

# Curriculum Vitae

## Personal data:

Name: Jan Rybniker  
Degrees: Dr. med., Dr. nat. med. (MD-PhD)  
Address: École Polytechnique Fédérale de Lausanne (EPFL)  
Unité Prof. Stewart Cole  
Faculté des Sciences de la Vie  
Station 19, SV 3533  
1015 Lausanne  
Phone: + 4121.693.18.33  
Email: Jan.rybniker@epfl.ch  
Date of birth: May 23rd 1975  
Place of birth: Karsruhe / Germany  
Nationality: German  
Marital status and family: Married, two children

## Professional career research:

April 2011 until today Postdoctoral fellow at the laboratory of Prof. Stewart Cole, Dept. of Life Sciences - EPFL, Switzerland  
2007 - 2010 MD-PhD candidate, center for molecular medicine, University of Cologne, Germany  
May 2002 until June 2003 Visiting scientist at the University of Tennessee, Dept. of Microbiology, USA (Prof. Pamela Small)

## Professional career clinical practice:

2006 - 2011 Resident at the 1<sup>st</sup> Dept. of Internal Medicine, University of Cologne, Germany.  
- 1 year intensive care unit  
- 3 years oncology/infectious diseases wards  
- 1.5 years infectious diseases outpatient dept.  
- 3 months abdominal ultrasound  
August 2004 through January 2006 Resident at the Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany  
- 1 year diagnostic microbiology including a 3 month course in tropical medicine  
- 6 months tropical medicine ward

**MD-PhD thesis**  
2007 - 2011 "Identification and Characterization of Host Shut-Off Proteins of Mycobacteriophages"  
*summa cum laude (with distinction)*  
At the Center for Molecular Medicine Cologne, Germany

**MD thesis:**  
2000 until 2004 "Transposon mutagenesis of *Mycobacterium ulcerans* and *Mycobacterium marinum* using temperature-sensitive mycobacteriophages "  
*summa cum laude*

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|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | <ul style="list-style-type: none"> <li>- At the Institute for medical Microbiology, Immunology and Hygiene (Univ. of Cologne)</li> <li>- At the Prince Leopold Institute of Tropical Medicine, Antwerp, Institute scientifique de la Santé, Brussels</li> </ul>                                                                                                                                                                    |
| <b>Funding, Fellowships:</b>                    | <ul style="list-style-type: none"> <li>- MD-Researcher position, six year period starting in 2007. Funded by the German federal ministry of education and research (BMBF). Total volume 770,000 €.</li> <li>- Doctorate studentship Maria Pesch foundation (year 2000 through 2002)</li> <li>- Foundation Köln Fortune - fellowship for scientists abroad (year 2002 through 2003)</li> </ul>                                      |
| <b>Awards</b>                                   | <ul style="list-style-type: none"> <li>- first winner “young investigator award”, 116th Congress of The German Society for Internal Medicine (DGIM). Wiesbaden 2010</li> <li>- second winner “young investigator award”, 114th Congress of The German Society for Internal Medicine (DGIM). Wiesbaden 2008</li> <li>- first winner poster award, congress for Infectious Diseases and Tropical Medicine, Innsbruck 2008</li> </ul> |
| <b>Study at University:</b><br>starting 1996    | University of Cologne, School of Medicine <ul style="list-style-type: none"> <li>- final state exam march 2004</li> <li>- final grade 2 (upper second class)</li> </ul>                                                                                                                                                                                                                                                            |
| <b>Practical year:</b><br>May 2003 - April 2004 | <ul style="list-style-type: none"> <li>- Paediatrics at the University of Cologne</li> <li>- Internal medicine at the Univ. of Cologne</li> <li>- Surgery at Hôtel Dieu, Service de Chirurgie générale, Paris / France</li> </ul>                                                                                                                                                                                                  |
| <b>Electives:</b>                               |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| August - September 1998                         | Agogo Hospital, dept. of surgery, Ghana                                                                                                                                                                                                                                                                                                                                                                                            |
| February - April 1999                           | Clinic for child and adolescent psychiatry, Bonn                                                                                                                                                                                                                                                                                                                                                                                   |
| March 2000                                      | Training in molecular biology methods at the Institute of Pathology, University of Cologne                                                                                                                                                                                                                                                                                                                                         |
| July - August 2000                              | Clinic for Neurosurgery, University of Cologne                                                                                                                                                                                                                                                                                                                                                                                     |
| November 2001                                   | Aid in establishing a small microbiological lab in Benin / West-Africa (IMPETUS-project)                                                                                                                                                                                                                                                                                                                                           |
| <b>Language skills:</b>                         | German (native language)<br>English (fluent)<br>Français (good knowledge)                                                                                                                                                                                                                                                                                                                                                          |

## **Publications:**

Jan Rybniker, Jeffrey M. Chen, Claudia Sala, Ruben Hartkoorn, Anthony Vocat<sup>1</sup>, Andrej Benjak, Stefanie Boy-Röttger, Ming Zhang, Rita E. Szekely, Zoltán Greff, László Örfi, István Szabadkai, János Pató, György Kéri, Stewart T. Cole: Innovative anti-cytolysis screen identifies potent inhibitors of mycobacterial virulence protein secretion, *Cell Host and Microbe*. Accepted manuscript. 2014.

