



Aerospray® TB Automated Slide Stainer / Cytocentrifuge (Model 7722)

Applications Training

“Bringing the ground-breaking value of Aerospray technology to TB staining”



" Each TB patient has a face, a name and a life that is precious to them as it is to any of us."

- World TB Organisation -





How Common is TB?

- ◆ 9 million new TB cases every year (world wide)
- ◆ TB second most common cause of death: 1.3 million/year
- ◆ Asia and Africa are high burden TB territories.

Country	Population	TB cases
Pakistan	179 million	670.000
Bulgaria	7,3 million	3100
Czech Republic	10,7 million	770
Sweden	9,5 million	920
Denmark	6 million	560
Norway	5 million	510
Greece	11,1 million	710
UK	62,8 million	13000
Serbia	9,5 million	3000
Italy	60,9 million	5700

Source: www.who.int

How can we reduce TB burden?

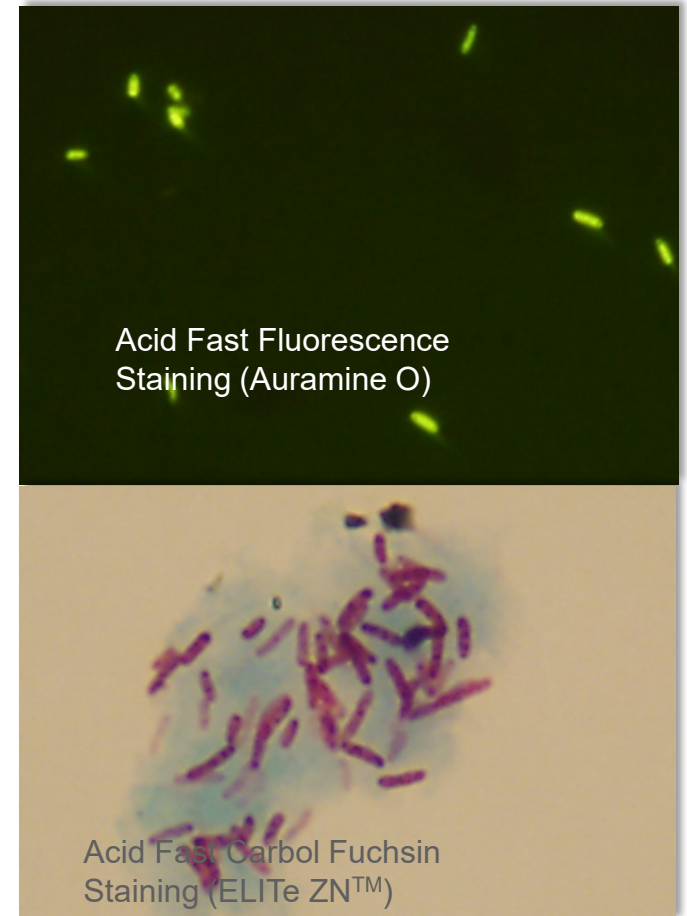
- ◆ WHO Stop TB / DOTS programs.
- ◆ WHO Goal: 70% case detection and 85% treatment success.
- ◆ WHO sets priority on increased case detection.

Country	% case detection	% treatment success	Required funding (US\$ millions)	Global Fund	Domestic funding
Pakistan	65%	92%	73 US\$ million	62 US\$ million	3,65 US\$ million
Bulgaria	90%	86%	16 US\$ million	2,4 US\$ million	13,6 US\$ million
Czech Republic	99%	69%	no info	0	0
Sweden	87%	83%	no info	0	0
Denmark	87%	61%	no info	0	0
Norway	87%	84%	no info	0	0
Greece	87%	no info	no info	0	0
UK	88%	80%	no info	0	0
Serbia	82%	87%	17 US\$ million	1,5 US\$ million	14,5 US\$ million
Italy	87%	no info	no info	0	0

Source: www.who.int

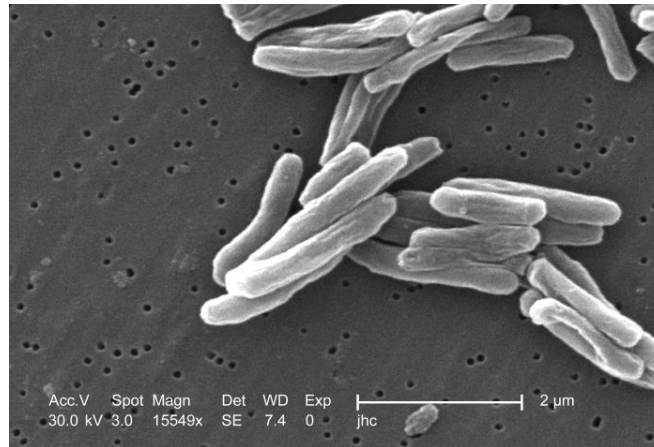
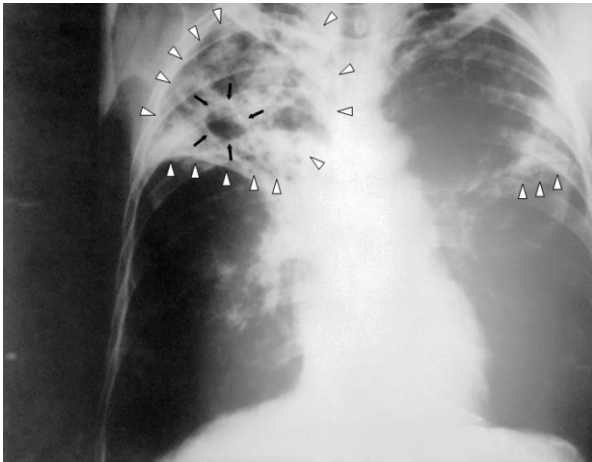
Acid Fast Staining Overview

- ◆ Mycobacterium are difficult to stain.
- ◆ Thick lipid layer which is very hydrophobic, waxy, and rich in mycolic acids/mycolates.
 - ◆ Phenol is used to penetrate this lipid layer
- ◆ Two types of staining:
 - ◆ Fluorescent: for screening direct smears.
 - ◆ Auramine O
 - ◆ Auramine Rhodamine
 - ◆ Carbol Fuchsin: stain for observing morphology.
 - ◆ ELITe ZNTM – Ziehl Neelsen type staining.



Typical Specimens (Sputa & Body Fluids)

- ◆ *M. tuberculosis* - Tuberculosis (TB)
- ◆ *M. leprae* – Leprosy
- ◆ *M. avium* complex (MAC) – may cause death in AIDS patients.
- ◆ *M. avium* paratuberculosis - implicated in Crohn's disease in humans and Johne's disease in sheep.
- ◆ *M. bovis* – TB in cattle
- ◆ *Cryptosporidium*



How is TB Diagnosed?



