

About Us:

Mapmygenome™ is a molecular diagnostics company for people who are proactive about their health. Our products provide insights into the genetic basis about ourselves that include traits, drug responses, inherited conditions and diseases. By combining genetic report and health history with genetic counseling Mapmygenome™ provides actionable steps for individuals and their physicians towards a healthier life.

Spoligotyping - “Data Sheet”

Spoligotyping - a PCR based method to simultaneously detect and type *Mycobacterium tuberculosis* complex in a large batch of clinical samples, including suspected nosocomial infections, would be beneficial for the research.

Spoligotyping may offer an alternative for typing Southern blotting when rapid results are required. The level of differentiation by Spoligotyping is less compared to IS6110 fingerprinting for strains having five or more IS6110 copies, but higher for strains with less than five copies. Thus, Spoligotyping is a preferred method to type *M. bovis* strains, which usually contain only one or two IS6110 copies. Note, that *Mycobacterium bovis* can be recognized by the absence of reactivity with spacers 39-43.

- ◆ Catalog of Spoligotyping product's are:

Spoligotyping Kit with Primers and Controls (IM9701): consists of four vials, one membrane and manual.

- Two vials containing the positive controls:
 - a) positive control 1 (*M. tuberculosis* strain H37Rv)
 - b) positive control 2 (*M. bovis* BCG P3)
- Two vials containing the primers for PCR amplification:
 - a) primer Dra (biotinylated)
 - b) primer Drb
- One Spoligo-membrane. The membrane is shipped in 20 mM EDTA.

Spoligotyping Membrane (IM9702): Membrane bound with spacer Oligonucleotides.

Foam Cushions (PC200): Support cushions for the membrane.

Mini-blotter for Spoligotyping (MN45): used for loading the samples.

- ◆ **Storage Conditions:**

- Membrane to be stored at +4°C, for optimal storage condition.
- Primer DRa is biotinylated, should be stored at +4°C.
- Primer DRb to be stored in small aliquots at -20°C.
- Controls 1 & 2, are to be stored at -20°C.

NOTE:

- By using our kit, at a time 41 samples & 2 controls can be run on the membrane. The membrane can be stripped and re-used 4 to 5 times, approximately ~ 200 samples can be analyzed.
- Shelf life of the kit, is 6 months from the date of manufacturing.

Some of the publications, by using our Spoligotyping kit are:

Strain Diversity of Mycobacterium tuberculosis Isolates from Pulmonary Tuberculosis Patients in Afar Pastoral Region of Ethiopia (*Mulugeta Belay,1,2 Gobena Ameni,1 Gunnar Bjune,2 David Couvin,3 Nalin Rastogi,3 and Fekadu Abebe2*)

Molecular Epidemiology and Genotyping of Mycobacterium tuberculosis Isolated in Baghdad (*Ruqaya Mustafa Ali,1 Alberto Trovato,2 David Couvin,3 Amina N. Al-Thwani,1 Emanuele Borroni,2 Fahim H. Dhaer,4 Nalin Rastogi,3 and Daniela M. Cirillo2*)

Polymorphism in the RD1 locus and its effect on downstream genes among South Indian clinical isolates of Mycobacterium tuberculosis (*Ahmed Kabir Refaya, Shanmugam Sivakumar, Balaji Sundararaman and Sujatha Narayanan*)

Molecular Epidemiology of Mycobacterium tuberculosis Complex in Singapore, 2006-2012 (*Li Hwei Sng equal contributor, Wah Win, Cynthia Bin-Eng Chee, Li Yang Hsu mail, Estelle Mak, Arul Earnest, Marcus Eng-Hock Ong, Jeffery Cutter, Yee Tang Wang*)

Mycobacterium tuberculosis is the causative agent of tuberculosis in the southern ecological zones of Cameroon, as shown by genetic analysis (*Jean Paul Assam Assam1,2, Véronique Penlap Beng2, Fidelis Cho-Ngwala1, Michel Toukam3, Ane-Anyangwe Irene Ngoh1, Mercy Kitavi4, Inoster Nzuki4, Juliette N Nyonka1, Emilienne Tata1, Jean Claude Tedom2, Robert A Skilton4, Roger Pelle5 and Vincent P K Titanji1**)

