

# Curriculum Vitae

## AMARA Ali

Né le 4 août 1965 à Alès (Gard)

2 enfants, Nationalité Française

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## Statut Actuel

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DR1 INSERM, Chef d'équipe « Biologie des Virus Émergents », INSERM U944, CNRS UMR 7212, Université de Paris Cité, Unité « Génomes & biologie cellulaire des maladies », Institut de Recherche Saint-Louis, Paris

## Titres et Diplômes

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- 2009 : Habilitation à Diriger les Recherches, Université de Paris V.
- 1991-1995 : Thèse de Doctorat ès Sciences en Immunologie (Université de Bordeaux II, France)
- 1990-91 : DEA de Neurosciences et neuropharmacologie (Université de Bordeaux II, France)
- 1988-90 : Licence et Maitrise en Biochimie et Immunologie (Campus Luminy, Université d'Aix-Marseille)
- 1986-88 : DEUG de Biochimie (Université d'Avignon, France)
- 1985 : Baccalauréat D (Lycée Alphonse Daudet , Nîmes, France)

## Parcours scientifique

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- 2020 : Promotion au titre de Directeur de Recherche Classe 1 INSERM
- 2013 : Recrutement au titre de Directeur de Recherche Classe 2 INSERM
- 2010 : Chef d'équipe dans l'Unité « Pathologie et Virologie Moléculaire » INSERM U944-UMR 7212
- 2003–2010 : Chargé de recherche INSERM classe 1 et « *Group leader* » dans l'Unité de *Pathogénie Virale* (Institut Pasteur, Paris France)
- 2002-2003. "Visiting scientist" dans le laboratoire du Pr Dan Littman au Skirball Institute, New York, USA
- 2000-2002 : Chargé de recherche à l'INSERM dans l'Unité d'Immunologie Virale (Institut Pasteur, Paris France).
- 1996-2000 : Stage Postdoctoral, Unité d'immunologie Virale (Institut Pasteur, France).

## Prix et distinctions

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- 2000 : EMBO short-term period post-doc award
- 2002 : Bernard Levine award (Dan Littman's Laboratory)
- Depuis 2012 : INSERM Prime d'Encadrement Doctoral et de Recherche
- 2020 : Académies des Sciences : « Les Grandes Avancées Françaises en Biologie »

## Appartenance à des sociétés savantes, médicales ou scientifiques

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- 2022 : Membre du COPIL du projet IHU « Maladies Infectieuses Émergentes »
- 2022 : Membre du Conseil scientifique DIM One Health 2.0
- 2021 : Membre du COPIL Partenariat Institut Pasteur/ Université de Paris Cité
- Depuis 2020 : Membre du Comité Scientifique de la Fondation pour la Recherche Médicale (FRM)
- Depuis 2019 : Membre du Comité Scientifique ARBOFRANCE
- Depuis 2017: Membre du LABEX IBEID (Laboratory of Excellence Integrative Biology of Emerging Infectious Diseases)
- Depuis 2017 : Membre élu puis nommé du Comité Scientifique INSERM CSS5 (Infection et immunité)
- Depuis 2012 : Membre du Comité Scientifique de l'École Doctorale N°561 HOB (Hématologie, Oncologie, Biothérapie), Institut de Recherche Saint-Louis, Hôpital Saint-Louis
- 2006-2011 : Membre du Comité Scientifique SIDACTION

## Activités d'expertise

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- Reviewer pour des agences de financements de la recherche nationales et internationales (FRM, ANR, AXA, MRC, Welcome trust, Novo Nordisk Foundation).
- Reviewer régulier pour des journaux scientifiques de prestige : *Nature*, *Nature Microbiology*, *Science*, *New England Journal of Medicine*, *Cell Host Microbe*, *Cell reports*, *Plos Pathogens*.
- Éditeur invité Plos Pathogens, Viruses, PLOs One
- Consultant scientifique pour la société ARAVINE (USA, 2018) et la start-up AENITIS depuis 2020

## Invitations récentes

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- Nombreuses invitations dans des congrès nationaux et internationaux de renom (*Keystone*, *Bill Gates Foundation*, *EMBO*, *European Society for Virology*, *EMBL Heidelberg...*) et dans des revues scientifiques prestigieuses (*Cell Host Microbe*, *Nature Reviews Microbiology*, *Annual Reviews in Virology...*).