- ◆ Old school method
 - ◆ AFB smear with toxic hot Ziehl Neelsen (ZN) stain.
 - ◆ Used as direct staining or as confirmation in some countries.
 - ◆ Aerospray TB offers cold ZN staining.
 - ◆ Culture on solid Löwenstein medium.

- ◆ CDC Recommendation:
 - ◆ Screening with:
 - ◆ AFB smear fluorescence staining.
 - ◆ Molecular assays (e.g. Gene Xpert- cfr public. Hindi J)
 - ◆ Culture on solid and liquid medium.
 - ◆ Treatment follow-up with AFB fluorescence staining.



Solution EBS Offers

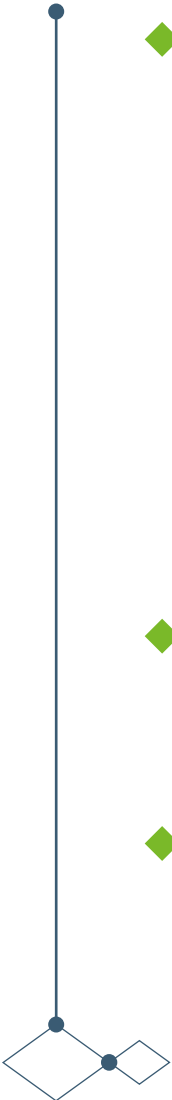


Sample preparation: Cytopro Rotor (REF: AC-160)



- ◆ All-in one solution
 - ◆ Sample decontamination & concentration for superior sensitivity.
 - ◆ Uniform thin slide for reproducible staining results.
 - ◆ Fast centralized interpretation area.

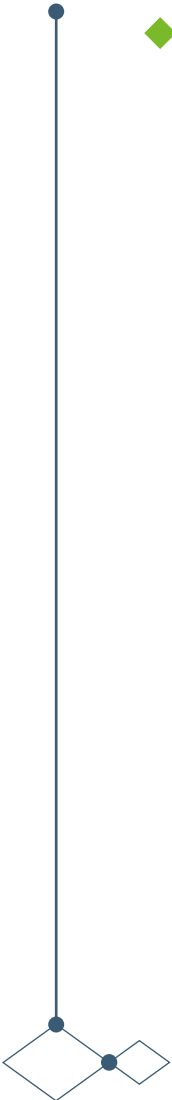
- ◆ “Cytocentrifugation of sputum has been reported to increase sensitivity of acid-fast smear for M. tuberculosis to 100%”
- ◆ (John R et al. AM J Resp Crit Care Med Vol 161.pp 1559-1562, 2000)



Specimen Fixation



- ◆ Good fixation step is critical to ensure good staining results, prevent cell wash-off and inactivate AFB bacilli.
 - ◆ Fixation step is not integrated in Aerospray TB stainer.
 - ◆ CDC recommends 2 h heating at 75°C on hotplate
 - ◆ EBS recommends following CDC recommendations.
 - ◆ Some users have reported good results with 15 min heating at 80°C on hotplate.
 - ◆ Heat flame not recommended.
 - ◆ 30% of customers uses Mycohold (REF: SS-061M or SS-161M)
- ◆ It is our responsibility to educate customers to ensure they obtain the most optimal staining results!



Aerospray TB Stain Cycle

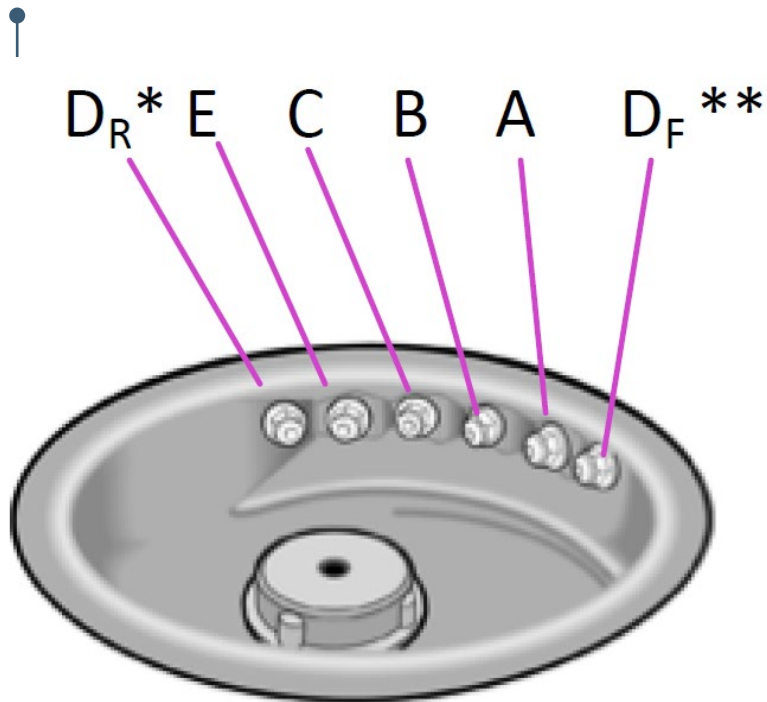
Preliminary step: Fixation

(common step for both instrument staining and hand staining.)

1. Primary Stain (C reagent)
2. Wash (D reagent)
3. Decolorizer (A reagent)
4. Wash (D reagent)
5. Counterstain (B reagent)
6. Wash (D reagent)
7. Spin Dry

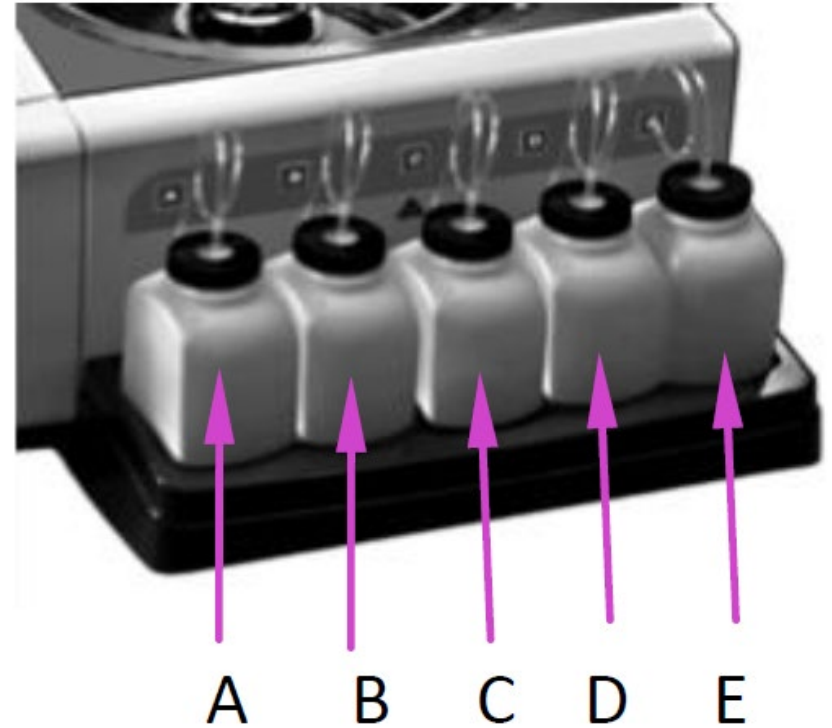


Aerospray TB Stains

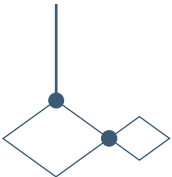


* D_R = D Rear

** D_F = D Front



Most users use the 5 L bottle for the DI water (reagent D). The 5 L bottle is not pictured in this picture. Consult manual.

