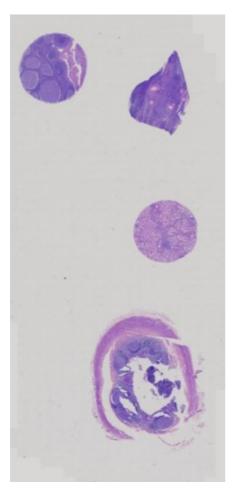
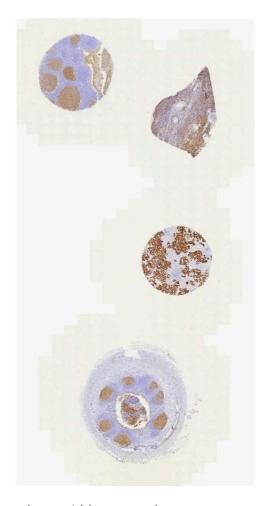


CD10



HE staining in scanner view.



Immunostaining, scanner view

Provided sections in this run:

TISSUE	PROPORTION	INTENSITY
Tonsil	Intense staining of practically all the germinal center cells. The paracortical cells do not stain. Morphology should be well preserved.	Intense
Follicular Lymphoma	An at least weak to moderate staining reaction of the vast majority of neoplastic cells of the follicular lymphoma.	Intense
Kidney	A moderate to strong, predominantly membranous but also cytoplasmic staining reaction of virtually all the epithelial cells in the renal proximal tubules and the parietal layer of the Bowman's capsule.	Intense
Appendix	Intense membranous and cytoplasmic staining of intraepithelial lymphocytes, lymphocytes in the interfollicular region and few T cells in the germinal center.	Intense



Performance characteristic of the group:

N	34
MEDIAN OVERALL SCORE	54
AVERAGE OVERALL SCORE	41

Criteria for assessment:

	Optimum	Good	Borderline	Poor
Overall score	>59	55-59	49-54	<49

Break up of results

Result	Participants
Optimum	22
Good	8
Borderline	0
Poor	4
Section not submitted	10

Break up of results based on technique

Result Technique	Optimum	Good	Borderline	Poor	Total
Manual	16	3	0	0	19
Automated	0	1	0	1	2
Automated Ventana Bench Mark XT	3	3	0	0	6
Automated Ventana Benchmark Ultra	0	0	0	1	1
Automated, Ventana Benchmark GX	0	1	0	1	2
Automated, Ventana Medical systems, Inc., Roche Diagnostics	1	0	0	1	2
NA	2	0	0	0	2



Clones used in the run by participants

Clone	Participants Participants
56C6	14
ММЕР	1
NA	4
NEPP	6
SP67	7
MD182	1
GM003	1

Break up of results based on the clones used

Clone	Result	Optimum	Good	Borderline	Poor	Section not submitte d	Total
56C6		10	3	0	1	0	14
MMEP		0	1	0	0	0	1
NA		4	0	0	0	0	4
NEPP		5	0	0	1	0	6
SP67		2	3	0	2	0	7
MD182		0	0	0	0	1	1
GM003		1	0	0	0	0	1



Break up of results based on the vendors

Result Vendor	Optimum	Good	Borderline	Poor	Total
BIOCARE MEDICAL , CM129AKBKCK	0	1	0	0	1
BIOCARE MEDICALS	1	0	0	0	1
BIOCARE PM129AA	1	0	0	0	1
BiogeneX AM451-5M	1	0	0	0	1
Cell Marque Cat 110M-16-RUO	1	0	0	0	1
Dako, IS648	1	0	0	0	1
MASTER DIAGNOSTIC, 002022QD	3	0	0	0	3
Master Diagnostica	0	1	0	0	1
Master Diagnostica; MAD002022QDR-7	1	0	0	0	1
Master diagnostics, 002022QD-R-3	0	0	0	1	1
MEDAYSIS	0	0	0	0	0
NA	2	0	0	0	2
Pathnsitu	2	0	0	1	3
PathnSitu MM1245	1	1	0	0	2
PathnSitu, catalogue number: PM150	1	0	0	0	1
PathnSitu; MR1288	3	0	0	0	3
Quartette	2	0	0	0	2
Ventana	0	1	0	1	2
Ventana 7904506	2	2	0	1	5
Ventana, CKM008	0	1	0	0	1
Zeta Corporation, 20012205B	0	1	0	0	1



Break up of results based on format

Result Format	Optimum	Good	Borderline	Poor	Section not submitte d	Total
Concentrated.	18	7	0	4	1	30
RTU	2	1	0	0	0	3
NA	2	0	0	0	0	2