## Enseignement

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- Depuis 2003 : MASTER 2 Virologie fondamentale UNIVERSITE DE PARIS –SORBONNE UNIVERSITE, Institut Pasteur (2h/ an)

- Depuis 2019 : Virologie fondamentale MASTER 2 UE Virologie Moléculaire et Cellulaire Paris Saclay, Gif Sur Yvette (2h/ and depuis 3 ans)
- Depuis 2015 : Virologie fondamentale MASTER 2 à l'ENS de Lyon (2h par an)
- 2012 : Organisation d'un module de Virologie d'une journée pour étudiants en M2, thèse de sciences et médecins sur « Virus et Cancers » à Institute de Recherche Saint-Louis, Hôpital Saint-Louis
- 2006-2010 : École Supérieure des Techniques de Biologie Appliquées (ESTBA) : dissémination des virus par les cellules dendritiques
- 2008 : 2h d'enseignement sur le mécanisme d'entrée des virus à la Pitié Salpêtrière pour étudiants en médecine (organisé par Brigitte Autran)
- 2006 : 3h d'enseignement au HKU-Pasteur Research Institute Centre, Hong-Kong pour étudiants en thèse de sciences
- Organisateur du congrès international meeting "Early steps in virus infection", 2007 à l'Institut Pasteur de Paris

## Financements de la recherche

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- ANR CHIKMac **2023-2027 (Partner : 250k€)**
- H2021 call Europe projet EUDINE **2022-2027 (Partner : 200k€)**
- RHU COVIFERON **2022-2027 (Partner : 400k€)**
- Labellisation FRM Équipe **2020-2024 (PI : 380k€)**
- ANR CHIKHOST **2021-2024 (PI : 650k€)**
- ANR-internationale COALITION **2021-2024 (Partner : 100k€)**
- ONCONOVA USA **2020-2021 (PI : 70k€)**
- AENITIS France **2021-2022 (PI : 180k€)**
- ANR Flash Covid **2020-2021 (PI : 300k€)**
- AFM **2021-2022 (Partner : 10k€)**
- REACTing **2020 (PI : 20k€)**
- ANR ZIKAHOST **2017-2022 (Partner : 80k€)**
- RO1 NIH grant **2012-2017 (Partner : 200k€)**
- H2020 EU ZIKALLIANCE **2016-2019 (Partner : 30k€)**
- ANR TIMTAMDEN **2014-2018 (PI : 500k€)**
- Labex IBEID **2016-2019 (PI : 300k€)**
- Programme Pionnier de la recherche FRM **2009-2012 (PI : 300k€)**

## Brevets en cours

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- DETERMINING WHETHER SUBJECTS ARE PREDISPOSED TO INFECTION BY SAID VIRUS (Numéro de dépôt: 19 305 978.9).
- NEW METHOD FOR TREATING ZIKA VIRUS INFECTION (Dossier BIO17386, Numéro de dépôt : EP16306657.4, 12\_1216).
- NEW METHOD FOR TREATING DENGUE VIRUS INFECTION (Dossier BIO17386, Numéro de dépôt : EP17306624.2).

## Diffusion de la recherche

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- Organisateur du congrès international meeting "Early steps in virus infection", 2007 à l'Institut Pasteur de Paris
- Organisateur d'une exposition sur les virus émergents en collaboration avec l'INSERM-<https://www.youtube.com/watch?v=19Ne-TLIV6A>
- Auteur de nombreux communiqués de presse et interventions télévisées sur les virus