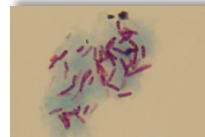


Aerospray TB Stains



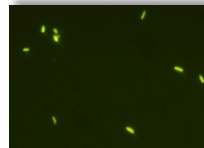
- ◆ There are two types of staining that can be accommodated in the Aerospray TB (Model 7722)

- ◆ **Carbol Fuchsin**



- ◆ ELITe ZNTM – Very concentrated reagent, formula similar to Ziehl Neelsen and Kinyoun manual stains.

- ◆ **Fluorescence**



- ◆ Auramine O – stains organisms yellow/green
- ◆ Auramine Rhodamine – stains organisms yellow/orange



Aerospray TB Carbol Fuchsin Stains

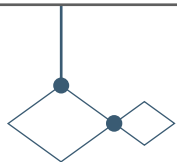


<p>Decolorizer (A) Prepared: 500 mL bottles Concentrate: 30 mL dilutes to 500 mL</p>	<p>95% Methanol + HNO₃ SS-061A ‡ SS-061A-EU SS-161A</p>	
<p>Counterstain (B) Prepared: 500 mL bottles Concentrates: 130 mL (BMB) and 100 mL (BBG), both dilute to 2.0 L.</p>	<p>Methylene Blue (Stains AFB negative and background Blue) SS-061BMB SS-061BMB-EU SS-161BMB</p>	<p>Brilliant Green (Stains AFB negative and background Green) SS-061BBG SS-061BBG-EU SS-161BBG</p>
<p>Primary Stain (C) Prepared: 500 mL bottles Concentrate: NA</p>	<p>ELITe ZN™ SS-061CEZ SS-061CEZ-EU</p>	
<p>Water Wash (D)</p>	<p>DI H₂O</p>	
<p>Methanol or Ethanol (E)</p>	<p>SS-MeOH *‡ Or users provides their own</p>	

‡ Ships as hazard internationally or overnight (airfreight).

* Provided in US only

-EU designates reagents produced and shipped within Europe, concentrates are not available in Europe.



Aerospray TB Fluorescence Stains

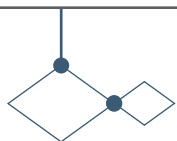


<p>Decolorizer (A) Prepared: 500 mL bottles Concentrate: 30 mL dilutes to 500 mL</p>	<p>70% Isopropanol + HNO₃ SS-061AF ‡ SS-061AF-EU SS-161AF</p>	
<p>Counterstain (B) Prepared: 500 mL bottles Concentrate: 200 mL dilutes to 2.0 L</p>	<p>Potassium Permanganate SS-061BP SS-061BP-EU SS-161BP</p>	<p>Potassium Permanganate SS-061BP SS-061BP-EU SS-161BP Thiazin Red SS-061BRT-EU dilutes (50:50) with Carbol Solution SS-061BCS-EU</p>
<p>Primary Stain (C)</p>	<p>Auramine Rhodamine Stains AFB positive bacteria yellow-red SS-061CAR SS-061CAR-EU</p>	<p>Auramine O Stains AFB positive bacteria yellow-green SS-061CA SS-061CA-EU</p>
<p>Water Wash (D)</p>	<p>DI H₂O</p>	
<p>Methanol or Ethanol (E)</p>	<p>SS-MeOH *‡ Or users provides their own</p>	

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Aerospray TB: Carbol Fuchsin

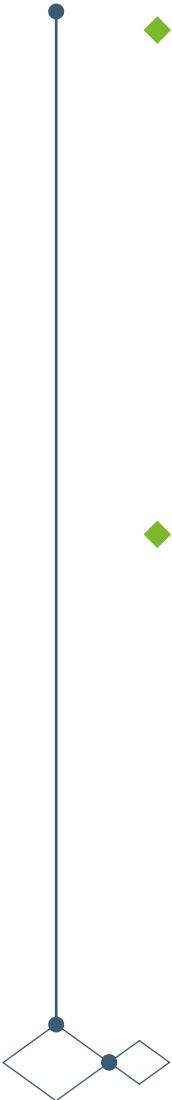
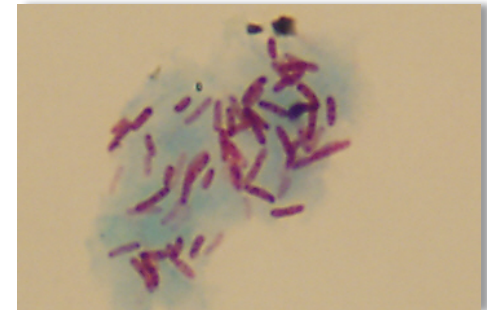


◆ Why?

- ◆ Morphology: confirm positive fluorescence stains
- ◆ Staining of other organisms than Mycobacterium such as Cryptosporidium Faster operation & easier interpretation than manual stains.
- ◆ EBS reagent, ELITe ZN, is less toxic than Ziehl Neelsen manual stains that require to be heated during staining process.

◆ Reagents

- ◆ Primary stain: ELITe ZN (REF: SS-061CEZ)
- ◆ Decolorizer
- ◆ Counterstain: Methylene Blue or Brilliant Green. Stains background as blue or green, user can decide their preference.



Aerospray TB: Fluorescence

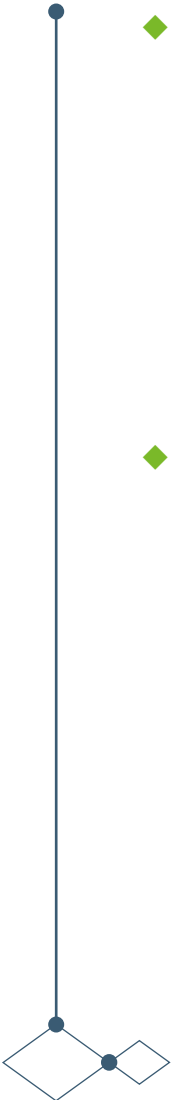
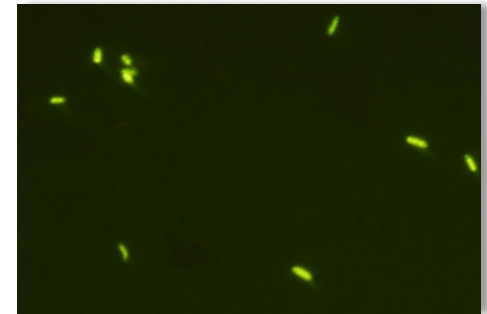


◆ Why?

