MARIA TSOUMAKIDOU, M.D. Ph.D

Contact

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PERSONAL DATA

Born: 21 December 1975, Athens, Greece. Citizenship: Hellenic (Greek).

TITLES

Medical Doctorate (MD): University of Crete, Greece, 2000.
Doctorate (PhD): University of Crete, Greece, 2004.
Board-certified respiratory physician: Hellenic Ministry of Health, Athens, Greece, 2007.

EDUCATION

MD: University of Crete, School of Medicine, Greece, grade 82.6%, top 5th percentile (09/1994-07/2000)
PhD: University of Crete, School of Medicine, Greece, grade: excellent. “"Comparison of airway inflammation between severe persistent asthma and COPD” (02/2001-02/2004)
Post-Doctoral Fellowships: National Heart and Lung Institute, Imperial College, London, UK (01/2005-04/2006). University of Crete, School of Medicine, Greece (8/2007-06/2008)
Clinical Fellowships: Venizelion General Hospital, Crete, Greece (04/2002-01/2005). University Hospital of Heraklion, Crete, Greece (04/2006-08/2007)

CURRENT POSITIONS

1. 10/2019-today: Researcher B (with tenure), BSRC "Alexander Fleming", Greece.
2. 09/2018-today: Head of the Clinical tissue and Sampling Facility, University of Athens, Center of new biotechnologies and precision medicine, Greece

PROFILE AND SCIENTIFIC CONTRIBUTIONS

My extensive clinical and research training in respiratory medicine, T cell and dendritic cell biology since 2002 empowers me to study the mechanisms through which lung tumors interact with antigen presenting cells to circumvent recognition and elimination. As a medical trainee in respiratory medicine, I worked on human studies by integrating in vivo immunophenotyping approaches and ex vivo functional immunologic assays using primary human immune cells. My initial research focused on characterizing the cellular and molecular immunological microenvironment of the bronchi and alveoli of patients with chronic obstructive pulmonary disease at baseline conditions and upon

infectious exacerbation. My early studies showed that the identity of T cells shapes the immunological profile and phenotype of patients with obstructive lung disorders. As an early career researcher, I received multiple Awards from the Hellenic Thoracic Society and the European Respiratory Society, including several best research proposal, best publication and best abstract awards.

T cells are primed by professional antigen presenting cells, specifically the dendritic cells. Therefore, I pursued a post-doc at Lung Pathology, Imperial College, London, where I focused on integrating cellular and molecular bronchial biopsy imaging data in order to investigate whether the lung microenvironment of patients with obstructive disorders alters pulmonary dendritic cells. My early contributions to the field of respiratory immunology led me to achieve scientific autonomy in less than 10 years. My follow-up studies as an independent investigator at the University of Athens, from 2008 to 2015, helped me establish a pathogenic link between cigarette smoke-induced disorders and immune suppression via tolerogenic dendritic cells. They shed light on the mechanisms of intrapulmonary lymphoid follicle formation in patients with chronic obstructive pulmonary disease. Important milestones in this period were publications in esteemed respiratory and immunology journals and several Research Grants awarded from the Hellenic Thoracic Society Research.

Over the last 5 years, my research has focused on the identification of mechanisms through which cancer cells harness antigen presenting cells to evade adaptive immunity, using both human specimens and mice as model organisms. My general aim is to conduct state-of-the-art patient-centred translational research, organized in two interconnected levels: phenotypic and functional analysis of the human system to construct hypotheses, in vivo perturbations in the mouse system to discover and comprehend novel mechanisms. In 2016, I established a research group, committed to contribute to the understanding of mechanisms of tumor immunity and develop novel cancer immunotherapeutic methods at BSRC Alexander Fleming, Athens. Important early scientific contributions of my team include the discovery of a chemokine repressive axis between cancer cell-derived WNT1 and conventional dendritic cells in immunologically cold tumors and the imunotherapeutic outcome of WNT1 silencing nanoloposomes combined with dendritic cell-targeted vaccination against cancer antigens. During this period, I have generated and established laboratory tools, infrastructures and methodologies specific for human and mouse research on the immunology of lung cancer, and invested in international collaborations and research grants.

My overall work and contribution to the field of medicine and research was recognized and awarded in 2015 with a Clinical and Research Excellence Award by the Hellenic Thoracic Society. I have published several high-profile papers at Nature Communications, Journal of Immunology, Journal of Allergy and Clinical Immunology, American Journal of Respiratory and Critical Care Medicine. As of Jul 2020, my publications have been cited 1098 times, according to Scopus. My h-index is 20.

SELECTED PUBLICATIONS

Kerdidani, D., Goudevenou, K., Aerakis, E., Verrou, K.M., Stamoulis, P., Tzaferis, C., Prados, A., Vamvakaris, I., Kaniaris, E., Vachlas, K., Sepsas, E., Potaris, K., Koutsopoulos, A., and M. Tsoumakidou (2020). Antigen-presenting fibroblasts sustain anti-tumour CD4+ T cells in situ via MHCIIp-TCR and C1q-C1qbp binding. BioRxiv doi: https://doi.org/10.1101/2020.03.24.005355

Kerdidani, D., P. Chouvardas, A. R. Arjo, I. Giopanou, G. Ntaliarda, Y. A. Guo, M. Tsikitis, G. Kazamias, K. Potaris, G. T. Stathopoulos, S. Zakynthinos, I. Kalomenidis, V. Soumelis, G. Kollias and M. Tsoumakidou (2019). "Wnt1 silences chemokine genes in dendritic cells and induces adaptive immune resistance in lung adenocarcinoma." Nat Commun 10(1): 1405.

Kerdidani, D., S. Magkouta, P. Chouvardas, V. Karavana, K. Glynos, F. Roumelioti, S. Zakynthinos, E. Wauters, W. Janssens, D. Lambrechts, G. Kollias and M. Tsoumakidou (2018). "Cigarette Smoke-Induced Emphysema Exhausts Early Cytotoxic CD8(+) T Cell Responses against Nascent Lung Cancer Cells." J Immunol 201(5): 1558-1569.

Tsoumakidou, M*., S. Tousa, M. Semitekolou, P. Panagiotou, A. Panagiotou, I. Morianos, E. Litsiou, A. I. Trochoutsou, M. Konstantinou, K. Potaris, J. Footitt, P. Mallia, S. Zakynthinos, S. L. Johnston and G. Xanthou* (2014). "Tolerogenic signaling by pulmonary CD1c+ dendritic cells induces regulatory T cells in patients with chronic obstructive pulmonary disease by IL-27/IL-10/inducible costimulator ligand." J Allergy Clin Immunol 134(4): 944-954 e948. *co-senior and co-corresponding

Litsiou, E., M. Semitekolou, I. E. Galani, I. Morianos, A. Tsoutsa, P. Kara, D. Rontogianni, I. Bellenis, M. Konstantinou, K. Potaris, E. Andreakos, P. Sideras, S. Zakynthinos and M. Tsoumakidou (2013). "CXCL13 production in B cells via Toll-like receptor/lymphotoxin receptor signaling is involved in lymphoid neogenesis in chronic obstructive pulmonary disease." Am J Respir Crit Care Med 187(11): 1194-1202.