Break up of results based on temperature of dewaxing

Result Dewax Minutes	Optimum	Good	Borderline	Poor	Section not submitte d	Total
37	1	0	0	0	0	1
>75	0	0	0	0	0	0
55-60	6	1	0	1	0	8
61-65	7	2	0	0	0	9
66-70	2	0	0	0	1	3
71-75	2	4	0	2	0	8
NA	2	1	0	0	0	3
RT	1	0	0	0	0	1



Break up of results based on pH of retrieval buffer

pH	sult	Optimum	Good	Borderline	Poor	Section not submitte d	Total
6.0-6.9		3	1	0	0	0	4
7.0-8.0		2	2	0	0	0	4
8.1-9.0		14	4	0	4	1	23
>9.0		0	0	0	0	0	0
NA		2	1	0	0	0	3

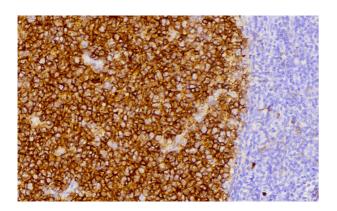
Break up of results based on incubation time of primary antibody

Result Time in minutes	Optimum	Good	Borderline	Poor	Section not submitte d	Total
<15	0	0	0	0	0	0
15-30	7	0	0	0	0	7
31-45	2	4	0	3	0	9
46-60	11	4	0	0	1	16
NA	2	1	0	0	0	3