- ◆ High sensitivity for screening (CDC recommended)
- ◆ Faster operation & easier interpretation than manual stains.
- ◆ More economical (reagent use + LED)
- ◆ No toxic fumes

◆ Reagents

- ◆ Primary stain: Auramine O or Auramine Rhodamine
- ◆ Decolorizer
- ◆ Counterstain: Potassium Permanganate or Thiazin Red.
 - ◆ Thiazin Red is currently mostly used in France but is starting to be used by users in other countries. Allows for easy focus on background of slide and organisms are easily viewed.
 - ◆ New cleaning solution (REF: SS-266) was specifically designed to effectively dissolve residue left for potassium permanganate.





Aerospray TB New Items

EBS AFB Control Slides (REF: SS-249),
50 slides per box.

- ◆ Essential to support demos
- ◆ For quality control management
- ◆ Positive control - deactivated: *M. tuberculosis*
- ◆ Negative Control – *E. coli*

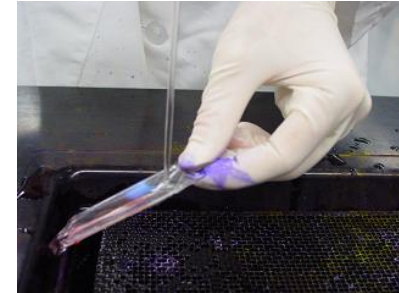
Superior Cleaning Solution (REF: SS-266),
500 mL read-to-use

- ◆ Recommended for potassium permanganate users but can be used on all reagents.



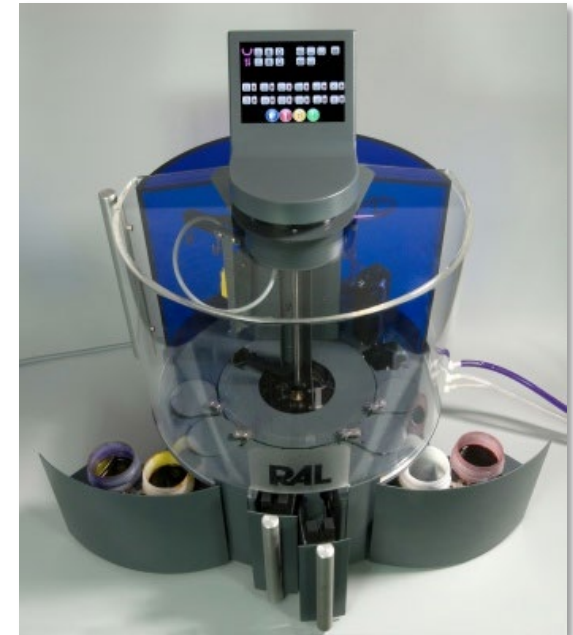
Competition: Hand Staining

- ◆ Inconsistent results
- ◆ More reagent consumption
 - ◆ More waste generated, cost of waste disposal.
- ◆ Time consuming (30-40 min)
- ◆ Contact with hazardous fumes and stain.
- ◆ Burns
- ◆ Requires a sink, some labs are not putting sinks in Bio-Level 3 labs, thus stainers are become a requirement for such labs.



Competition: Dip Staining

- ◆ Dip Stainers are not recommended for AFB staining because of cross-contamination issues.
 - ◆ Poorly fixed organisms easily wash off of one slide and are deposited onto another slide.
 - ◆ TB diagnosis can be made by viewing few organisms, therefore if cross contamination occurs it can lead to miss diagnosis.
- ◆ RAL Stainer
 - ◆ Recent exclusive OEM agreement with bioMérieux.
 - ◆ Cross-contamination (same batch for cultures and direct samples) has been reported by users. Even on first day of use.
 - ◆ Higher cost/slide (max 50 cycles/batch)
 - ◆ Limited choice of stains (thiazin red / cold Kinyoun)
 - ◆ Short stability (7 days) of fluorescence primary stain. Entire reagent kit must be replaced if stain is expired.
 - ◆ No cytocentrifuge.



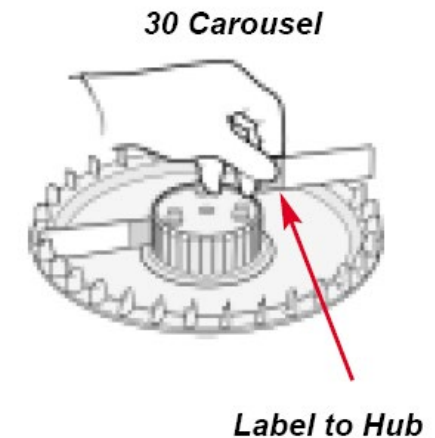
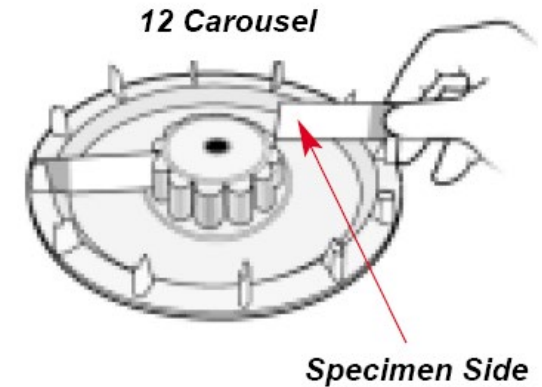
Competition: Dagatron Stainer

- ◆ Penetrating Asia Market.
- ◆ High cross-contamination slide chambers.
- ◆ Lack of reproducibility:
 - ◆ Incubation time differ first and last position.
 - ◆ No QC on reagent batches.
- ◆ Higher reagents consumption (1.8 mL per slide vs 0.25 mL on Aerospray TB).
- ◆ Longer cycles times (ZN = 15 min, limited to 10 slides and Fluorescence = 18 min vs 4-10 min for 30 slides on Aerospray TB).
- ◆ Intensities cannot be modified.
- ◆ Strong phenol fumes.
- ◆ CE-IVD Mark?
- ◆ Experience in services / maintenance?



