



EUROPEAN RESISTANCE INTERVENTION STUDY

Reducing Resistance in Respiratory
Tract Pathogens in Children

★ Contents:

Objectives

Participants

Workplan

Database

Links



The aim of the EURIS project is to introduce and test the efficacy of intervention strategies by which the prevalence of resistant strains of *Streptococcus pneumoniae* colonizing children attending Day Care Centers could be reduced.

Project start date: September 01, 2000

Project end date: October 31, 2003

This document is also available as a web page at:
<http://www.itqb.unl.pt:1111/euris/>



For comments and suggestions about this document
please contact sara@itqb.unl.pt

Last updated: October 8, 2003
Copyright © IBET





Objectives

Participants

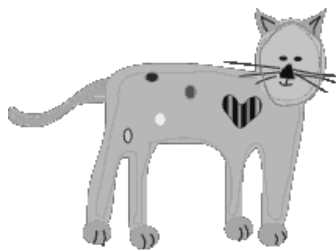
Workplan

Database

Links



The aim of the EURIS project is to introduce and test the efficacy of intervention strategies by which the prevalence of resistant strains of *Streptococcus pneumoniae* colonizing children attending Day Care Centers could be reduced. Since this pediatric flora is the major reservoir of these pathogens it is expected that a successful intervention at the level of the ecological reservoir will also have major impact on the prevalence of pneumococcal infections by resistant strains both in pediatric and adult disease. The particular interventions planned to reduce the carriage rate of drug-resistant strains are:



- . reduced antibiotic consumption
- . optimization of antibiotic dosing (amounts and duration) during therapy
- . improvement of hygienic conditions in Day Care Centers
- . infection control measures involving mandatory notification of all
- . penicillin-resistant pneumococci, contact tracing and isolation of carriers

A unique feature of EURIS is that it plans to integrate the theoretical and molecular skills and interests of the participating units for the characterization of strains recovered and genetic determinants identified in the course of the intervention studies.



Objectives



Participants

Workplan

Database

Links



Four centers each located in a different country carry out the interventions and strain collections. Four additional collaborating units assist as reference centres for the harmonization of methods in clinical microbiology; molecular epidemiology of drug resistance genes and clones; data management and mathematical modelling, including risk assessment, of epidemiological aspects of EURIS.



Participant 1 - involved with both strain collection / intervention and basic science.

Hermínia de Lencastre, PhD

(hml@itqb.unl.pt)

Professor of Molecular Genetics

Head, Molecular Genetics Laboratory

(http://www.itqb.unl.pt/Research/Research_Divisions/Biology/Herminia_Lencastre/)

Instituto de Tecnologia Química e Biológica

(<http://www.itqb.unl.pt/>)

Universidade Nova de Lisboa

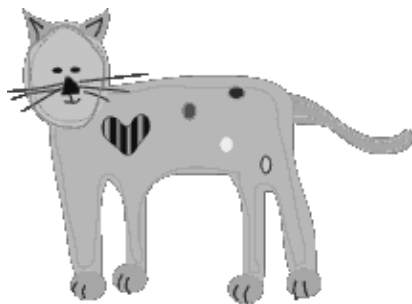
(<http://www.unl.pt/indexi.html>)

Oeiras, Portugal

Participant 1 team members:

Coordination:

- **Hermínia de Lencastre, PhD** hml@itqb.unl.pt
- Ilda Santos Sanches, PhD (support of coordination)
isanches@itqb.unl.pt





Objectives



Participants

Workplan

Database

Links

Microbiology and Molecular Epidemiology:

- . Rosário Mato, PhD (coordination of Microbiology and Molecular Epidemiology) rmato@itqb.unl.pt
- . Sónia Nunes (research student) snunes@itqb.unl.pt
- . Natacha Sousa (research student) ngsousa@itqb.unl.pt
- . Carla Simas (research student) csimas@itqb.unl.pt
- . Nelson Frazão (research student) nfrazao@itqb.unl.pt

PCR serotyping:

- . Mário Ramirez, PhD (coordination of PCR serotyping) ramirma@itqb.unl.pt
- . Daniela Brito (research student) danielab@itqb.unl.pt

Sampling and Intervention:

- . António Brito-Avô, pediatrician (coordination of intervention) abritoavo@netcabo.pt
- . Joana Saldanha, pediatrician (support of intervention) joanasaldanha@mail.telepac.pt
- . Carla Simas (research student) csimas@itqb.unl.pt
- . Anabela Gonçalves, nurse
- . Paula Poção, nurse



Participant 2A - involved with strain collection / intervention.

