

# MICROBIOLOGIE, INFECTIOLOGIE ET IMMUNOLOGIE



## CONFÉRENCE

Conférence prononcée par [Dr. Patrick Moynihan](#)



**Jeudi 10 novembre 2022 à 11h30**

<https://umontreal.zoom.us/j/88957806836?pwd=c1RFN1duSDZ3WDBXWVJrMzFqdDJVUT09>

**Meeting ID:** 889 5780 6836

**Passcode:** 030230

## Dr. Patrick Moynihan

Senior Research Fellow

University of Birmingham

Birmingham, UK

### *Uncovering new mycobacterial enzymes by mining the human gut microbiome*

Connecting genes with biochemical functions remains a significant limitation in biology. In the context of mycobacteria such as *Mycobacterium tuberculosis* this lack of knowledge severely limits our understanding of potential drug and diagnostic targets. One such target is D-arabinan, which is an essential and immunodominant component of the mycobacterial cell wall. For more than 50 years, enzymes that can degrade this structure have been hypothesised, but their identity has remained unknown due to a lack of biochemically characterised homologs. To circumvent this, we developed a screening approach that took advantage of the glycolytic capacity of the human gut microbiome. This screen identified several new classes of glycoside hydrolases, including a new family that is conserved in all mycobacteria. Using these proteins as an example, I will introduce my laboratory's approach to enzyme discovery and describe the structure-function relationship of these new enzymes. I will then discuss how we are leveraging these discoveries to develop new mycobacterial diagnostic tools.

**INVITÉ PAR :**

**Yves Brun**

514 343-7184

yves.brun@umontreal.ca