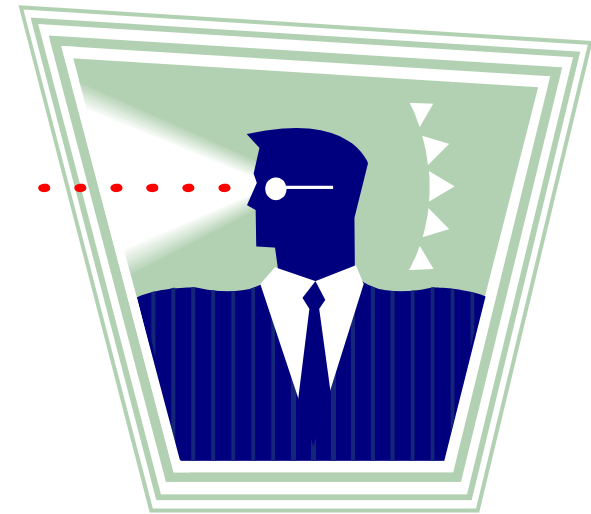
Advantages of Aerospray TB

- ◆ No Cross Contamination
- ◆ Faster (8 minutes vs 30-40 minutes), easier, cleaner, and more consistent than hand staining.
- ◆ Reagents are not exposed to environment as like hand staining.
- ◆ Economical, more slides with less stain.
- ◆ Stainer/Cytocentrifuge combination.
- ◆ Flexibility
 - ◆ Use either Carbol Fuchsin or Fluorescence reagents
 - ◆ Programing – Customize programing for optimal results.
 - ◆ 12 or 30 slide carousels.



Aerospray TB Market

- ◆ Large Hospitals
- ◆ Reference Laboratories
- ◆ Government Labs
- ◆ Research Universities
- ◆ Veterinary Labs



Market Development



- ◆ Contact NTP coordinators / FIND
 - ◆ List will be provided
- ◆ Contact TB partners to evaluate collaboration
<http://www.stoptb.org/countries/partnerships/>

Organization Name	Focal Point Email	Organization Phone
Lupin Limited	shrikantkulkarni@lupinpharma.com	+91-22-66402222
Universal Care Initiative for Tuberculosis Control (UCITC)	yatindholakia@gmail.com	91 22 26498051
Health & Development Initiative-India	dr.dineshkumar@gmail.com	+911832502511
Indian Railways Public Health Association	rajivkjain57@rediffmail.com	919910487408
Calyx Chemicals & Pharmaceuticals Pvt. Ltd.	prashant_ogale@calyxindia.com	9122-28571191

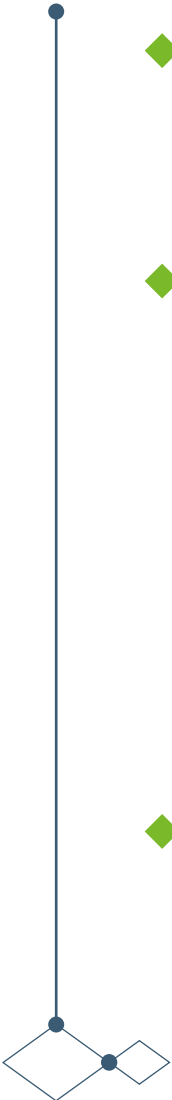
- ◆ Promote fluorescence staining to high throughput labs.
 - ◆ Eg. Primo star iLED microscopes (Ziess-\$1640) have been delivered to several Indian labs (approved FIND)
- ◆ When promoting Elite Ziehl Neelsen, do not specify on hot or cold method!



Market Development



- ◆ Present Aerospray TB (Model 7722) poster and white paper.
- ◆ Set up evaluation trials at main KOL labs around country
 - ◆ 40-60 positive sample for significant conclusion
 - ◆ On average 1 to 2 weeks evaluation
 - ◆ Publication?
- ◆ Do you have complementary solution in your current product portfolio?



Aerospray TB Success Stories



◆ South Korea

◆ Past situation

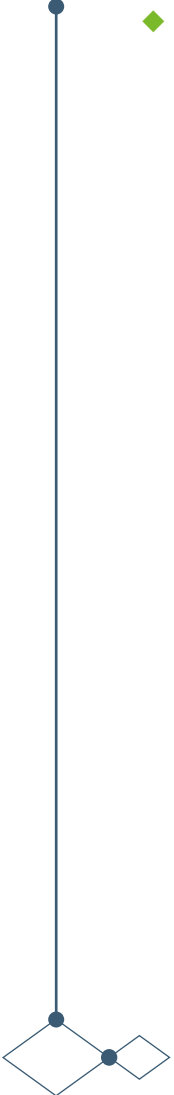
- ◆ Hot Ziehl neelsen golden standard
- ◆ Reagents supplied free of charge by government
- ◆ Re-imburement fee 1,2\$/test
- ◆ Yearly increasing amount of TB patients /low case detection

◆ Strategy

- ◆ Educate large/medium labs on EBS fluorescence TB stainer (5 times faster, 10% more sensitive, no toxic fumes)
- ◆ Work with KOL lab for evaluation study/publication
- ◆ Make it accessible for every customer by offering package with cheap UV LED module for microscopic interpretation (QBC)
- ◆ Work to increase re-imburement schedule

◆ Current situation

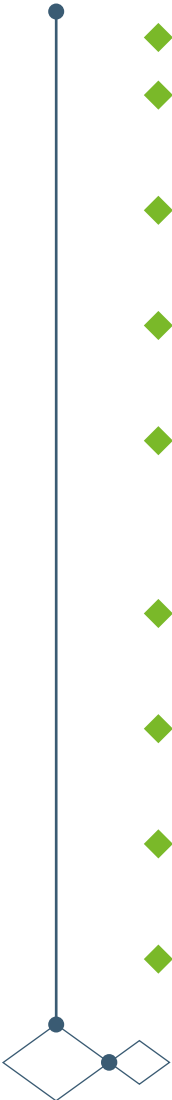
- ◆ 135 TB stainers installed (Through August 2014)
- ◆ 97% market share in South Korea
- ◆ Aerospray TB listed on South Korean TB testing guideline
- ◆ Increased re-imburement: 4,5\$/test