## Liste des Publications

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- Brugier A, Hafirassou M.L, Pourcelot M, Baldaccini M, Kril V, Couture L, Kümmerer B.M, Gallois-Montbrun S, Bonnet-Madin L, Vidalain P.O, Delaugerre C., Pfeffer S , Meertens L, **Amara A**. RACK1 associates with RNA-binding proteins Vigilin and SERBP1 to facilitate dengue virus replication **J.Virol.** 2022, Apr 13;96(7):e0196221.
- Labeau A, Fery-Simonian L, Lefevre-Utile A, Pourcelot M, Bonnet-Madin L, Soumelis V, Lotteau V, Vidalain PO, **Amara A**<sup>#</sup> and Meertens L<sup>#</sup> **Cell reports.** 2022, 2022 Apr 26;39(4):110744. **# corresponding author**
- Kril V, Aïqui-Reboul-Paviet O, Briant L, **Amara A**. New Insights into Chikungunya Virus Infection and Pathogenesis. **Annual Reviews in Virology.** 2021 Sep 29;8(1):327-347. doi: 10.1146/annurev-virology-091919-102021. Epub 2021 Jul 13.
- Asano T, Boisson B, Onodi F, Matuozzo D, Moncada-Velez M, Maglorius Renkilaraj MRL, Zhang P, Meertens L, Bolze A, Materna M, Korniotis S, Gervais A, Talouarn E, Bigio B, Seeleuthner Y, Bilguvar K, Zhang Y, Neehus AL, Ogishi M, Pelham SJ, Le Voyer T, Rosain J, Philippot Q, Soler-Palacín P, Colobran R, Martin-Nalda A, Rivière JG, Tandjaoui-Lambiotte Y, Chaïbi K, Shahrooei M, Darazam IA, Olyaei NA, Mansouri D,

Hatipoğlu N, Palabiyik F, Ozcelik T, Novelli G, Novelli A, Casari G, Aiuti A, Carrera P, Bondesan S, Barzaghi F, Rovere-Querini P, Tresoldi C, Franco JL, Rojas J, Reyes LF, Bustos IG, Arias AA, Morelle G, Christèle K, Troya J, Planas-Serra L, Schlüter A, Gut M, Pujol A, Allende LM, Rodriguez-Gallego C, Flores C, Cabrera-Marante O, Pleguezuelo DE, de Diego RP, Keles S, Aytakin G, Akcan OM, Bryceson YT, Bergman P, Brodin P, Smole D, Smith CIE, Norlin AC, Campbell TM, Covill LE, Hammarström L, Pan-Hammarström Q, Abolhassani H, Mane S, Marr N, Ata M, Al Ali F, Khan T, Spaan AN, Dalgard CL, Bonfanti P, Biondi A, Tubiana S, Burdet C, Nussbaum R, Kahn-Kirby A, Snow AL; COVID Human Genetic Effort; COVID-STORM Clinicians; COVID Clinicians; Imagine COVID Group; French COVID Cohort Study Group; CoV-Contact Cohort; Amsterdam UMC Covid-; Biobank; NIAID-USUHS COVID Study Group, Bustamante J, Puel A, Boisson-Dupuis S, Zhang SY, Béziat V, Lifton RP, Bastard P, Notarangelo LD, Abel L, Su HC, Jouanguy E, **Amara A**, Soumelis V, Cobat A, Zhang Q, Casanova JL. **Science Immunol.**, august 19;6(62):eabl4348. doi: 10.1126/sciimmunol.abl4348.

