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NTM-*i*Spot for non-tuberculous mycobacteria diagnosis

NTM are an emerging threat that cause significant morbidity and mortality in immune competent and immune compromised populations.

With over 200 ubiquitous environmental species, NTM are commonly considered as clinically less important than other bacteria from the *Mycobacterium* genus such as *Mycobacterium tuberculosis* complex species and *Mycobacterium leprae* and therefore less frequently reported to public health authorities.

However, their incidence is increasing globally while they still represent one of the most challenging cases faced by respiratory and infectious diseases physicians.

The standard criteria used for diagnosis, is the one proposed in 2007 in the American Thoracic Society guidelines which require clinical, microbiological and radiological evidence of disease before the diagnosis can be confirmed. In addition, the clinical relevance of NTM isolations is not fully understood and remains difficult to determine.

Having an immunodiagnostic test that could help in the clinical evaluation of NTM infections would be of great value in patient care.

Previously…

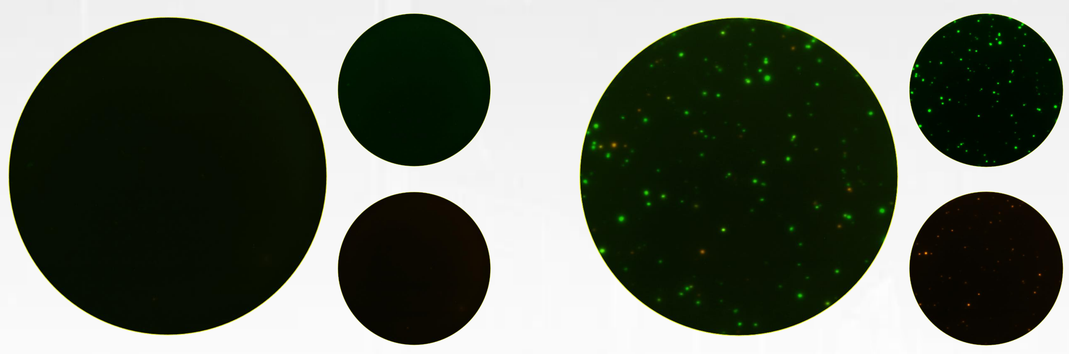
In a previous report, using an enzymatic EliSpot and stimulating with NTM specific antigens, patients with a microbiological confirmation of NTM presented a higher IFN-γ responses compared to the rest of patient cohorts tested.

In addition, patients in which an NTM infection was suspected but not confirmed, had also a high response following the group with an NTM confirmation.

Those cases considered as uninfected (with no record nor risk factors of NTM infection) had a very low or no response to such antigens.

NTM-*i*Spot

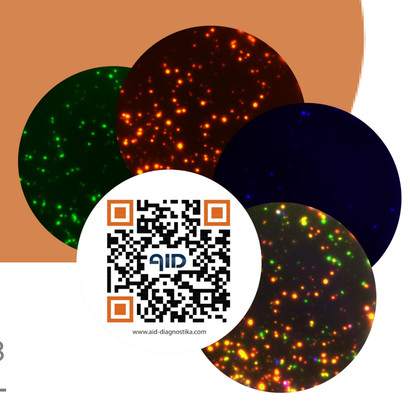
A fluorescence EliSpot Assay able to detect T cell responses on single cell levels and thus characterize the immune response to NTM-specific antigens of the tested individuals.



Representative pictures from a healthy control (on the left) and an NTM positive donor with NTM pulmonary infection (on the right) tested with NTM-*i*Spot. The healthy control shows no reactive T cells against NTM, indicated by the pictures and the spot numbers, while the NTM positive donor shows reactivity with functional T cells expressing both IFN-γ and IL-2. The small sized images show the IFN-γ and the IL-2 response separately (upper and lower images, respectively). The big size image shows the overlay of both cytokines.

NTM-*i*Spot could serve as an NTM infection diagnosis test to complete the patient's clinical evaluation and treatment decision-making.

Let's shine a Spotlight on NTM!



References: Diel et al Eur Respir J 2017 49: 1602109, Donohue et al nn AmThorac Soc. 2016 13:2143–50, Ringshausen et al. BMC Infectious Diseases 2013 13:231, Moore et al. BMC Public Health 2010 10:612, Chalmers et al. Pulmonol. 2018 24(2):120-131, Griffith DE et al. Am J Respir Crit CareMed. 2007 175:367–416, Ratnatunga et al. Front. Immunol. 2020 11:303, Villar-Hernández et al. Eur Respir J 2019 54: OA5139.