Clinico-pathological features of tuberculosis due to Mycobacterium tuberculosis Uganda genotype in patients with tuberculous lymphadenitis: a cross sectional study (*Dan Wamala1,3*, Benon Asiimwe2, Edgar Kigozi2, Gerald Mboowa2, Moses Joloba2 and Gunilla Kallenius3*)

Pathology of Camel Tuberculosis and Molecular Characterization of Its Causative Agents in Pastoral Regions of Ethiopia (*Gezahegne Mamo2,3*, Gizachew Bayleyegn2, Tesfaye Sisay Tessema2, Mengistu Legesse1,3, Girmay Medhin1, Gunnar Bjune3, Fekadu Abebe3, Gobena Ameni1*)

Molecular characterization of Mycobacterium tuberculosis isolates from North Indian patients with extrapulmonary tuberculosis (*Manimuthu Mani Sankar, Jitendra Singh, Selvaraj Cynthiya Angelin Diana, Sarman Singh**)

Modern lineages of Mycobacterium tuberculosis in Addis Ababa, Ethiopia: implications for the tuberculosis control programme (**Mihret AI, 2, 3, Bekele YI, Aytnew MI, Assefa YI, Abebe MI, Wassie LI, Loxton GA3, Yamuah LI, Aseffa AI, Walzl G3, Howe R1*)

Mycobacterium tuberculosis is the causative agent of tuberculosis in the southern ecological zones of Cameroon, as shown by genetic analysis (*Jean Paul Assam Assam1,2, Véronique Penlap Beng2, Fidelis Cho-Ngwai1, Michel Toukam3, Ane-Anyangwe Irene Ngoh1, Mercy Kitavi4, Inoster Nzuki4, Juliette N Nyonka1, Emilienne Tata1, Jean Claude Tedom2, Robert A Skilton4, Roger Pelle5 and Vincent P K Titanji*)

Presencia del genotipo Beijing entre cepas del complejo Mycobacterium tuberculosis en dos centros de salud de la Región Metropolitana-Chile (*Paulina Meza, M. Elvira Balcells, Carolina Miranda, Marcela Cifuentes, Aniela Wozniak y Patricia García*)

List of Customers

Some of our customer's, using '*Spoligotyping Kits*' are:

- All India Institute of Medical Sciences (AIIMS), New Delhi, India
- Apollo Hospital, Hyderabad (Telangana), India
- Bhopal Memorial Hospital & Research Centre (BMHRC), Bhopal (Madhya Pradesh), India
- CSIR - Institute of Microbial Technology (IMTECH), Chandigarh (Punjab), India
- Dr. D.Y. Patil Medical College, Pune (Maharashtra), India
- Dr. Rajendra Prasad Government Medical College, Kangra at Tanda (Himachal Pradesh), India
- Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow (Uttar Pradesh), India
- Government Hospital for Chest Diseases Gorimedu, Puducherry, India
- Guru Nanak Dev University, Amritsar (Punjab), India
- Jiwaji University, Gwalior (Madhya Pradesh), India
- JSS Medical College, Mysuru (Karnataka), India
- Kasturba Medical College & Hospital, Manipal University, Manipal (Karnataka), India
- LEPRO India - Blue Peter Public Health & Research Centre (BPHRC), Hyderabad (Telangana), India
- Manipur University, Imphal (Manipur), India

