



14:30 Session 2: TB Diagnosis
Chair: Bob Gilman

- 14:30 Proteomic fingerprinting for infectious diseases – *Dan Agranoff*
- 14:45 Proteomics in TB – *Gurj Sandhu*
- 15:00 Genetic and molecular correlates of pyrazinamide resistance
– *Paty Sheen*
- 15:15 Unravelling the enigmatic mycobacterial pyrazinamidase
– *Mirko Zimic*
- 15:30 Rapid and sensitive Tuberculosis diagnosis and susceptibility testing without decontamination or centrifugation
– *Louis Grandjean*
- 15:45 Stool testing to diagnose pulmonary TB in adults and children
– *Laura Martin*

Rapid sensitive tuberculosis culture and susceptibility testing without the need for decontamination or centrifugation

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Global access to sensitive TB diagnostic culture and susceptibility testing is limited by the need for specialist sample processing including centrifugation. The sensitivity of TB detection was therefore quantified in culture broth vs. selective broth vs. standard centrifuge decontamination and then clinical sputum samples (n=722) were used to compare these techniques. Selective media had no effect on the sensitivity of TB culture whereas standard centrifuge decontamination diminished the number of colonies by 72% (P=0.02). For clinical specimens, both direct and decontaminated cultures detected TB in a median of 8.1 days and simultaneously identified MDRTB with 99.5% agreement. 309/709 (44%) sputum samples were positive and 68% were detected by direct culture vs. 91% detection by decontaminated culture (P<0.001) because 25% of direct cultures were overgrown, compared with only 4% of the conventional cultures (P<0.001). Excluding overgrown cultures requiring repetition, diagnostic sensitivity was similar (95% vs. 93% p=0.6). Dilutions of sputum were rarely overgrown and culturing sputum together with serial dilutions directly on selective media detected 81% of positives. Therefore, direct sputum culture with MODS testing allows *M. tuberculosis* diagnosis with minimal laboratory processing although decontamination with centrifugation reduces the number of failed assays that require repetition.

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