EQA of PZA, RIF and INH in 2012. Five Swedish clinical TB-laboratories.

Lab no:	Result:	PZA	RIF	INH
1.	Res (correct/false)	5/3	11/0	9/0
	Susc (correct/false)	12/0	9/0	10/1
2.	Res (correct/false)	5/0	11/0	9/0
	Susc (correct/false)	15/0	9/0	11/0
3.	Res (correct/false)	5/0	11/0	9/0
	Susc (correct/false)	15/0	9/0	11/0
4.	Res (correct/false)	5/6	11/0	9/0
	Susc (correct/false)	9/0	9/0	11/0
5.	Res (correct/false)	4/0	11/0	9/0
	Susc (correct/false)	15/1	9/0	11/0

Correct results:			
	PZA: 90/100	Res: 24/25	Susc: 66/75
	RIF: 100/100	Res: 55/55	Susc: 45/45
	INH: 99/100	Res: 45/45	Susc: 54/55

From this weeks **The Lancet**:

Quality-assured susceptibility data for the important first-line drug, pyrazinamide, are almost totally lacking for areas with a high prevalence of MDR tuberculosis.
Drug-susceptibility testing of pyrazinamide is unfortunately difficult because no reliable test is generally available.
Moreover, unlike the other first-line drugs, there is no global system for external quality assurance of the susceptibility data for pyrazinamide.
This lack of data is especially unlucky, since evidence shows that combinations of pyrazinamide with moxifloxacin and either of the experimental compounds bedaquiline or PA-824 could be interesting alternatives in the treatment of MDR tuberculosis.
A reliable and affordable susceptibility test method for pyrazinamide is needed, especially for settings where MDR tuberculosis is prevalent.

Commentary S. Hoffner

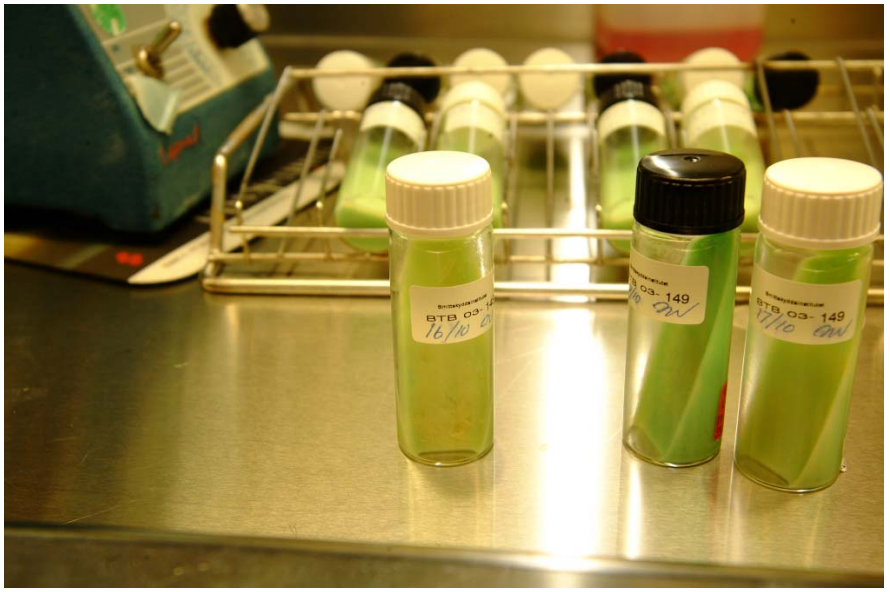

TABLE 1 Pyrazinamide MICs in Bactec MGIT 960 system correlated to *pncA* gene sequencing data and previously obtained Bactec 460 results for 46 *M. tuberculosis* strains

Strain group	MGIT PZA MIC (mg/liter)	No. of strains	*pncA* amino acid change	Previous BACTEC 460 result[c]				
				PZA	INH	RIF	EMB	SM
Consecutive fully susceptible strains	≤8	1	None	S	S	S	S	S
	16	4	None	S	S	S	S	S
	32	8	None	S	S	S	S	S
	64	2	None	S	S	S	S	S
Nonconsecutive strains with MICs less than or equal to ECOFF (≤64 mg/liter)	16	1	None	S	S	S	S	S
	32	2	None	S	S	S	S	S
	32	1	None	S	S	R	S	S
	32	1[a]	Ser65Ser	S	R	R	S	S
	64	3	None	S	S	S	S	S
	64	1	None	R	R	S	S	R
	64	1	None	S	R	S	S	S
	64	1[a]	Thr47Ala	R	R	R	R	R
Nonconsecutive strains with MICs greater than ECOFF (>64 mg/liter)	128	1[a]	None	S	S	S	S	S
	128	1[b]	Phe58Leu	R	R	R	S	S
	256	1[a]	None	R	R	R	R	R
	256	1	Ser65Ser/frameshift	R	R	R	S	S
	256	1	Ile6Thr	R	R	R	R	S
	256	1	Val125Phe	R	R	R	S	S
	512	1	Pro54Leu	R	R	R	S	S
	512	1	Phe58Leu	R	R	R	S	R
	1,024	1	Gly132Ala	R	R	R	R	R
	1,024	1	Leu172Pro	R	R	R	R	S
	1,024	1	Val155Gly	R	R	R	S	R
	>1,024	1	Val155Gly	R	R	R	S	S
	>1,024	1	Met175Thr	R	R	R	R	R
	>1,024	1	Pro54Ser	R	R	R	R	S
	>1,024	1	Gly132Ser	R	R	R	R	S
	>1,024	1	Frameshift	R	R	R	S	R
	>1,024	1[b]	His51Gln	R	S	S	S	S
	>1,024	1	Arg123Pro	R	S	S	S	S
	>1,024	1	4-amino-acid in-frame insertion	R	R	R	S	S
	>1,024	1	Thr142Lys	R	R	R	R	S

[a] PZase positive.

[b] PZase negative.

[c] INH, isoniazid (0.1 mg/liter); RIF, rifampin (1 mg/liter); EMB, ethambutol (2.5 mg/liter); SM, streptomy susceptible.

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Reevaluation of the Critical Concentration for Drug Susceptibility Testing of *Mycobacterium tuberculosis* against Pyrazinamide Using Wild-Type MIC Distributions and *pncA* Gene Sequencing

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