- National Institute for Research in Tuberculosis (NIRT), Chennai (Tamil Nadu), India
- National Institute of TB and Respiratory Diseases (NITRD), New Delhi, India
- National JALMA Institute of Leprosy & Other Mycobacterial Diseases, Agra (Uttar Pradesh), India
- New Delhi Tuberculosis (NDTB) Centre, Delhi, India
- Pushpagiri Institute of Medical Sciences and Research Centre, Thiruvalla (Kerala), India
- Regional Medical Research Centre, NE Region, Dibrugarh (Assam), India
- Sawai Man Singh (SMS) Medical College, Jaipur (Rajasthan), India
- Sri Shivani College Of Pharmacy, Warangal (Telangana), India
- Vallabhbhai Patel Chest Institute (VPCI), University of Delhi, Delhi, India
- Academia Nacional de Medicina / Buenos Aires National Academy of Medicine, Argentina
- Aga Khan University Hospital, Pakistan
- Agri-Food and Biosciences Institute, United Kingdom
- Animal and Plant Health Agency (APHA), United Kingdom
- ARC-Onderstepoort Veterinary Research (ARC-OVR), South Africa
- Australian Reference Laboratory for Bovine Tuberculosis (ARLBT), Australia
- Boston University School of Medicine, Boston (MA), USA
- Burnet Institute, Australia
- Canadian Food Inspection Agency (CFIA), Canada
- Catholic University of the Sacred Heart, Italy
- Center for Laboratory Medicine, Kantonsspital Luzern, Luzern, Switzerland
- Centre for Research and Development of Medical Diagnostic Laboratories (CMDL), Division of Clinical Microbiology, Khon Kaen University (KKU), Thailand
- Centre Pasteur of Cameroon, Cameroon
- Chinese Academy of Agricultural Sciences (CAAS), China
- Chinese Center for Disease Control and Prevention (China CDC), China
- CIATEJ (Center for Research and Assistance in Technology and Design of Jalisco), Mexico
- CODA-CERVA, Belgium
- Consejo Estatal para la Prevencion y Control del Sida (COESIDA-CAPASITS OAXACA), Mexico
- Corporación CorpoGen, Colombia
- Corporación para Investigaciones Biológicas (CIB), Colombia

- Cukurova University, Turkey
- David Axelrod Institute, Wadsworth Center, NYS Department of Health (NYSDOH/HRI), USA
- Durban University of Technology, South Africa
- Eijkman Institute for Molecular Biology, Indonesia
- Empresa Ejecutora de Donatios (EMED), Cuba
- Fondation Mérieux, France
- Friedrich-Loeffler-Institut (FLI), Germany
- Fudan University, China
- Fundación ArgenINTA, Argentina
- Ghent University, Belgium
- Hospital Universitari Germans Trias i Pujol, Spain
- Hospital Universitario "José E. González", Mexico
- Hospital Universitário - Universidade Federal de Santa Catarina (UFSC), Brazil
- Hospital Universitario Donostia, Spain
- Institut Pasteur, France
- Institut Pasteur de Montevideo, Uruguay
- Institut Pasteur du Cambodge, Cambodia
- Institut Pasteur de la Guadeloupe, Guadeloupe
- Institute of Biotechnology, Vilnius University, Lithuania
- Institute of Tropical Medicine Antwerp, Belgium
- Instituto Aragonés de Ciencias de la Salud (I+CS), Spain
- Instituto De Investigación Biotecnología, CICVyA INTA, Argentina
- Instituto Nacional de Ciencias Médicas y Nutrición "Salvador Zubirán", Mexico
- Instituto Nacional de Enfermedades Infecciosas ANLIS Dr. Carlos G. Malbrán, Argentina
- Instituto Nacional de Salud Publica, Mexico
- Instituto Nacional de Higiene "Rafael Rangel" (INHRR), Venezuela
- Instituto Nacional de Salud, Peru
- Instituto Oswaldo Cruz - Fundação Oswaldo Cruz, Brazil
- International Atomic Energy Agency (IAEA), Austria

