

ISHAM Working Group “*Cryptococcus neoformans*: Pathobiology of brain invasion”

Convener and contact: K.J. Kwon-Chung, june_kwon-chung@nih.gov

A. General Objectives of the Working Group

Cryptococcus neoformans causes lesions in a wide variety of organs but the most common manifestation of cryptococcosis is the central nervous system infection. Cryptococcal meningoencephalitis is 100 % fatal unless treated and even with treatment, close to 25% succumb to fatal infection. The mechanism by which *C. neoformans* invades the brain and establishes to cause fatal infection, therefore, has been the central issue of the pathogenesis of this species. However, there has been little research pertaining to this subject. The working group will promote the interest on this subject which can also benefit investigators working with other neurotropic fungal species such as *Cladophialophora bantiana*. The working group can organize a symposium at upcoming IUMS meetings in 2008.

B. Specific questions to be addressed

1. The mechanism by which *C. neoformans* crosses the blood-brain barrier.
2. Response of the host brain capillary endothelial cells during the interaction with *C. neoformans* cells.
3. Which genes and factors are required in order for *C. neoformans* to be disseminated to the brain?
4. Once *C. neoformans* yeast cells enter the brain, what are the genes required for its adaptation to the brain environment?

C. A time –line of achievable and tangible objectives and outputs.

We can write reports and publish review article in two years.

D. The name of Convener

K. J. Kwon-Chung: Molecular Microbiology Section, Laboratory of Clinical Infectious Diseases, NIAID, NIH, Bethesda MD 20892

Tel: 1-301-496-1602; FAX: 1-301-480-3240

E-mail address: june_kwon-Chung@nih.gov

E. The names and contact information of the Working Group’s members

Yun C. Chang: Molecular Microbiology Section, Laboratory of Clinical Infectious Diseases,
NIAID, NIH, Bethesda MD 20892
Tel: 1-301-496-8839; FAX: 1-301-480-3240
E-mail: YCHANG@niaid.nih.gov

Maurizio Del Poeta: Department of Biochemistry & Molecular Biology, Medical University of
South Carolina, Charleston, SC 29425
Tel: 1-843-792-8381; FAX 1-843-792-8565
E-mail: delpoeta@musc.edu

Francoise Dromer: Mycology Unit, Institut Pasteur, 25 rue du Docteur Roux
75724 Paris, France
Tel : +33 1-40-61-33-89 ; FAX : +33 1-40-61-33-89
E-mail : dromer@pasteur.fr

Peter Espenshade: Department of Cell Biology, Johns Hopkins School of Medicine,
Baltimore, MD 21287
Tel: 1-443-287-5026
E-mail: peter.espenshade@jhmi.edu

K. S. Kim: Department of Pediatrics, Division of Infectious Diseases,
Johns Hopkins School of Medicine, 600 North Wolfe st. Park 256, Baltimore, MD, 21287
Tel: 1-410- 614-3917
E-mail: kwangkim@jhmi.edu

Olivier Lortholary: Mycology Unit, Institut Pasteur, 25 rue du Docteur Roux
75724 Paris, France
Tel : +33 1-40-61-33-89 ; FAX : +33 1-40-61-33-89
E-mail : olortho@pasteur.fr

Francoise Dromer, MD, Ph.D:
Head, Molecular Mycology Unit
Director, National Reference Center for Mycoses & Antifungals Institut Pasteur - 25, rue du Dr.
Roux 75724 Paris cedex 15, France
Phone : + 33 1 40 61 33 89
FAX : + 33 1 45 68 84 20
E-mail : francoise.dromer@pasteur.fr