- Onodi F., Bonnet-Madin L., Meertens L. Karpf L., Poirot J., Zhang SY., Picard C., Puel A., Jouanguy E, Zhang Q., Le Goff J., Molina J.M, Delaugerre C., Casanova J.L, **Amara A #, and Soumelis V. #** (2021) SARS-CoV-2 induces human plasmacytoid pre-dendritic cell diversification via UNC93B and IRAK4 . **J.Exp.Med** Apr 5;218(4):e20201387. doi: 10.1084/jem.20201387. # corresponding author
- Delaugerre C, Nere ML, Eymard-Duvernay S, Armero A, Ciaffi L, Koulla-Shiro S, Sawadogo A, Ngom Gueye NF, Ndour CT, Mpoudi Ngolle M, **Amara A**, Chaix ML, Reynes J; (2021) ANRS 12286/MOBIDIP study group. Deep sequencing analysis of M184V/I mutation at the switch and at the time of virological failure of boosted protease inhibitor plus lamivudine or boosted protease inhibitor maintenance strategy (substudy of the ANRS-MOBIDIP trial). **J Antimicrob Chemother.** Apr 13;76(5):1286-1293. doi: 10.1093/jac/dkab002.PMID: 33624081
- Zhang Q, Bastard P, Liu Z, Le Pen J, Moncada-Velez M, Chen J, Ogishi M, Sabli IKD, Hodeib S, Korol C, Rosain J, Bilguvar K, Ye J, Bolze A, Bigio B, Yang R, Arias AA, Zhou Q, Zhang Y, Onodi F, Korniotis S, Karpf L, Philippot Q, Chbihi M, Bonnet-Madin L, Dorgham K, Smith N, Schneider WM, Razooky BS, Hoffmann H-H, Michailidis E, Moens L, Han JE, Lorenzo L, Bizien L, Meade P, Neehus A-L, Ugurbil AC, Corneau A, Kerner G, Zhang P, Rapaport F, Seeleuthner Y, Manry J, Masson C, Schmitt Y, Schlüter A, Le Voyer T, Khan T, Li J, Fellay J, Roussel L, Shahrooei M, Alosaimi MF, Mansouri D, Al-Saud H, Al-Mulla F, Almourfi F, Al-Muhsen SZ, Alshome F, Al Turki S, Hasanato R, van de Beek D, Biondi A, Bettini LR, D'Angio' M, Bonfanti P, Imberti L, Sottini A, Paghera S, Quiros-Roldan E, Rossi C, Oler AJ, Tompkins MF, Alba C, Vandernoot I, Goffard J-C, Smits G, Migeotte I, Haerynck F, Soler-Palacin P, Martin-Nalda A, Colobran R, Morange P-E, Keles S, Çölkese F, Ozcelik T, Yasar KK, Senoglu S, Karabela ŞN, Rodríguez-Gallego C, Novelli G, Hraiech S, Tandjaoui-Lambiotte Y, Duval X, Laouénan C, COVID-STORM Clinicians, COVID Clinicians, Imagine COVID Group, French COVID Cohort Study Group, CoV-Contact Cohort, Amsterdam UMC Covid-19 Biobank, COVID Human Genetic Effort, NIAID-USUHS/TAGC COVID Immunity Group, Snow AL, Dalgard CL, Milner JD, Vinh DC, Mogensen TH, Marr N, Spaan AN, Boisson B, Boisson-Dupuis S, Bustamante J, Puel A, Ciancanelli MJ, Meyts I, Maniatis T, Soumelis V, **Amara A**, Nussenzweig M, García-

Sastre A, Krammer F, Pujol A, Duffy D, Lifton RP, Zhang S-Y, Gorochov G, Béziat V, Jouanguy E, Sancho-Shimizu V, Rice CM, Abel L, Notarangelo LD, Cobat A, Su HC, Casanova J-L (2020) Inborn errors of type I IFN immunity in patients with life-threatening COVID-19. **Science** 370: . <https://doi.org/10.1126/science.abd4570>