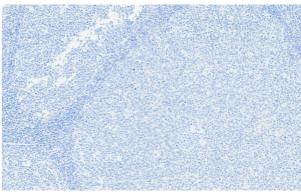


Clone	VARIABLE	1	2	3
Clone 56C6 56C6 56C6 Wendor Master diagnostic MAD-002022QDE-R-3 Dako, IS648 Master Diagnostica; MAD002022QDE-7 Format RTU RTU RTU Batch/Year 20220036S 20047910 20220038S, 2022 Expiry 09/2023 May-23 31-10-2023 Dewaxing temperature 65 degree 65 degree celsius room temp in milk Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Enzyme Not applicable HIER Micro wave Pressure cooker Ventana CC1 mild Peak T and Time 98 degree 20 minutes 300 W, 15 min As per Ventana automated onotocol. Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated onotocol. Peak Pressure and Time 10 house Envision Flex Target Retrieval solution. Hich ph. 10 Also. Ventana CC1 mild PbH EDTA Buffer pH 9.0 pH 9.0 9H 9.0 8.4 Ventana CC1 mild Wash sol TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako. 10 Er prep	Technique	Manual Technique	Mnual	
MAD-0020220D-R-3 RTU	Clone	56C6	56C6	
Format RTU RTU RTU RTU Batch/Year 20220036S 20047910 20220036S, 2022 Expiry 09/2023 May-23 31-10-2023 Dewaxing temperature 65 degree 65 degree celsius room temp in milk Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Enzyme Not applicable HIER Micro wave Pressure cooker Ventana CC1 mild Peak T and Time 98 degree 20 minutes 300 W, 15 min As per Ventana automated nordrocol Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated nordrocol Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated nordrocol Retrieval Buffer In house Envision Flex Target Retrieval solution. High ph 10 decidence and ph 10 decid	Vendor		Dako, IS648	
Expiry 09/2023 May-23 31-10-2023 Dewaxing temperature 65 degree 65 degree celsius room temp in milk Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Micro wave Pressure cooker Ventana CC1 mild Peak T and Time 98 degree 20 minutes 300 W, 15 min As per Ventana automated protocol Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated protocol Peak Pressure and Time In house Envision Flex Target Retrieval solution. High pH EDTA Buffer pH 9.0 pH 9.0 8.4 Blocking 3 % Hydrogen peroxide with methanol 15 minutes TBST buffer pH 7.4 Envision Flex Peroxidase-blocking reagent. Dako. 10 EZ prep Dako (Tris buffered saline) Dilution of RTU Yes, 20x No Dilution of RTU Yes, 20x No Dilution of Conc - NA Inc time of Primary 30 minutes 1 hr 1 hour Detection Polymer based system Polymer based system Ventana ultraview kit (760-500).	Format		RTU	
Dewaxing temperature 65 degree 65 degree celsius room temp in milk Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Micro wave Pressure cooker Ventana CC1 mild Peak T and Time 98 degree 20 minutes 300 W, 15 min As per Ventana automated notocol Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated notocol Retrieval Buffer In house Envision Flex Target Retrieval solution. High pH Dako pH EDTA Buffer pH 9.0 pH 9.0 B.4 Blocking 3 % Hydrogen peroxide with methanol 15 minutes blocking reagent. Dako 10 methanol 15 minutes blocking reagent. Dako 10 methanol 15 minutes blocking rise wash Buffer, Dako (Tris buffered saline) Wash sol TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) Yes, 20x No Dilution of RTU Yes, 20x No Dilution of conc In hour Dilution of Primary 30 minutes 1 hr 1 hour Petection Polymer based system Polymer based system Ventana ultraview kit (760-500) Master Polymer plus detection system (Peroxidase) Batch no. 41293165 K8000 Jo minutes 30 minutes 20 m	Batch/Year	20220036S	20047910	20220038S, 2022
Retrieval HIER EDTA Buffer pH 9.0 HIER HIER Enzyme	Expiry	09/2023	May-23	31-10-2023
Enzyme	Dewaxing temperature	65 degree	65 degree celsius	room temp in milk
HIER Micro wave Pressure cooker Ventana CC1 mild Peak T and Time 98 degree 20 minutes 300 W, 15 min As per Ventana automated protocool Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated protocool Retrieval Buffer In house Envision Flex Target Retrieval Ventana CC1 mild solution. High pH EDTA Buffer pH 9.0 pH 9.0 B.4 Blocking 3 % Hydrogen peroxide with methanol 15 minutes blocking reagent. Dako. 10 Wash sol TBST buffer pH 7.4 Envision Flex Peroxidase-blocking reagent. Dako. 10 Envision Flex Wash Buffer, Dako (fris buffered saline) Yes, 20x No Dilution of RTU Yes, 20x No Dilution of conc In hour Dilution of conc In hour Dilution of Primary 30 minutes 1 hr 1 hour Detection Polymer based system Polymer based system Ventana ultraview kit (750.500) Master Polymer plus defection system (Peroxidase) 30 min 30 minutes 1 for including the protocolor of the polymer plus defection system (Peroxidase) 30 min 30 minutes 30 minutes 30 minutes 20 minutes 30 m	Retrieval	HIER EDTA Buffer pH 9.0	HIER	HIER
Peak T and Time 98 degree 20 minutes - As per Ventana automated profocol Retrieval Buffer In house Envision Flex Target Retrieval solution. High pH. Dako pH EDTA Buffer pH 9.0 Blocking 3 % Hydrogen peroxide with methanol 15 minutes TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako 10 Envision Flex Wash Buffer, Dako 10 Expression Flex Wash Buffer, Dako 10 Find time of Primary Detection Polymer based system Polymer based system Polymer based system Master Polymer plus defection system (Peroxidase) Batch no. 41293165. K8000 As per Ventana automated profocol As per Ventana automated profocol Pontana CC1 mild Ventana CC1 mild Ventana CC1 mild Ventana ultraview inhibitor B.4. No No No No In the profocol Polymer based system Cat No Master Polymer plus defection system (Peroxidase) Batch no. 41293165. K8000 Inc time of Sec	Enzyme		-	Not applicable
Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated protocol As per Ventana automated protocol As per Ventana automated protocol Ventana CC1 mild Solution Flex Target Retrieval Solution Flex Target Retrieval Solution Flex Peroxidase- Blocking 3 % Hydrogen peroxide with methanol 15 minutes Blocking TBST buffer pH 7.4 Envision Flex Peroxidase- Blockina reagent. Dako. 10 Envision Flex Wash Buffer, Dako. 10 Exprep Dako. (Tris buffered saline) Ventana ultraview inhibitor Buffer ph 7.4 Envision Flex Peroxidase- Blockina reagent. Dako. 10 Exprep Dako. (Tris buffered saline) Ventana ultraview inhibitor Buffer ph 7.4 Exprep No No No Dilution of RTU Yes, 20x No NA Inc time of Primary 30 minutes 1 hr 1 hour Ventana ultraview kit (760-500)	HIER	Micro wave	Pressure cooker	Ventana CC1 mild
Peak Pressure and Time 98 degree 20 minutes - As per Ventana automated protocol Ventana CC1 mild Ventana CC1 mild Ph EDTA Buffer pH 9.0 Blocking 3 % Hydrogen peroxide with methanol 15 minutes TBST buffer pH 7.4 Envision Flex Peroxidase-blocking reagent. Dako. 10 Envision Flex Wash Buffer, Dako. 10 Envision Flex Wash Buffer, Dako. 10 Envision Flex Wash Buffer, Dako. 10 Expression Flex Wash Buffer, Dako. 10 For Dako. Tris buffered salinel Yes, 20x No Dilution of conc Dilution of conc Dilution of Primary 30 minutes 1 hr 1 hour Polymer based system Polymer based. System Polymer based. System Polymer based. System Polymer based. System Ventana ultraview kit (760-500)	Peak T and Time	98 degree 20 minutes	300 W, 15 min	
solution High pH Dako pH EDTA Buffer pH 9.0 pH 9.0 8.4 Blocking 3 % Hydrogen peroxide with methanol 15 minutes blocking reagent. Dako 10 Wash sol TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) Pillution of RTU Yes, 20x No Dilution of conc NA Diluent 0 - NA Inc time of Primary 30 minutes 1 hr 1 hour Detection Polymer based system Polymer based system Ventana ultraview kit (760-500) Cat No Master Polymer plus detection system (Peroxidase) 30 min 30 min Locatine of Sec 30 minutes 30 minutes 30 min 30 min	Peak Pressure and Time	98 degree 20 minutes	-	As per Ventana automated
Blocking 3 % Hydrogen peroxide with methanol 15 minutes blocking reagent. Dako. 10 Wash sol TBST buffer pH 7.4 Envision Flex Peroxidase-blocking reagent. Dako. 10 Envision Flex Wash Buffer, Dako (Tris buffered saline) Pollution of RTU Yes, 20x No Dilution of conc NA Diluent 0 - NA Inc time of Primary 30 minutes 1 hr 1 hour Detection Polymer based system Polymer based system Ventana ultraview kit (760-500) Cat No Master Polymer plus detection system (Peroxidase) Batch no. 41293165. K8000. Jectime of Sec 30 minutes 30 min 30 min 30 min	Retrieval Buffer	In house		Ventana CC1 mild
methanol 15 minutes blocking reagent. Dako. 10 TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) Pes, 20x No Dilution of RTU Test ph 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) Yes, 20x No No Dilution of conc Test prep No No No No Dilution of conc Test puffer pH 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) No No No Dilution of conc Test prep No No No No Dilution of conc Test prep No No No No No Inc time of Primary Test prep No No No No No No No No No N	На	EDTA Buffer pH 9.0	pH 9.0	8.4
Wash sol TBST buffer pH 7.4 Envision Flex Wash Buffer, Dako (Tris buffered saline) Yes, 20x No Dilution of conc Diluent 0 Inc time of Primary Polymer based system Ventana ultraview kit (760-500)	Blocking			Ventana ultraview inhibitor
Dilution of conc Diluent O Inc time of Primary Detection Polymer based system Polymer based system Polymer based system Polymer based system Ventana ultraview kit (760-500) Cat No Master Polymer plus detection system (Peroxidase) Batch no. 41293165. K8000. 30 min To include the control of th	Wash sol	TBST buffer pH 7.4	· · · · · · · · · · · · · · · · · · ·	EZ prep
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Detection Polymer based system Polymer based system Ventana ultraview kit (760-500) Cat No Master Polymer plus detection system (Peroxidase) Inc time of Sec Polymer based system Ventana ultraview kit (760-500)	Diluent	0	-	NA
Cat No Master Polymer plus detection system (Peroxidase) Inc time of Sec Master Polymer plus detection system (Peroxidase) Batch no. 41293165 K8000. 30 min To include (760-500) Ventana ultraview kit (760-500). Ventana. cat no 30 min	Inc time of Primary	30 minutes	1 hr	1 hour
Cat No Master Polymer plus detection system (Peroxidase) Inc time of Sec Master Polymer plus detection system (Peroxidase) Batch no. 41293165. K8000. 30 min Ventana ultraview kit (760-500). Ventana. cat no 30 min	Detection	Polymer based system	Polymer based system	
Inc time of Sec 30 minutes 30 min 30 min	Cat No			Ventana ultraview kit
Chro-substrate 4-6 minutes 10 min 7 min	Inc time of Sec			
	Chro-substrate	4-6 minutes	10 min	7 min
Post-treatment No No	Post-treatment		No	No
Counterstain Hematoxylin Haematoxylin Hematoxylin	Counterstain	Hematoxylin	Haematoxylin	Hematoxylin

