Positions and Employment

1997-1999 Post-Doctoral Research Fellow, Department of Hematology/BMT City of Hope National Medical Center, Duarte, CA
1999-2000 Research Fellow, Division of Immunology, Beckman Research Institute of City of Hope, Duarte, CA
2001-2002 Research Scientist, Ophthalmology Research. Cedars-Sinai Medical Center, Los Angeles, CA
2002-Present Assistant Professor Step IV, Department of Ophthalmology & Center for Immunology, University of California Irvine, Orange, CA

Other Experience and Professional Memberships

1992-1996 Fellowship from the French Government, France
1996-1997 Fellowship from Pasteur Institute, Paris, France
1998 Award from American Society of Hematology, US
1999 Award from American Society of Hematology, US
2000 Patent: Mucosal immunization using Lipopeptides, US
2001 Award from The Discovery Fund for Eye Research, Los Angeles, CA, US
2003 Patent: Epitope-based vaccine against herpes simplex virus, US
2006 Research to Prevent Blindness (RPB) Award

B. Selected peer-reviewed publications (in chronological order).

Fidock DA, Gras-Masse H, Lepers JP, Brahimi K, **BenMohamed L.** Mellouk S, Guerin-Marchand C, Londono A, Raharimalala L, Meis JF, et al. Plasmodium falciparum liver stage antigen-1 is well conserved and contains potent B and T cell determinants. *J Immunol.* **1994.** 153(1):190-204.

Bottius E, **BenMohamed L.**, Brahimi K, Gras H, Lepers JP, Raharimalala L, Aikawa M, Meis J, Slierendregt B, Tartar A, Thomas A, Druilhe P. A novel Plasmodium falciparum sporozoite and liver stage antigen (SALSA) defines major B, T helper, and CTL epitopes. *J Immunol.* **1996.** 156(8):2874-84.

Bossus M, **BenMohamed L.**, Londono A, Barbier B, Tartar A, Druilhe P, Gras-Masse H. Improved detection of human antibodies to a Plasmodium antigen using a peptide modified with Aib residues. *J Pept Sci.* ***1997;*** 3(1):47-53.

BenMohamed, L., Hélène Gras-Masse, André Tartar, Pierre Daubersies, Karima Brahimi, Marc Bossus, Alan Thomas and Pierre Druilhe. Lipopeptide immunization induces potent and long lasting B, Th and CTL responses against malaria Liver stage antigen in mice and chimpanzee without adjuvant. *European. Journal. Immunology.* **1997.** *27-1242-1253.*

BenMohamed, L., Thomas A, Bossus M, Brahimi K, Wubben J, Gras-Masse H, and Druilhe P. High immunogenicity in chimpanzees of peptides and lipopeptides derived from four new Plasmodium falciparum pre-erythrocytic molecules. *Vaccine.* **2000.** 18(25): 2843-2855.

BenMohamed, L., Krishnan, R., Auge, C., Low, L., Primus, J., and D.J. Diamond. CTL Response to Minimal Epitope Vaccination in HLA A*0201/DR1 Transgenic Mice: Dependence on TH Epitope Interaction with HLA Class II. *Human. Immunology.* **2000.** 61(8) 764-779.

Daubersies, P., Thomas, A.W., Millet, P., Brahimi, K., Langermans, J.A.M., Ollomo, B., **BenMohamed, L.,** Slierendregt, B., Eling, W., Van Belkum, A., Dubreuil, G., Meis, J.F.G.M., Guérin-Marchand, C., Cayphas, S. Cohen, J., Gras-Masse, H. and Druilhe, P. Protection against Plasmodium falciparum malaria in chimpanzees by immunization with the conserved pre-erythrocytic liver-stage antigen 3. *Nature Medicine.* **2000.** 6(11).1258-1263.

Brahimi, K., Badell E, Sauzet JP, **BenMohamed, L.,** Daubersies P, Guerin-Marchand C, Snounou G, and Druilhe P. Human Antibodies against Plasmodium falciparum Liver-Stage Antigen 3 Cross-React with Plasmodium yoelii Pre-erythrocytic-Stage Epitopes and Inhibit Sporozoite Invasion In Vitro and In Vivo. *Infection & Immunity.* **2001.** 69(6): 3845-52.

