Anti-malarial mosquitoes: the complement system in *Anopheles gambiae*

Richard Baxter  
*Postdoctoral Fellow in Biochemistry, University of Texas Southwestern*

Malaria, the world’s most devastating parasitic disease, is caused by apicomplexan parasites of the genus *Plasmodium*. The major vector for malaria in Africa is the mosquito *Anopheles gambiae*. Significant progress has been made in the past decade in demonstrating that *A. gambiae* possesses a robust innate immune response to infection by *Plasmodium* parasites that may be a potential source of novel vector control strategies. The complement-like protein thioester-containing protein 1 (TEP1) labels *P. berghei* ookinetes for lytic destruction in the basal lamina of the midgut epithelium. The three dimensional structure of TEP1 is homologous to human complement factor C3. Further studies however, demonstrate that the mechanism of TEP1 activation is distinct from vertebrate complement factors, involving a pair of leucine-rich repeat proteins, LRIM1 and APL1. I shall present recent results of crystallographic and solution x-ray scattering studies regarding LRIM1 and APL1 and implications for their role in TEP1 activation.

Tuesday, March 23, 2010  
12:00-1:00 p.m.

HMS Goldenson Building Room 122  
(located at 220 Longwood Avenue)

For more information please email: jrc@crystal.harvard.edu

Host: Piotr Sliz