Prof.dr. Charlotte Louise Scott

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ORCID ID: 0000-0003-4914-6580
Researcher ID: K-3563-2014
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Qualifications: BSc (Hons); MRes (Distinction), PhD

Current Position:	Associate Professor Ghent University	Oct 2019-
	VIB Group Leader	Jan 2020-

Previous Positions and Education:

Ghent University	2017-2019
Assistant Professor	
Ghent University/VIB	
PostDoc	2013-2017
Supervisor: Prof. Martin Guilliams.	
University of Glasgow	
PhD 'Characterisation of Dendritic cells in the intestine'	2010-2014
Supervisor Prof. Allan Mowat, graduated April 2014.	
University of Glasgow	
MRes in Molecular Functions in Disease (Distinction)	2009-2010
University of Limerick	
BSc. in Industrial Biochemistry (Hons; #1 University Class of 2009)	2005-2009

Fellowships and Awards

- EFIS-ACTERIA Early Career Prize in Immunology 2021
- EASL Emerging Leader Award 2021
- EMDS Young Investigator Award 2019
- ERC Starting Grant 2019: MyeFattyLiver
- Sir Henry Wellcome Postdoctoral Fellowship Ghent/Glasgow May 2017-September 2019
- FWO Travel Grant, April 2017 – Keystone Congress, USA
- BSI Travel Grant, September 2016 – International Congress of Immunology, Australia
- Marie Curie Intra-European Fellowship Ghent May 2015-April 2017

My lab is focused on understanding the functional heterogeneity of myeloid cells in the diseased liver. In recent years we have invested in establishing state of the art technologies including CITE-seq and spatial transcriptomics to allow us to identify the specific populations of myeloid cells present in different settings and to address how these different cells respond in different disease contexts across species.

deLIVERing a spatial cell atlas of the healthy and obese liver across species

The liver is the largest solid organ in the body, yet it remains incompletely characterized. Here, we present a spatial proteogenomic atlas of the healthy and obese human and murine liver combining single-cell CITE-seq, single-nuclei sequencing, spatial transcriptomics and spatial proteomics. By integrating these multi-omic datasets, we provide validated strategies to reliably discriminate and localize all hepatic cells, including a population of lipid-associated macrophages (LAMs) at the bile-ducts. We then align this atlas across seven species, revealing the conserved program of *bona fide* Kupffer cells and LAMs. We also uncover the respective spatially-resolved cellular niches of these macrophages and the microenvironmental circuits driving their unique transcriptomic identities. Specifically, we demonstrate that LAMs are induced by local lipid exposure, leading to their induction in steatotic regions of the murine and human liver. The profile, location and increased abundance of LAMs in NAFLD has made these cells a key target for our ongoing functional studies aimed at unravelling the role played by these cells in NAFLD pathogenesis.