Ming Zhang, Jeffrey M. Chen, Claudia Sala, Jan Rybniker , Neeraj Dhar and Stewart T. Cole: EspI regulates the ESX-1 secretion system in response to ATP levels in *Mycobacterium tuberculosis*, *Molecular microbiology* 2014.

Rybniker J, Pojer F, Marienhagen J, Kolly GS, Chen JM, van Gumpel E, Hartmann P, Cole ST: The cysteine desulfurase IscS of *Mycobacterium tuberculosis* is involved in iron-sulfur cluster biogenesis and oxidative stress defence. *The Biochemical journal* 2014, 459(3):467-478.

Lechartier B, Rybniker J, Zumla A, Cole ST: Tuberculosis drug discovery in the post-post-genomic era. *EMBO Mol Med* 2014, 6(2):158-168. *Shared first author*.

Chen JM, Zhang M, Rybniker J, Boy-Rottger S, Dhar N, Pojer F, Cole ST: *Mycobacterium tuberculosis* EspB binds phospholipids and mediates EsxA-independent virulence. *Molecular microbiology* 2013, 89(6):1154-1166.

Chen JM, Zhang M, Rybniker J, Basterra L, Dhar N, Tischler AD, Pojer F, Cole ST: Phenotypic profiling of *Mycobacterium tuberculosis* EspA point mutants reveals that blockage of ESAT-6 and CFP-10 secretion in vitro does not always correlate with attenuation of virulence. *Journal of bacteriology* 2013, 195(24):5421-5430.

Rybniker J, Nowag A, Janicki H, Demant K, Hartmann P, Buning H: Incorporation of antigens into viral capsids augments immunogenicity of adeno-associated virus vector-based vaccines. *J Virol* 2012, 86(24):13800-13804.

Rybniker J, Krumbach K, van Gumpel E, Plum G, Eggeling L, Hartmann P: The cytotoxic early protein 77 of mycobacteriophage L5 interacts with MSMEG\_3532, an L-serine dehydratase of *Mycobacterium smegmatis*. *Journal of basic microbiology* 2011, 51(5):515-522.

Shimabukuro-Vornhagen A, Rybniker J, Zoghi S, Faetkenheuer G, Michels G, Erdmann E, von Bergwelt-Baildon M, Kochanek M: Acquired Long QT Syndrome and Torsade de Pointes Associated with HIV Infection. *Case Rep Med* 2010, 2010.

Rybniker J, Nowag A, van Gumpel E, Nissen N, Robinson N, Plum G, Hartmann P: Insights into the function of the WhiB-like protein of mycobacteriophage TM4--a transcriptional inhibitor of WhiB2. *Molecular microbiology* 2010, 77(3):642-657.

Rybniker J, Goede V, Mertens J, Ortmann M, Kulas W, Kochanek M, Benzing T, Arribas JR, Faetkenheuer G: Treatment of visceral leishmaniasis with intravenous pentamidine and oral fluconazole in an HIV-positive patient with chronic renal failure--a case report and brief review of the literature. *International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases* 2010, 14(6):e522-525.

Kramme S, An le V, Khoa ND, Trin le V, Tannich E, Rybniiker J, Fleischer B, Drosten C, Panning M: Orientia tsutsugamushi bacteremia and cytokine levels in Vietnamese scrub typhus patients. *Journal of clinical microbiology* 2009, 47(3):586-589.

Rybniiker J, Plum G, Robinson N, Small PL, Hartmann P: Identification of three cytotoxic early proteins of mycobacteriophage L5 leading to growth inhibition in Mycobacterium smegmatis. *Microbiology* 2008, 154(Pt 8):2304-2314.

Robinson N, Kolter T, Wolke M, Rybniiker J, Hartmann P, Plum G: Mycobacterial phenolic glycolipid inhibits phagosome maturation and subverts the pro-inflammatory cytokine response. *Traffic* 2008, 9(11):1936-1947.

Rybniiker J, Kramme S, Small PL: Host range of 14 mycobacteriophages in Mycobacterium ulcerans and seven other mycobacteria including Mycobacterium tuberculosis--application for identification and susceptibility testing. *Journal of medical microbiology* 2006, 55(Pt 1):37-42.

Rybniiker J, Wolke M, Haefs C, Plum G: Transposition of Tn5367 in Mycobacterium marinum, using a conditionally recombinant mycobacteriophage. *Journal of bacteriology* 2003, 185(5):1745-1748.

## **Book chapters**

Empfehlungen zur Anwendung von Antibiotika 2011. Kapitel parasitäre Erkrankungen, Tuberkulose. Herausgeber: Arzneimittel-kommission des Klinikums der Universität zu Köln.

Repetitorium Internistische Intensivmedizin. Kapitel Malaria. Herausgeber Michels/Kochanek. Springer, 2. Auflage 2011

## **Patents**

- **EP19793:** Benzothiophene and benzyloxybenzylidene derivatives as pharmaceutically active agents. 2014.
- 2-substituted 1H-benzimidazole derivatives that inhibit growth of *Mycobacterium tuberculosis*. 2014. **(pending)**