BenMohamed, L., Krishnan, R., Auge, C., Primus, J., and D.J. Diamond. Induction of Systemic CTL, T helper and DTH Immune Responses Following Intranasal Administration with Lipopeptides, Without Adjuvant. *Immunology,* **2002.** 106: 113-121.

BenMohamed, L., Yasmine Belkaid, Estelle Loing, Karima, Brahimi, Hélène, Gras-Masse and Pierre Druilhe. Systemic immune responses induced by mucosal administration of lipid-tailed peptides without adjuvant. *European. Journal. Immunology.* **2002.** 32-2274-2281.

BenMohamed, L., teven L. Wechsler and Anthony A Nesburn. Lipopeptide Vaccines-Yesterday, Today and Tomorrow. *Lancet Infectious Diseases.* **2002.** 2: 425-431.

Perng, G-C, Maguen, B., Lin, L., Mott, K. R. Kuryli, J., **BenMohamed, L.,** Yukht, A., Osorio, A.B. Nesburn, Henderson, G., Inman, M., Jones C., and S. L. Wechsler. A novel Herpes Simplex Virus Type 1 transcript (AL-RNA) Antisense to the 5' End of the Latency associated Transcripts produces a protein in infected Rabbits. *J. Virology.* **2002.** 76(16):1-8.

BenMohamed, L., Cory D. McNamara; Bertrand Georges; Helene Gras-Masse; Steven L. Wechsler; And Anthony B. Nesburn. Identification of Novel Potent CD4+ T Helper Immunogenic Peptides From The Herpes Simplex Virus Glycoprotein D That Confer Protective *J. Virology*. **2003.** 77 (12):7254-7262.

BenMohamed, L., Thomas A, Druilhe P. Long-term multiepitopic cytotoxic-T-lymphocyte responses induced in chimpanzees by combinations of Plasmodium falciparum liver-stage peptides and lipopeptides. *Infect Immun.* **2004.** 72(8):4376-84.

Xiaoming, Z., Ramos, TV, Gras-Masse, H., Kaplan, BE & **BenMohamed, L.** Lipopeptide Epitopes Extended by Ne-Palmitoyl Lysine Moiety Increases Uptake and Maturation of Dendritic Cell Through a Toll-Like Receptor 2 Pathway and Triggers a Th1- Dependent Protective Immunity. *Eur. Journal. Immunology*. **2004**. 34(11):3102-14.

Nesburn, AB, Ramos, TV, Zhu, X, Asgarzadeh, H, Nguyen, V & **BenMohamed, L.** Local and Systemic B-cell and Th1 Responses Induced Following Ocular Mucosal Delivery of Multiple Epitopes of Herpes Simplex Virus Type 1 Glycoprotein D Together with Cytosine-Phosphate-Guanine Adjuvant. *Vaccine*. **2005.** 4;23(7):873-83.

Peng, W, Henderson G, Inman M, **BenMohamed, L.** Perng GC, Wechsler SL, Jones C. The locus encompassing the latency-associated transcript of herpes simplex virus type 1 interferes with and delays interferon expression in productively infected neuroblastoma cells and trigeminal Ganglia of acutely infected mice. *J Virol.* **2005.** 79(10):6162-71

Zhang, X, Issagholian, A, Berg, EA, Fishman, JB, Nesburn, AB & **BenMohamed L.** Th-CTL Chimeric Epitopes Extended by Ne-Palmitoyl-Lysines Induce Herpes Simplex Virus Type 1-Specific Effector CD8+ Tc1 Responses and Protect Against Ocular Infection. *J Virol.* **2005.** 79(24):15289-15301.

Bettahi, I., Zhang, X, Afifi, RE & **BenMohamed, L.** Protective Immunity to Genital Herpes Simplex Virus Type 1 and Type 2 Provided by Self-Adjuvanting Lipopeptides That Drive Dendritic Cell Maturation and Elicit a Polarized Th1 Immune Response. *Viral Immunology*. **2006**. 19(2): 220-236.

