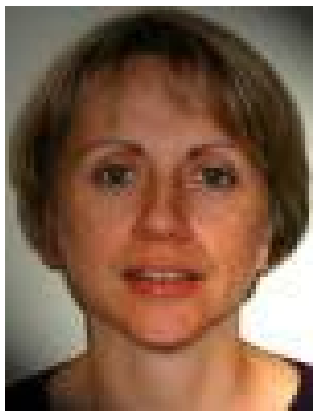

Nathalie AUPHAN-ANEZIN, PhD, HDR

Senior Researcher (Inserm CRHC)

Background

Nathalie Auphan-Anezin received her PhD in Immunology from the University of Marseille, FR, on a project aiming to understand the functional association between the T cell receptor (TCR) and the CD8 co-receptor during T cell activation and central tolerance induction.
She than pursues a post-doctoral training in Michael Karin's laboratory, Department of Pharmacology, University of California San Diego, California, USA, where she studied the molecular basis for immunosuppression by glucocorticoids.
She got an Inserm position as a researcher in Anne-Marie Schmitt-Verhulst's laboratory, CIML, Marseille, FR, where she conducted projects aimed at understanding the molecular bases of the anti-tumor functions of T cells.
She's currently a senior scientist in Toby Lawrence's laboratory, CIML, Marseille, FR, where she supervises PhD students and engineers (IE), and leads projects aimed at dissecting the molecular mechanisms regulating immune surveillance of tumors (melanomas, pancreatic cancer). In particular, she's evaluating how tumor-intrinsic signaling pathways power the accumulation of tumor-associated macrophages; in-depth analyses are conducted to characterize, within the tumor microenvironment, distinct macrophage subsets with diverse origin and functions.
She's the scientific coordinator of the "non-invasive Bio-imaging" platform; a scientific expert for the "flow cytometry" platform and "animal welfare structure" at CIML.

Awards

French Ministry of Science and Technology. Ph.D. fellowship, 1988-1991

French Cancer funding (Ligue contre le Cancer) Ph.D. fellowship, 1992

French Cancer funding (ARC) post-doctoral fellowship, 1993

French National Institute of Health (Inserm) post-doctoral fellowship, 1994

Association pour la Recherche contre le Cancer (ARC), fundings as PI : 2009 –2010 ; 2015–2016.

Membership

Member of the National Committee 1, Association for Research against Cancer (ARC, CN1): since 2019

Main achievements

- Molecular basis for inhibition of NF-κB by glucocorticoids, published in *Science* and commented in a Research News in the same *Science* issue.
- Molecular control of cell fate decisions during the differentiation of naive CD8 T into cytolytic effector cells: based on gene expression profiling, molecular targets whose activation may boost or dampen CD8 T cell effector functions have been identified.
- Manipulation of one of these targets in CD8 T cells, the STAT5 transcription factor, to increase their anti-tumor responses. The proof of principle for enhanced (i) tumor-infiltration, (ii) tumor-specific cytotoxicity, (iii) resistance to tumor-derived immuno-suppression, of CD8 expressing an active STAT5 as compared to unmanipulated CD8 T cells was demonstrated in an autochthonous mouse melanoma model.
- Deciphering the role of Jun transcription factor during monocyte to macrophage differentiation: impact on macrophage homeostasis and on tumor progression.
- Deciphering the role of NF-kB in melanomagenesis and tumor immune surveillance.

- 51 publications (N. Auphan till 1999; N. Auphan-Anezin from 2000)
  3 852 total citations; H index= 22
  ORCID ID: 0000-0002-1967-5206
  Web of Science Researcher ID: E-7790-2018
- Mentoring of 2 Post-Doc, 5 PhD students and 11 Master students.

Selected publications

- Ghislat G, Cheema AS, Baudoin E, Verthuy C, Ballester PJ, Crozat K, Attaf N, Dong C, Milpied P, Malissen B, Auphan-Anezin N, Vu Manh TP, Dalod M and Lawrence T. (2021) NF-κB−dependent IRF1 activation programs cDC1 dendritic cells to drive antitumor immunity. Science Immunology, 2021 Jul 9; 6(61):eabg3570. PMID: 34244313.

- Etzerodt A, Moulin M, Doktor T, Delfini M, Mossadegh Keller N, Bajenoff M, Sieweke M, Moestrup S, Auphan-Anezin N and Lawrence T. (2020) Tissue-resident macrophages in omentum promote metastatic spread of ovarian cancer. J Exp Med. 2020 Apr 6;217(4). pii: e20191869. PMID: 31951251.

- Verdeil G, Lawrence T, Schmitt-Verhulst A-M and Auphan-Anezin N. (2019) Targeting STAT3 and STAT5 in Tumor-Associated Immune Cells to Improve Immunotherapy. Cancers (Basel). 2019 Nov 21;11(12). pii: E1832. PMID: 31766350.

- Etzerodt A, Tsalkitzi K, Maniecki M, Damsky W, Delfini M, Baudoin E, Moulin M, Bosenberg M, Graversen JH, Auphan-Anezin N, Moestrup SK and Lawrence T. (2019) Specific targeting of CD163+ TAM mobilizes inflammatory monocytes and promotes T cell-mediated regression in melanoma. J Exp Med, 2019, 216 (10): 2394. PMID: 31375534.

- Buferne M, Chasson L, Grange M, Mas A, Arnoux F, Bertuzzi M, Naquet P, Leserman L, Schmitt-Verhulst AM and Auphan-Anezin N (2015) IFNγ producing CD8+ T cells modified to resist major immune checkpoints induce regression of MHC class I-deficient melanomas. Oncoimmunology. 2015 Mar 6;4(2):e974959. PMID: 25949872.

- Grange M.*, Verdeil G.*, Arnoux F., Griffon A., Spicuglia S., Maurizio J., Buferne M., Schmitt-Verhulst A-M. and Auphan-Anezin N. (2013) Active STAT5 Regulates T-bet and Eomesodermin Expression in CD8 T

Cells and Imprints a T-bet–Dependent Tc1 Program with Repressed IL-6/TGF-β1 Signaling. J. Immunol.: 191 (7) 3712-3724. PMID:24006458 (*first co-autors)

- Grange M., Buferne M., Verdeil G., Leserman L, Schmitt-Verhulst A-M. and Auphan-Anezin N. (2012) Active STAT5 promotes long-lived cytotoxic CD8 T cells that induce regression of autochthonous mouse melanoma. Cancer Res. 72 (1), 76-87. PMID:22065720.

- Auphan, N., DiDonato, J. A., Rosette, C., Helmberg, A. and Karin, M. (1995). Molecular basis for immunosuppression by glucocorticoids: Inhibition of NF-κB activity through induction of IκB synthesis. Science 270, 286-290. PMID: 7569976.