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## The sequestration of human dendritic cells by the infective L3 *Necator americanus*

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Despite the profound health implications of *Necator americanus* (*N. americanus*) infection in humans, many aspects of its interaction with the host immune system are poorly understood. In this context, we studied the direct effects of *N. americanus* larvae (L3) on the phenotype and function of human dendritic cells (DCs). For the first time our data show that L3 *N. americanus* larvae exsheathed in the presence of DCs and sequestered the immune cells onto the discarded cuticle sheath. Intriguingly, bystander DCs had negligible interaction with the emerging larvae, alluding to a disparity between the surface chemistry of the larval sheath and its cuticle. Our data also suggest that the interaction between DCs and larvae is mediated via C-type lectin receptors (CLRs) as evidenced by an inhibition in DC sequestration on the larvae cuticle after blocking DC-SIGN (dendritic cell-specific intercellular adhesion molecule-3 grabbing non-integrin) or MR (mannose receptor).

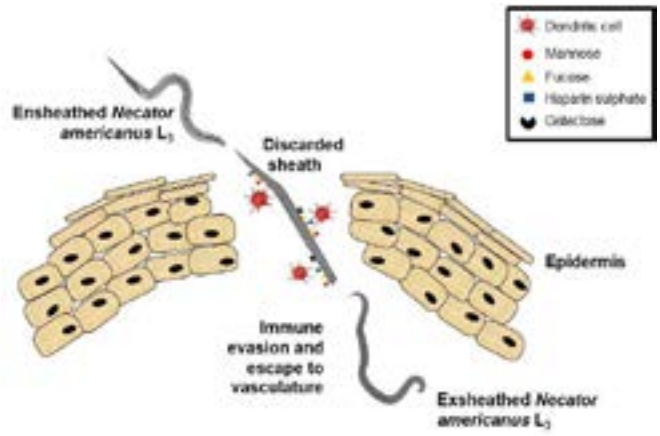


***Figure 1:*** *The proposed mechanism of N. americanus immune evasion strategy. DCs bind the N. americanus sheath via CLRs which trigger larval exsheathing enabling larvae to escape to the vasculature, whilst DCs are sequestered onto the sheath.*

### Biography

A Hassan is in the final stages of completing her Doctorate in Immunology at the University of Nottingham. She is an individual with an extreme passion for humanitarian aid, particularly within the promotion of human welfare to eliminate vaccine preventable infectious diseases, in countries with poor public health provisions. Her current PhD research focus is the epidemiology of Neglected Tropical Diseases (NTD's), particularly *Necator americanus*, with a focus on the rational design of an innovative and more efficient intervention strategy against vaccine preventable NTD's. Outside of research, she has worked extensively with a variety of organizations and is due to be presenting her research at the 4th International Conference of Parasitology (Prague, Czech Republic) and the 11th Annual NTD Conference (Nairobi, Kenya).

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**Notes:**