- Labeau A, Simon-Loriere E, Hafirassou M-L, Bonnet-Madin L, Tessier S, Zamborlini A, Dupré T, Seta N, Schwartz O, Chaix M-L, Delaugerre C, **Amara A**<sup>#</sup>, Meertens L<sup>#</sup> (2020) A Genome-Wide CRISPR-Cas9 Screen Identifies the Dolichol-Phosphate Mannose Synthase Complex as a Host Dependency Factor for Dengue Virus Infection. **J Virol** 94: . <https://doi.org/10.1128/JVI.01751-19> <sup>#</sup> **corresponding author**
- Gaube G, Armero A, Salmona M, Néré M-L, Mahjoub N, Lascoux-Combe C, Gabassi A, Gallien S, **Amara A**, Molina JM, Delaugerre C, Chaix M-L (2020) Characterization of HIV-1 diversity in various compartments at the time of primary infection by ultradeep sequencing. **Sci Rep** 10:2409 . <https://doi.org/10.1038/s41598-020-59234-6>
- Delagreverie HM, Bauduin C, De Castro N, Grinsztejn B, Chevrier M, Jouenne F, Mourah S, Kalidi I, Pilotto JH, Brites C, Tregnago Barcellos N, **Amara A**, Wittkop L, Molina J-M, Delaugerre C (2020) Impact of Raltegravir or Efavirenz on Cell-Associated Human Immunodeficiency Virus-1 (HIV-1) Deoxyribonucleic Acid and Systemic Inflammation in HIV-1/Tuberculosis Coinfected Adults Initiating Antiretroviral Therapy. **Open Forum Infect Dis** 7:ofz549 . <https://doi.org/10.1093/ofid/ofz549>
- Monel B, Rajah MM, Hafirassou ML, Sid Ahmed S, Burlaud-Gaillard J, Zhu P-P, Nevers Q, Buchrieser J, Porrot F, Meunier C, Amraoui S, Chazal M, Salles A, Jouvenet N, Roingeard P, Blackstone C, **Amara A**, Schwartz O (2019) Atlastin Endoplasmic Reticulum-Shaping Proteins Facilitate Zika Virus Replication. **J Virol** 93: . <https://doi.org/10.1128/JVI.01047-19>
- Meertens L, Hafirassou ML, Couderc T, Bonnet-Madin L, Kril V, Kümmerer BM, Labeau A, Brugier A, Simon-Loriere E, Burlaud-Gaillard J, Doyen C, Pezzi L, Goupil T, Rafasse S, Vidalain P-O, Bertrand-Legout A, Gueneau L, Juntas-Morales R, Ben Yaou R, Bonne G, de Lamballerie X, Benkirane M, Roingeard P, Delaugerre C, Lecuit M, **Amara A** (2019) FHL1 is a major host factor for chikungunya virus infection. **Nature** 574:259–263 . <https://doi.org/10.1038/s41586-019-1578-4>
- Dejarnac O, Hafirassou ML, Chazal M, Versapuech M, Gaillard J, Perera-Lecoin M, Umana-Diaz C, Bonnet-Madin L, Carnec X, Tinevez J-Y, Delaugerre C, Schwartz O, Roingeard P, Jouvenet N, Berlioz-Torrent C, Meertens L, **Amara A** (2018) TIM-1 Ubiquitination Mediates Dengue Virus Entry. **Cell Rep** 23:1779–1793 . <https://doi.org/10.1016/j.celrep.2018.04.013>
- Gérardin P, Ramos RC, Jungmann P, de Oliveira JRM, **Amara A**, Gressens P (2018) Zika epidemic: a step towards understanding the infectious causes of microcephaly? **Lancet Infect Dis** 18:15–16 . [https://doi.org/10.1016/S1473-3099\(17\)30710-7](https://doi.org/10.1016/S1473-3099(17)30710-7)

- Hafirassou ML, Meertens L, Umaña-Diaz C, Labeau A, Dejarnac O, Bonnet-Madin L, Kümmerer BM, Delaugerre C, Roingeard P, Vidalain P-O, **Amara A** (2017) A Global Interactome Map of the Dengue Virus NS1 Identifies Virus Restriction and Dependency Host Factors. **Cell Rep** 21:3900–3913 . <https://doi.org/10.1016/j.celrep.2017.11.094>
- Monel B, Compton AA, Bruel T, Amraoui S, Burlaud-Gaillard J, Roy N, Guivel-Benhassine F, Porrot F, Génin P, Meertens L, Sinigaglia L, Jouvenet N, Weil R, Casartelli N, Demangel C, Simon-Lorière E, Moris A, Roingeard P, **Amara A**, Schwartz O (2017) Zika virus induces massive cytoplasmic vacuolization and paraptosis-like death in infected cells. **EMBO J** 36:1653–1668 . <https://doi.org/10.15252/emboj.201695597>
- Meertens L, Labeau A, Dejarnac O, Cipriani S, Sinigaglia L, Bonnet-Madin L, Le Charpentier T, Hafirassou ML, Zamborlini A, Cao-Lormeau V-M, Couplier M, Missé D, Jouvenet N, Tabibiazar R, Gressens P, Schwartz O, **Amara A** (2017) Axl Mediates ZIKA Virus Entry in Human Glial Cells and Modulates Innate Immune Responses. **Cell Rep** 18:324–333 . <https://doi.org/10.1016/j.celrep.2016.12.045>
- Mercier-Delarue S, Durier C, Colin de Verdière N, Poveda J-D, Meiffrédy V, Fernandez Garcia MD, Lastère S, Césaire R, Manuggera J-C, Molina J-M, **Amara A**, Simon F (2017) Screening test for neutralizing antibodies against yellow fever virus, based on a flavivirus pseudotype. **PLoS One** 12:e0177882 . <https://doi.org/10.1371/journal.pone.0177882>
- Fernandez-Garcia MD, Meertens L, Chazal M, Hafirassou ML, Dejarnac O, Zamborlini A, Despres P, Sauvonnnet N, Arenzana-Seisdedos F, Jouvenet N, **Amara A** (2016) Vaccine and Wild-Type Strains of Yellow Fever Virus Engage Distinct Entry Mechanisms and Differentially Stimulate Antiviral Immune Responses. **mBio** 7:e01956-01915 . <https://doi.org/10.1128/mBio.01956-15>
- Carnec X, Meertens L, Dejarnac O, Perera-Lecoin M, Hafirassou ML, Kitaura J, Ramdasi R, Schwartz O, **Amara A** (2016) The Phosphatidylserine and Phosphatidylethanolamine Receptor CD300a Binds Dengue Virus and Enhances Infection. **J Virol** 90:92–102 . <https://doi.org/10.1128/JVI.01849-15>
- Hamel R, Dejarnac O, Wichit S, Ekchariyawat P, Neyret A, Luplertlop N, Perera-Lecoin M, Surasombatpattana P, Talignani L, Thomas F, Cao-Lormeau V-M, Choumet V, Briant L, Desprès P, **Amara A**, Yssel H, Missé D (2015) Biology of Zika Virus Infection in Human Skin Cells. **J Virol** 89:8880–8896 . <https://doi.org/10.1128/JVI.00354-15>
- **Amara A**, Mercer J (2015) Viral apoptotic mimicry. **Nat Rev Microbiol** 13:461–469 . <https://doi.org/10.1038/nrmicro3469>
- Dejarnac O, Meertens L, Perera M, **Amara A** (2014) Viral apoptotic mimicry. **Virologie (Montrouge)** 18:325–336 . <https://doi.org/10.1684/vir.2014.0585>
- Varga N, Sutkeviciute I, Ribeiro-Viana R, Berzi A, Ramdasi R, Daggetti A, Vettoretti G, **Amara A**, Clerici M, Rojo J, Fieschi F, Bernardi A (2014) A multivalent inhibitor of the