Question to Ask During Sales Visit

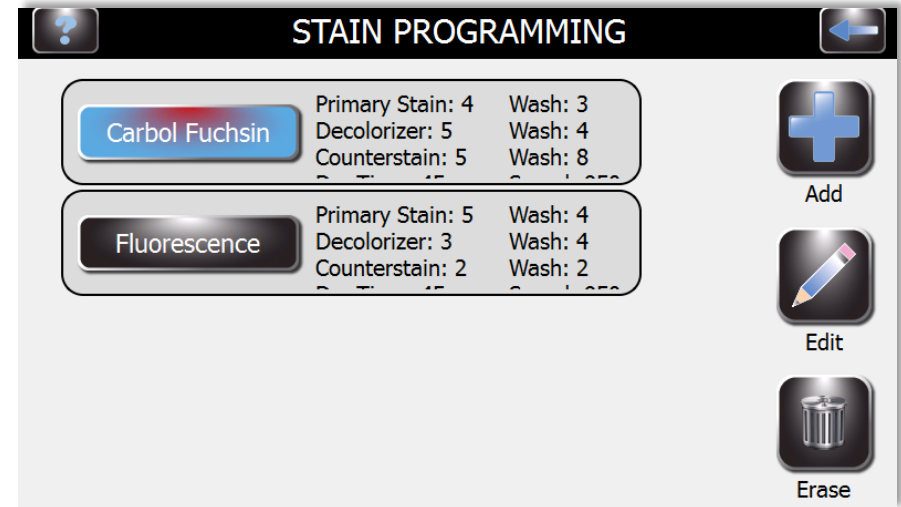


- ◆ How do you stain your AFB samples?
- ◆ What type of reagents your lab uses? (explain fluorescence, carbol fuchsin, different reagent types)
- ◆ How many samples does your lab stain/day? (explain reagent calculation tool website – economical benefits)
- ◆ Do you sometimes encounter problems with uniformity of slides? (explain Aerospray fully automated and standardized system)
- ◆ Does your lab follow safety regulations to prevent contact with toxic phenol / cross-contamination? (explain closed system, cold ziehl neelsen option, fresh reagent always applied)
- ◆ How do you treat your waste? (explain limited reagent consumption)
- ◆ How do you concentrate your samples, body fluids? (explain Cytopro Rotor option)
- ◆ Would you be interested in a dual purpose cost-efficient staining/cytocentrifugation system?
- ◆ How is re-imburement arranged (per test or global budget)?



Programming 7722

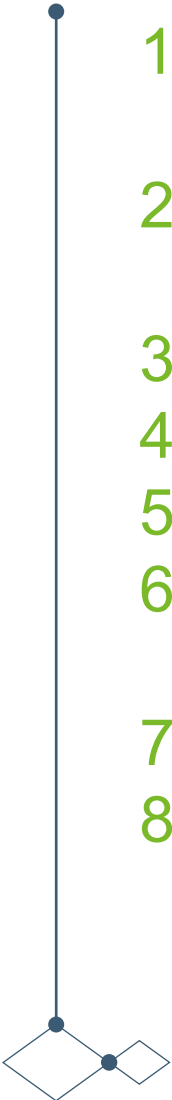
- ◆ Two Default Stain Programs:
 - ◆ Carbol Fuchsin
 - ◆ Fluorescence
- ◆ Two default programs are stored in device, each of these programs can be edited or erased. New programs can be added as needed.
- ◆ Customers will use only one Stain Type (either Carbol Fuchsin or Fluorescence) on the stainer depending on the reagents that are loaded on the stainer. Typically users will erase the default program that they does not correspond with their reagents.



Programming 7722



1. Heat fix slides on hot plate!!
2. Carbol Fuchsin (purple) or Fluorochrome (green/yellow)
3. Wash
4. Decolorizer
5. Wash
6. Counterstain Carbol Fuchsin (blue or green) or Counterstain Fluorescence (black)
7. Wash
8. Spin Dry



Programming 7722



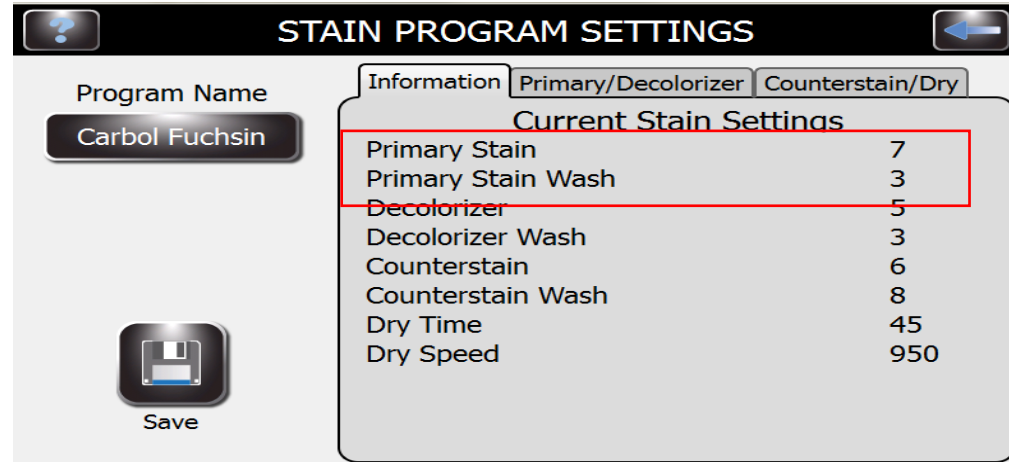
- ◆ Each default program is a combination of several parameters that can be modified.
- ◆ Primary stain: brightness AFB bacilli
- ◆ Primary wash: only adjust if customer wants cleaner slides
- ◆ Decolorizer: washes out primary stain of background and non AFB
- ◆ Decolorizer wash: for an even decolorization across the slide
- ◆ Counterstain: increase background for better contrast
- ◆ Counterstain wash: only adjust if customer wants cleaner slides
- ◆ Dry time: reduce in case cell wash off occurs
- ◆ Dry speed: reduce in case cell wash off occurs
- ◆ Increase or decrease per 2 step
- ◆ Only adjust one setting at the time



Programming 7722



◆ Default setting:



Primary Stain Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Primary Stain, total number of applications per slide	0	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
Primary Stain, total wait time (sec.)	0	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180

Primary Wash Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Primary Wash, applications per slide	0	2	4	7	10	12	14	16	18	20	22	24	26	28	30	32

Decolorizer Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Decolorizer, total number of applications per slide	0	2	2	3	3	4	5	6	7	8	9	10	11	12
Decolorizer, total wait time (sec.)	0	0	6	6	12	18	24	30	36	42	48	54	60	66

Programming 7722



◆ Default setting:

?
STAIN PROGRAM SETTINGS
←

Program Name
Information Primary/Decolorizer Counterstain/Dry

Carbol Fuchsin

Current Stain Settings

Primary Stain	7
Primary Stain Wash	3
Decolorizer	5
Decolorizer Wash	3
Counterstain	6
Counterstain Wash	8
Dry Time	45
Dry Speed	950

Save

Decolorizer Wash Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Decolorizer Wash, applications per slide	0	2	4	7	10	12	14	16	18	20	22	24	26	28	30	32

Counterstain Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Counterstain, total number of applications per slide	0	2	2	3	3	4	5	6	7	8	9	10	11	12	13	14
Counterstain, total wait time (sec.)	0	0	6	6	12	18	24	30	36	42	48	54	60	66	72	78

Counterstain Wash Setting	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Counterstain Wash, applications per slide	0	2	4	7	10	12	14	16	18	20	22	24	26	28	30	32

Dry Time Options (seconds)	0	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	110	120
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Dry Speed Options (rpm)	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
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Programming 7722



STAIN PROGRAMMING

Carbol Fuchsin	Primary Stain: 7 Decolorizer: 5 Counterstain: 6 Dry Time: 45	Wash: 3 Wash: 3 Wash: 8 Speed: 950
Fluorescence	Primary Stain: 5 Decolorizer: 3 Counterstain: 2 Dry Time: 45	Wash: 4 Wash: 4 Wash: 2 Speed: 950