Nesburn, AB, Bettahi, I, Zhang, X, Zhu, X, Chamberlain, W, Afifi, RE, Wechsler, SL & **BenMohamed, L.** Topical/Mucosal Delivery of Sub-Unit Vaccines That Stimulate the Ocular Mucosal Immune System. *The Ocular Surface*. **2006.** 4(4): 9-18

Nesburn AB, Bettahi I, Dasgupta G, Chentoufi AA, Zhang X, You S, Morishige N, Wahlert AJ, Brown DJ, Jester JV, Wechsler SL & **BenMohamed, L.** Functional Foxp3+ CD4+CD25(Bright+) "Natural" Regulatory T Cells are Abundant in Rabbit Conjunctiva and Suppress Virus-Specific CD4+ and CD8+ Effector T Cells During Ocular Herpes Infection. *J Virol.* **2007**. 81(14):7647-61.

Bettahi I; Nesburn AB., Yoon S; Mohebbi A; Sue V; Vanderberg V; Wechsler SL & **BenMohamed, L.** Protective Immunity Against Ocular Herpes Infection and Disease Induced by Highly Immunogenic Self-Adjuvanting Glycoprotein D Lipopeptide Vaccines. *Invest Ophthalmol Vis Sci.* **2007.** 48(10):4643-53

Carpenter D, Hsiang C, Brown DJ, Jin L, Osorio N, **BenMohamed, L.** Jones C, Wechsler SL. Stable cell lines expressing high levels of the herpes simplex virus type 1 LAT are refractory to caspase 3 activation and DNA laddering following cold shock induced apoptosis. *Virology*. **2007.** 369(1):12-8.

Carpenter D, Henderson G, Hsiang C, Osorio N, **BenMohamed L.** Jones C, Wechsler SL. Introducing point mutations into the ATGs of the putative open reading frames of the HSV-1 gene encoding the latency associated transcript (LAT) reduces its anti-apoptosis activity. *Microb Pathog*. **2008.** 44(2):98-102.

Renaudet O, **BenMohamed L.** Dasgupta G, Bettahi I, Dumy P. Towards a Self-Adjuvanting Multivalent B and T cell Epitope Containing Synthetic Glycolipopeptide Cancer Vaccine. *ChemMedChem*. **2008.** Jan 18

Chentoufi AA, Zhang X, Lamberth K, Dasgupta G, Bettahi I, Nguyen A, Wu M, Zhu X, Mohebbi A, Buus S, Wechsler SL, Nesburn AB, **BenMohamed L.** HLA-A*0201-restricted CD8+ cytotoxic T lymphocyte epitopes identified from herpes simplex virus glycoprotein D. *J Immunol.* **2008.** 1;180(1):426-37.

C. Research Support.
Ongoing Research Support

Title: "Ocular mucosal immunity induced by HSV-1 lipopeptides" (R01 EY 14900)
Role on Project: BenMohamed (PI)
Agency: NIH/NEI **Period:** 09/01/03 - 08/31/08
Major Goals: This grant is to discover the epitopes of HSV-1 and to develop novel immunogenic approaches to HSV vaccines. In particular, lipopeptide-based vaccines, which recently gained considerable interest, represent a promising novel approach.

Title: "Ocular Mucsol Immunity" (1RO1 EY15225)
Role On Project: Co-Investigator Nesburn (PI).
Agency: NIH/NEI **Period:** 08/01/04 -06/30/08

Major Goals: The overall goal of this proposal is to develop a better understanding of the ocular mucsol immune system (OMIS). This will be done in an experimental rabbit model whose ocular anatomy; immuno-histology and immune response to HSV infection mimics that of man.

Title:"Vision Research Infrastructure Development Grant" (R24 EY16663)
Role on Project: Director of the Tissue Culture Core Facility Nesburn (PI)
Agency: NIH/NEI **Period:** 06/01/05 - 05/30/10
Major Goals: Support vision research within the Department of Ophthalmology at the University of California Irvine through establishing cell culture and microscopic imaging core facilities.

Title: "Immunology Research Training Grant" (T32)
Role on Project: Co Investigator
Agency: NIH **Period:** 07/01/05 – 04/30/10
Major Goals: This grant is a postgraduate and graduate training in immunology
Role: Co-Investigator

Title: Role of TGF-b in Corneal Stromal Wound Healing (1 R01 EYO7348)
Role on Project: Co-Investigator Jester (PI)
Agency: NIH **Period:** 05/01/06 - – 04/30/10
Major Goals: A specific aim of this project is to evaluate the signal transduction cascade involved in TGFb induced myofibroblast differentiation of corneal keratocytes.