

## Technical assistance and support by Supranational Reference Laboratory (SRL) in Milan for TB laboratory strengthening and drug resistance surveillance (DRS) related activities in selected countries

### Final Report SPHQ13-LOA-226

The SRL in Milan is located within the campus of the Fondazione Centro San Raffaele (FCSR) and Ospedale san Raffaele (OSR) in Milan, Italy. At present the laboratory offers technical assistance to several countries including those specifically mentioned in this agreement.

Planned activities:

**DRS:**

Ivory Coast, Ethiopia, Mozambique

**EXPAND-TB:**

Ivory Coast, Ethiopia, Mozambique, Nigeria, Ethiopia

SRL-Milan in Countries activities were performed as follows:

#### 1. Visit to Countries for delivering technical assistance:

	Activity	Performed	Days in Country	Days additional activities	Annex
Djibouti	Development of the Laboratory Strategic Plan	07/12-13/12-2014 04/01-09/01-2014	10	4	Annex 1
Ethiopia	Technical NTP program review	26/08- 07/09/2013	26	18	Annex 2
	Technical assistance/supervision/planning	7-12/12/2013			Annex 3
	Development of the Laboratory Strategic Plan	16-21/02/2014			Annex 4 (Final report is still pending)
Ivory Coast	Technical Xpert training of trainers	04/05-16/05- 2014	16	22	Annex 5
	Technical assistance/supervision/planning	27/05-30/05-2014			Annex 6
Kosovo	Technical assistance/supervision/planning	08/04-11/04-2014	4	4	Annex 7 (Final report is still pending)
Mozambique	Assessment of NRL and Training on second line DST	26/01-08/02- 2014	18	17	Annex 8
	Maputo, meeting for the implementation of Xpert	20/04-24/04- 2014			Annex 9

Nigeria	Assessment of NRL and Regional Lab	26/01- 07/02-2014	20	25	Annex 10
	Support NFM Global Fund Concept Note writing	08/06-14/06-2014			
Senegal	NRL Assessment	10-14/06/2013	20	20	Annex 11
	Refresher Training on liquid culture	04-20/11/2013			Annex 12
Tunis	Monitoring of new SRL	15/05 – 6/05/2014	2	1	

## 2. Molecular Surveillance of resistance to fluoroquinolones and pyrazinamide in Pakistan and Bangladesh.

Illumina multiplexing has been performed on *gyrA/gyrB* genes, responsible for resistance to FQs and on *pncA* genes associated to pyrazinamide resistance. (Refer to the attach 15 for detailed results).

PYRAZINAMIDE
<ul style="list-style-type: none"> <li>• <b>Illumina</b> - Sequenced for <i>pncA</i> whole gene + promoter: <ul style="list-style-type: none"> <li>➤ Bangladesh: 899/1013 shipped (96 out of the remaining 114 already amplified and ready for sequencing)</li> <li>➤ Pakistan: 172/174 shipped</li> </ul> </li> <li>• <b>Sanger for comparison</b> - Sequenced for <i>pncA</i> whole gene + promoter (additional): <ul style="list-style-type: none"> <li>➤ Bangladesh: 119</li> <li>➤ Pakistan: 52</li> </ul> </li> </ul>
FLUOROQUINOLONES
<ul style="list-style-type: none"> <li>• <b>Illumina</b> - Sequenced for <i>gyrA-gyrB</i> whole gene + promoter (including additional): <ul style="list-style-type: none"> <li>➤ Bangladesh: 228</li> <li>➤ Pakistan: 81</li> </ul> </li> <li>• <b>Sanger for comparison</b> - Sequenced for <i>gyrA-gyrB</i> whole gene + promoter (additional): <ul style="list-style-type: none"> <li>➤ Bangladesh: 43</li> <li>➤ Pakistan: 14</li> </ul> </li> </ul>

## 3. Training courses, PT panels for culture/DST, or technical assistance at the NRL

	activity	performed
Mozambique	Panel for culture and LPA	On the way
Nigeria	Panel for DST	Annex 13
Senegal	Panel for culture and DST	Annex 13
Tunis	Panel for DST	Annex 13

#### 4. Laboratory and coordination activities at SRL

From daily to monthly phone/ skype call or email on advancements with all the Reference laboratory responsible person and or NTP manager.

Preparation and shipment of panels of strains for quality assurance purposes were performed for the following Countries: Burkina Faso, Kosovo, Mozambique, Nigeria. Evaluation and feed-back to Countries from previous EQAs.

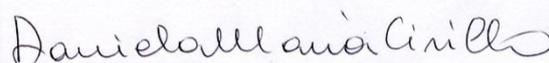
#### 5. Tests performed at the SRL for diagnosis of tuberculosis, DR tuberculosis, DRS purposes or External Quality Assessment.

COUNTRY	SAMPLES	NUMBER	ANALYSIS
Burkina	Clinical specimens	36	Culture and first and second line DST
	DNA	34	LPA
Kosovo	Strains	2	First and second line DST
Mozambique	Positive cultures	61	Full diagnostic protocol, molecular and conventional, DST second line for MDR
	Positive culture	82	Isolation, NTM and MTB identification. Sequencing of NTM. DNA extraction, LPA, First and second line DST for MTB
Nigeria	Strains	48	Full diagnostic protocol, molecular and conventional, DST second line for MDR. PncA sequencing.

#### 6. Training in Milano ( as cofinancing activity)

topic	Country	days	date
LPA/ eXpert	Bulgaria	2	October 2013
First/Second line DST	Bulgaria	2	October 2013
	Tunis	6	September-October 2013
Molecular typing	Tunis	7	September-October 2013
	Egypt	6	November 2013

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Daniela Maria Cirillo  
Head,  
Emerging Bacterial Pathogens Unit