Add
 Edit
 Erase

STAIN PROGRAM SETTINGS

Program Name: **Carbol Fuchsin**

Information | Primary/Decolorizer | Counterstain/Dry

Current Stain Settings

Primary Stain	7
Primary Stain Wash	3
Decolorizer	5
Decolorizer Wash	3
Counterstain	6
Counterstain Wash	8
Dry Time	45
Dry Speed	950

Save

STAIN PROGRAM SETTINGS

Program Name: Carbol Fuchsin

Information | Primary/Decolorizer | Counterstain/Dry

Primary Stain	7
Primary Stain Wash	3
Decolorizer	5
Decolorizer Wash	3

Save

STAIN PROGRAM SETTINGS

Program Name: Carbol Fuchsin

Information | Primary/Decolorizer | Counterstain/Dry

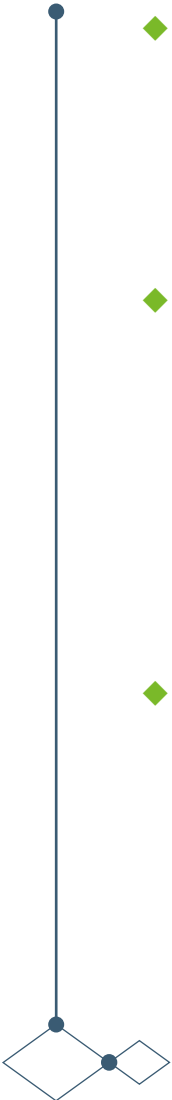
Counterstain	6
Counterstain Wash	8
Dry Time	45
Dry Speed	950

Save

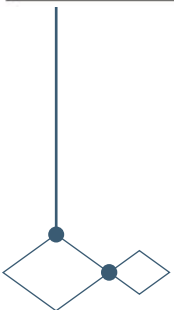
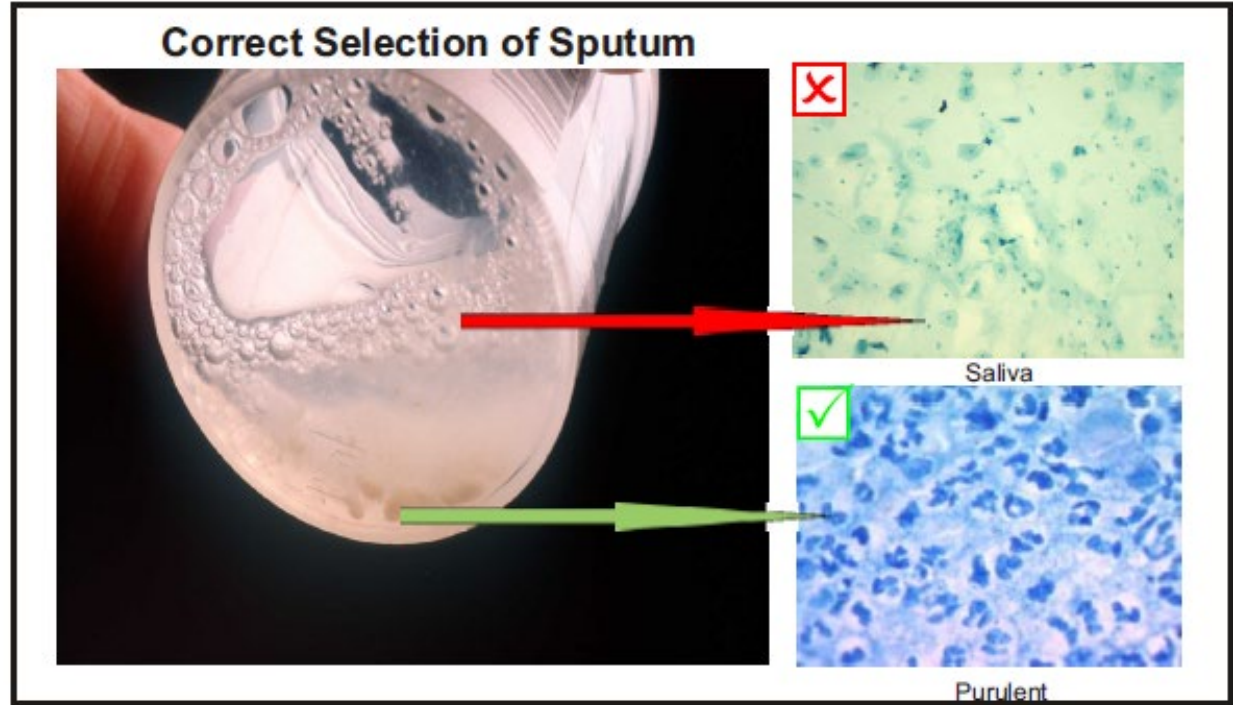
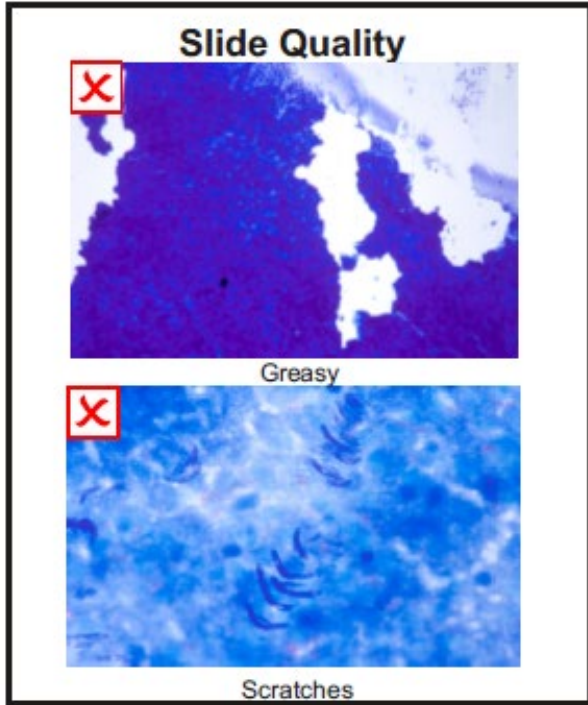
Performing a Successful Demonstration



- ◆ **Prospection:**
 - ◆ Well understand customer TB sample preparation protocol (decontamination, concentration, fixation, staining method)
 - ◆ Present CytoPro Rotor for standardized sample preparation
- ◆ **Demo preparation:**
 - ◆ Ask customer to prepare samples. Record 'abnormal' characteristics before staining.
 - ◆ Always Include SS-249 Control slides
 - ◆ Always keep Mycohold (SS-061M) as a back-up during demo.
 - ◆ Consult manual for TB stainer, particularly Appendix E (Sample/Slide Preparation)
- ◆ **Actual demo:**
 - ◆ Start with default program (carbol fuchsin ≠ fluorescence)
 - ◆ Demo CytoPro Rotor