- International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Bangladesh
- International Foundation for Science (IFS), Sweden
- Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta (IZSTO), Italy
- Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna "Bruno Ubertini" (I.Z.S.L.E.R.), Italy
- John Hopkins University School of Public Health, Baltimore (MD), USA
- Karolinska Institutet, Sweden
- Kuala Lumpur Hospital, Malaysia
- Latvian Biomedical Research and Study Centre, Latvia
- Leiden University Medical Center (LUMC), The Netherlands
- London School of Hygiene & Tropical Medicine (LSHTM), United Kingdom
- Mahidol University / Siriraj Hospital, Thailand
- Makerere University College of Health Sciences, Uganda
- Massachusetts State Laboratory Institute, Boston (MA), USA
- Methodist Hospital & Research Institute, Houston (TX), USA
- National Folkehelse Institutt (FHI) / The Norwegian Institute of Public Health (NIPH), Norway
- National Institute for Communicable Diseases (NICD), South Africa
- National Institute for Health and Welfare (THL), Finland
- National Institute of Fundamental Studies (NIFS), Sri Lanka
- National Institute of Public Health (NIPH), Czech Republic
- National Mycobacterium Reference Laboratory (NMRL-PHE), United Kingdom
- National Reference Center for Mycobacteria, Germany
- National Reference Laboratory on Tuberculosis and Mycobacteria, Institute Pedro Kourí, Cuba
- National Veterinary Institute, Norway
- Padjajaran University / Universitas Padjadjaran, Indonesia
- Papua Biomedical Research Centre, National Institute of Health Research and Development (NIHRD), Indonesia
- Pontificia Universidad Catolica de Chile, Chile
- Razi Vaccine & Serum Research Institute, Iran
- SAIC - Frederick Inc., Frederick (MD), USA

- San Raffaele Scientific Institute, Italy
- Sciensano / Institut Scientifique de Sante Publique (WIV-ISP), Belgium
- Singapore General Hospital (SGH), Singapore
- Sokoine University of Agriculture, Tanzania
- South African Medical Research Council (MRC), South Africa
- Statens Serum Institut (SSI), Denmark
- Stellenbosch University, South Africa
- Sultan Qaboos University (SQU), Oman
- Swedish Institute for Infectious Disease Control, Sweden
- Swiss Tropical and Public Health Institute (Swiss TPH), Switzerland
- Tehran University of Medical Sciences, Iran
- The Armauer Hansen Research Institute (AHRI), Ethiopia
- The Royal Tropical Institute (KIT), The Netherlands
- Unidad de Investigación Biomédica de Zacatecas (UIBMZ-IMSS), Mexico
- Universidad Austral de Chile, Chile
- Universidad Autonoma de Queretaro (UAQ), Mexico
- Universidad Complutense de Madrid / Complutense University of Madrid, Spain
- Universidad de Buenos Aires, Argentina
- Universidad Industrial de Santander, Colombia
- Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), Mexico
- Universidad Nacional de Colombia, Colombia
- Universidad San Francisco de Quito (USFQ), Ecuador
- Universidade Eduardo Mondlane, Mozambique
- Universidade Federal de São Paulo, Brazil
- Universidade Federal do Rio Grande - FURG, Brazil
- University of Basel (UoB), Switzerland
- University of Baghdad, Iraq
- University of Bergen, Norway
- University of California, Berkeley (CA), USA

- University of Cape Town (UCT), South Africa
- University of Douala, Cameroon
- University of Extremadura, Spain
- University of Ghana, Ghana
- University of Hawaii, Honolulu (HI), USA
- University of Ibadan, Nigeria
- University of Kwazulu-Natal, South Africa
- University of Limpopo, South Africa
- University of Lisbon, Portugal
- University of Malaya, Malaysia
- University of Montpellier, France
- University of Nebraska Medical Center, Omaha (NE), USA
- University of Oslo, Norway
- University of Palermo / Università degli Studi di Palermo, Italy
- University of Pittsburgh, Pittsburgh (PA), USA
- University of Pretoria, South Africa
- University of the Free State, South Africa
- University of Witwatersrand / National Health Laboratory Service (NHLS), South Africa
- Uniwersytet Warszawski / University of Warsaw, Poland
- USDA (U.S. Department of Agriculture) - APHIS, Ames (IA), USA
- Utrecht University, The Netherlands
- Wageningen University & Research (WUR), The Netherlands