Thorolfur Gudnason, MD

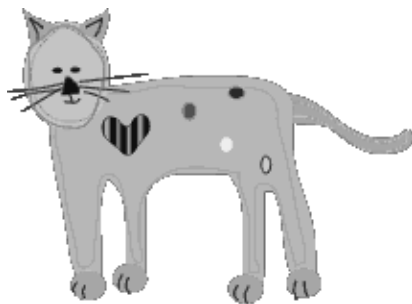
(thorgudn@binet.is)

**Department of Pediatrics
National University Hospital**
(<http://www.landspitali.is>)
Reykjavik, Iceland

Participant 2A team members:

Coordination:

- . Thorolfur Gudnason, MD thorgudn@binet.is
- . Brynja Laxdal, study nurse, field coordinator brynlax@landspitali.is





Objectives



Participants

Workplan

Database

Links



Participant 2B - quality control center involved with harmonization of microbiological techniques and microbiology for Participant 2A.

Karl G. Kristinsson, MD, PhD, FRCPath

(karl@landspitali.is)

**Professor of Clinical Microbiology
Director, Department of Microbiology
National University Hospital
(<http://www.landspitali.is>)
Reykjavik, Iceland**



Participant 3 - involved with strain collection / intervention.

Didier Guillemot, MD, PhD

(guillemo@pasteur.fr)

**Institut Pasteur
(<http://www.pasteur.fr>)
Ancien Hôpital
Paris, France**



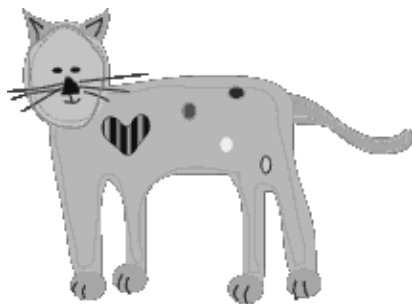
Participant 4 - involved with strain collection / intervention.

Karl Ekdahl, MD, PhD

(Karl.Ekdahl@smi.ki.se)

(http://www.mep.ki.se/staff/profiles/ekdahl_karl_en.html)

**Associate Professor
Swedish Institute for Infectious Diseases Control
(<http://www.smittskyddsinstitutet.se/>)
Department of Epidemiology
Solna, Sweden**





Objectives



Participants

Workplan

Database

Links



Participant 6 - involved with data management and basic science.

Jonas Almeida, PhD

(jalmeida@itqb.unl.pt)

Assistant Professor

Biomathematics Group

(<http://www.itqb.unl.pt:1111/biomat/>)

Instituto de Tecnologia Química e Biológica

(<http://www.itqb.unl.pt/>)

Universidade Nova de Lisboa

(<http://www.unl.pt/indexi.html>)

Oeiras, Portugal

Participant 6 team members:

Coordination:

- . **Jonas Almeida, PhD** jalmeida@itqb.unl.pt

Database management and data analysis:

- . Sara Silva, database manager (PhD student)
sara@itqb.unl.pt
- . Rodrigo Oliveira (PhD student) rodrigo@itqb.unl.pt

Database management:

- . António Marezek, PhD mar@itqb.unl.pt
- . João Carriço (PhD student) jcarrico@itqb.unl.pt



Participant 7 - involved with basic science.

Regine Hakenbeck, PhD

(hakenb@rhrk.uni-kl.de)

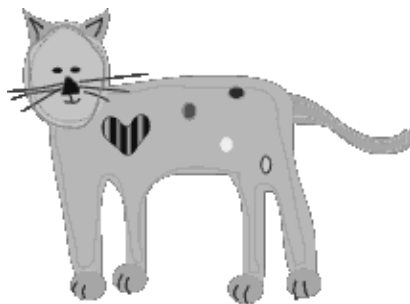
Professor, Department of Microbiology

(<http://www.uni-kl.de/FB-Biologie/AG-Hakenbeck/>)

University of Kaiserslautern

(<http://www.uni-kl.de/en/>)

Kaiserslautern, Germany





Objectives



Participants

Workplan

Database

Links



Participant 8 - involved with hosting molecular typing workshop and with basic science.