Performing a Successful Demonstration



Performing a Successful Demonstration



Smear Thickness

Checking of smear thickness

Too thick

Correct

Too thin

Smear Size

Too large

Too small

Multiple

Correct

Correct smears

Air Drying and Fixation

Boiling of smear

Wet smear fixation

Over heating

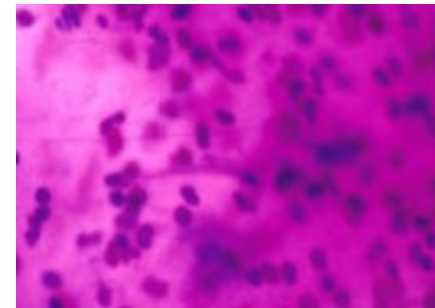
Correct

Performing a Successful Demonstration

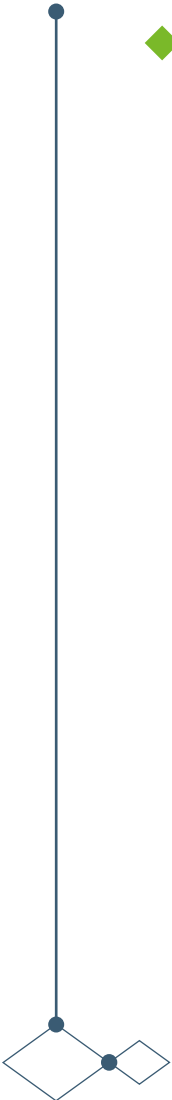


◆ Case study 1: Question

- ◆ The Erasmus hospital in Belgium evaluated the Aerospray TB. They used carbol fuchsin staining with methylene blue as counterstain. They obtained the following stain result



- ◆ What can cause the slide look like this?
- ◆ How can we modify Aerospray TB Series 2 settings to meet the customer need?

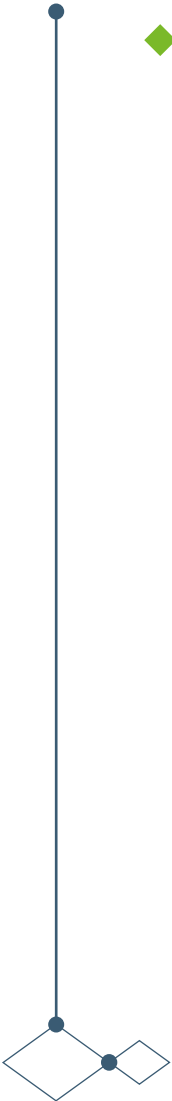


Performing a Successful Demonstration



◆ Case study 2: Question

- ◆ The Kuo Lab in Taiwan evaluated the Aerospray TB. They used fluorescence stains. When observing the slide they noticed a part of the slide lost cells.
- ◆ What can cause the cells wash off the slide?
- ◆ What solutions can we offer?
- ◆ How can we modify Aerospray TB Series 2 settings to reduce risk of cell wash off?



Performing a Successful Demonstration



◆ Case study 1: Answer

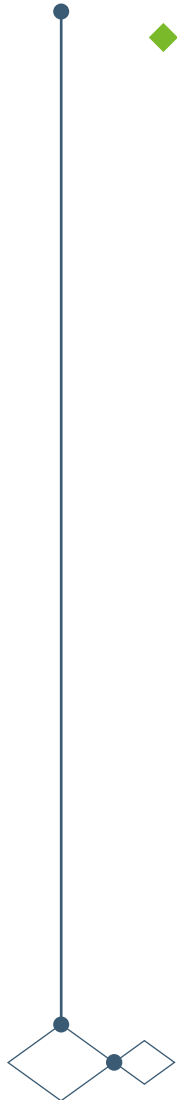
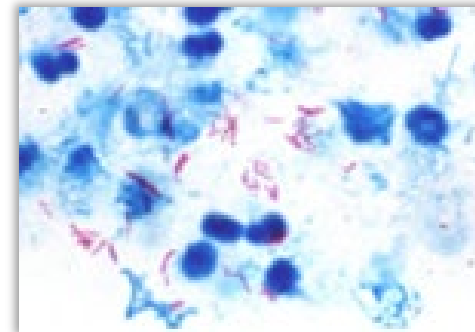
◆ Under-decolorization due to incomplete removal of primary stain.

◆ Causes:

- ◆ A blocked nozzle or nozzle not spraying properly, perform Hub pattern test.
- ◆ Decolorizer (A reagent) volume not adequate, perform Volume test.
- ◆ Primary Stain (C reagent) applying too much volume, check nozzle volume.
- ◆ Smear too thick
- ◆ Slides not placed in correct location in carousel

◆ Corrections

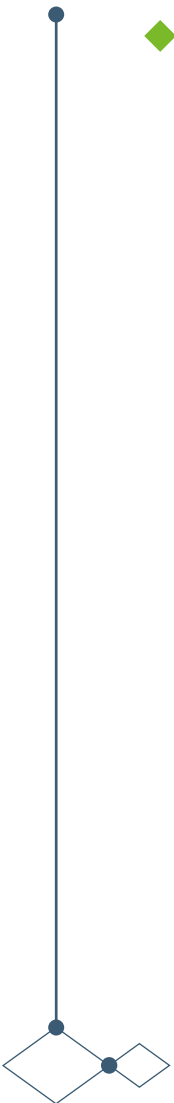
- ◆ Increase decolorizer setting by 2 settings, stain again.
- ◆ If not ok, decrease primary stain by 2 settings, stain again.
- ◆ Possibly adjust decolorizer washing step



Performing a Successful Demonstration



- ◆ Case study 2: Answer
 - ◆ Causes: Fixation problem. Customer fixed the slide by flame only? Additionally smears were prepared too thick
 - ◆ Overall solutions to ensure proper fixation
 - ◆ Heat 2 hours at 70°C or 15min at 80°C on hot plate
 - ◆ If not sufficient use Mycohold SS-061M (protocol on FTP or USB)
 - ◆ Prepare equally thin smears
 - ◆ Ensure slides are not dirty /greasy, dip in methanol or ethanol prior to smearing specimen on slide.
 - ◆ Decrease dry time and dry speed



An Aerospray AFB Stain is a Beauty to Behold.



- ◆ **Ensure device and nozzles are cleaned properly!**
- ◆ Series 1: clean after every run or when the device is idle > 4 hours – ‘CLEAN TO REPRIME’ without samples inside
- ◆ Series 2: System clean once device is idle > 4 hours and at end of working day.
- ◆ Monthly flush of B and C nozzle with SS-266 solution soak for 1 hour or overnight.
- ◆ Series 2: Two spare nozzles in kit