DC-SIGN dependent uptake of HIV-1 and Dengue virus. **Biomaterials** 35:4175–4184 .  
<https://doi.org/10.1016/j.biomaterials.2014.01.014>

- Perera-Lecoin M, Meertens L, Carnec X, **Amara A** (2013) Flavivirus entry receptors: an update. **Viruses** 6:69–88 . <https://doi.org/10.3390/v6010069>
- Meertens L, Carnec X, Lecoin MP, Ramdasi R, Guivel-Benhassine F, Lew E, Lemke G, Schwartz O, **Amara A** (2012) The TIM and TAM families of phosphatidylserine receptors mediate dengue virus entry. **Cell Host Microbe** 12:544–557 .  
<https://doi.org/10.1016/j.chom.2012.08.009>
- Snijder B, Sacher R, Rämö P, Liberali P, Mench K, Wolfrum N, Burleigh L, Scott CC, Verheije MH, Mercer J, Moese S, Heger T, Theusner K, Jurgeit A, Lamparter D, Balistreri G, Schelhaas M, De Haan CAM, Marjomäki V, Hyypiä T, Rottier PJM, Sodeik B, Marsh M, Gruenberg J, **Amara A**, Greber U, Helenius A, Pelkmans L (2012) Single-cell analysis of population context advances RNAi screening at multiple levels. **Mol Syst Biol** 8:579 .  
<https://doi.org/10.1038/msb.2012.9>
- Fernandez-Garcia M-D, Meertens L, Bonazzi M, Cossart P, Arenzana-Seisdedos F, **Amara A** (2011) Appraising the roles of CBLL1 and the ubiquitin/proteasome system for flavivirus entry and replication. **J Virol** 85:2980–2989 .  
<https://doi.org/10.1128/JVI.02483-10>
- Fernandez-Garcia M-D, Mazzon M, Jacobs M, **Amara A** (2009) Pathogenesis of flavivirus infections: using and abusing the host cell. **Cell Host Microbe** 5:318–328 .  
<https://doi.org/10.1016/j.chom.2009.04.001>
- Coffey LL, Mertens E, Brehin A-C, Fernandez-Garcia MD, **Amara A**, Després P, Sakuntabhai A (2009) Human genetic determinants of dengue virus susceptibility. **Microbes Infect** 11:143–156 . <https://doi.org/10.1016/j.micinf.2008.12.006>
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