Alexander Tomasz, PhD

(tomasz@rockvax.rockefeller.edu)

(<http://www.rockefeller.edu/labheads/tomasz/tomasz.html>)

Professor and Head, Laboratory of Microbial Cell Biology and Infectious Diseases

(<http://www.rockefeller.edu/labheads/tomasz/tomasz-lab.html>)

The Rockefeller University

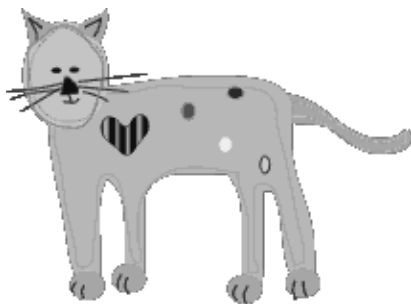
(<http://www.rockefeller.edu/>)

New York, USA

Participant 8 team members:

Coordination:

- . **Alexander Tomasz, PhD**
- . Raquel Sá-Leão, PhD (until April 2002)
- . Inês Crisóstomo (PhD student)
- . Marilyn Chung (research assistant)





Objectives

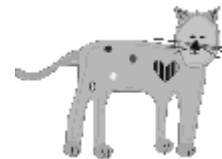
Participants



Workplan

Database

Links



Harmonization of all methodologies to be used by all Participating Centers, before the beginning of the intervention efforts:

- . Microbiological and clinical / demographic methods (Participant 2B)
- . Serotyping (quality control center: Statens Serum Institut Copenhagen) (<http://www.ssi.dk/sw379.asp>)
- . Molecular typing (Participant 8)

Intervention methods:

- . Reduced antibiotic use; change / revision in dosing; improved hygienic conditions in Day Care Centers (Participant 1 and Participant 2A)
- . Randomized comparative intervention study: high-dose and short-duration therapy; general reduction of antimicrobial use (Participant 3)
- . Variants of three infection control strategies, the first and most stringent of which includes: mandatory notification; contact tracing; follow-up until child is carrier negative; nasopharyngeal cultures of all children and staff; exclusion of PRP-carrying children from Day Care Center attendance (Participant 4)

Data management and basic science:

- . Common EURIS database and its statistical analysis; mathematical modeling of the epidemiology of drug-resistant pneumococci (Participant 6)
- . Study of horizontal transfer of penicillin resistance determinants among strains collected at the Intervention Centers (Participant 7)
- . Providing of molecular typing techniques and DNA probes for the identification of resistance and virulence related genes (Participant 8 and Participant 1)
- . Development of a PCR-based serotyping technique (Participant 1)



Objectives

Participants

Workplan



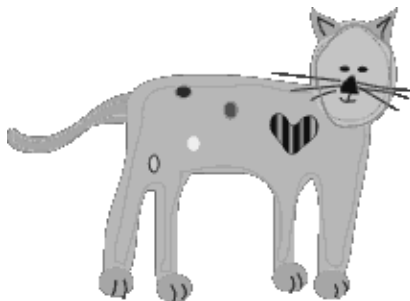
Database

Links



Participant 6 has developed a web-based infrastructure, namely a relational online database coupled with a query system for data retrieval, to store the data gathered within EURIS. Registered users can enter by means of a login name and password. A scientific paper and a demo version of the database and query system are available from the Links section.

The relational online database achieves complete integration of data from different sources and types, behaving both like a series of local databases, one for each participant country, and a single central European database. It has been in operation since February 2001 and is presently being used by 4 participants (1, 2A, 2B, 4). The query system has been available since April 2002.



The database team members are:

- . Sara Silva
(sara@itqb.unl.pt)
(<http://www.itqb.unl.pt:1111/~sara/>)
- . Rodrigo Oliveira
(rodrigo@itqb.unl.pt)
(<http://www.itqb.unl.pt:1111/~rodrigo/>)
- . António Marezek
(mar@itqb.unl.pt)
(<http://www.itqb.unl.pt/~mar/>)
- . João Carriço
(jcarrico@itqb.unl.pt)
(<http://www.itqb.unl.pt:1111/~jcarrico/>)
- . Jonas Almeida
(jalmeida@itqb.unl.pt)



Objectives

Participants

Workplan

Database



Links



- . The EURIS poster (PDF)
(<http://www.itqb.unl.pt:1111/euris/final-poster.pdf>)
- . EURIS database paper: "EURISWEB - Web-based epidemiological surveillance of antibiotic-resistant pneumococci in Day Care Centers"
(<http://www.biomedcentral.com/1472-6947/3/9>)
- . Demo version of the EURIS database (login *euris*, password *welcome*)
(<https://www.itqb.unl.pt:1122/>)
- . Icelandic EURIS web page (in Icelandic)
(<http://www.euris.is/>)
- . Leaflet on "Correct Antibiotic Usage" (PDF or DOC) (in Portuguese)
(<http://www.itqb.unl.pt:1111/euris/folheto.pdf>)
(<http://www.itqb.unl.pt:1111/euris/folheto.doc>)
- . Good-Practice Manual (PDF) (in Portuguese)
(<http://www.itqb.unl.pt:1111/euris/fichas.pdf>)
- . EURIS info at CORDIS
(<http://www.cordis.lu/>)