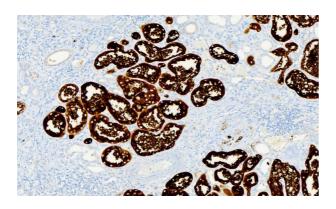




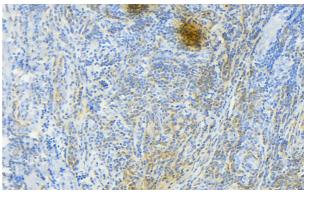
Optimum staining of germinal center B cells of Tonsil. The cells outside the germinal center are unstained. Note the sharp boundary of staining and preserved morphology.



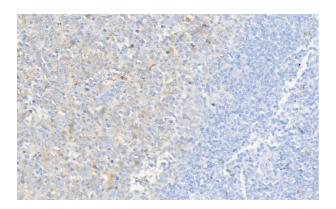
Suboptimal staining due to unsuccessful antibody and less than 15 minutes of incubation time of primary antibody. The germinal center cells are completely unstained. Compared with the optimal staining.



Optimum staining of renal tubules. However, it is too intense that blurs the cytological details. Post-staining step can be avoided to achieve optimum cellular details.



Same case as the above that shows weak intensity staining. Note the blotches of stain that is generally due to inappropriate HIER and poor wash cycles.



Suboptimal staining in a participant using unsuccessful antibody clone. Note the weak staining of germinal center cells.