

**Proteome-wide Functional Profiling of Serine Hydrolases in the Human
Malaria Parasite**

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partial fulfillment of the requirements for the degree of

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In

Biochemistry

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Chapter 2 “Internalization of erythrocyte acylpeptide hydrolase is required for asexual replication of *Plasmodium falciparum*” is published in an American Society of Microbiology published open source journal, mSphere, DOI: 10.1128/mSphere.00077-19. It is also available on BioRxiv preprint server hosted by Cold Spring Harbor Laboratory at the following address, <https://doi.org/10.1101/533570>.

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First and last name of inquirer	Rubayet Elahi
Email address	rubayet@vt.edu
Title (ie: Doctor, Professor, Assistant Professor, Lecturer, Director)	Graduate student
Affiliation (institution, organization, etc.)	Virginia Tech
Citation of the material to be used (e.g., [Frontiers in Bioscience 12, 1-12, January 1, 2007])	Frontiers in Bioscience S4, 1424-1448, June 1, 2012
Material(s) to be used (e.g., figure 1, table 1)	Figure 1. Electron microscopy image of a <i>P. falciparum</i> -infected erythrocyte (HB3) at the early schizont stage containing a DV with ordered hemozoin crystals. Dense hemoglobin is observed in the host erythrocyte. The samples were fixed with 2.5% glutaraldehyde, ultrathin sections of 60 nm thickness were prepared and electron micrographs were taken using a Zeiss EM10 transmission electron microscope as described (261, 262). Nu: nucleus, DV: digestive vacuole, PM: parasite plasma membrane, PVM: parasitophorous vacuole membrane. Image courtesy of Hannes Wickert.
Nature of the product where the material is being used (e.g., Journal Article, Conference, Book Chapter)	PhD dissertaion: Proteomewide functional profiling of serine hydrolases in the human malaria parasite

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Fig. 1 Catalytic mechanism of SHs. A base-activated serine nucleophile attacks the substrate carbonyl group to form a covalent intermediate and release the first reaction product. A water molecule then cleaves the resulting acyl-enzyme intermediate to release the second reaction product and regenerate the active enzyme.

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Activity-based protein profiling: an efficient approach to study serine hydrolases and their

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Editor of portion(s)	N/A
Author of portion(s)	Biao Chen, Sha-Sha Ge, Yuan-Chao Zhao, Chong Chen and Song Yang
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