



## Listing and evaluation of the results

1: Dr. med.Max Mustermann  
Laboratory Mustermann

Survey of 21 April 2023

**Adviser:**

**Dr.-Ing. Nils Lachmann**

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440

### HLA Diagnostics 01 - HLA-B27 Determination

Analyte	Sam- ple	Method	Your specification(s)	Correct specification(s)	TV- Type	Meets criteria
Determination of HLA-B27	1	molecular genetics (PCR)	positive (3)	positive (3)	SV	+
	2		negative (1)	negative (1)	SV	+
	3		negative (1)	negative (1)	SV	+
	4		positive (3)	positive (3)	SV	+
	5		negative (1)	negative (1)	SV	+

Additional information on the evaluation is available for download in the RV-Online system in the column "Report".



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441

### HLA Diagnostics 02 - HLA Typing Class I and II of Serological Equivalents

Analyte	Sam- ple	Method	Your specification(s)	Correct specification(s)	TV- Type	Meets criteria
HLA-class I (HLA-A)	(1) 6	serologic + DNA analysis	1, 11	1, 11	SV	+
	(1) 7		2, 30	2, 30	SV	+
	(1) 8		2, 24	2, 24	SV	+
	(1) 9		2	2	SV	+
	(1) 10		1, 33	1, 33	SV	+
HLA-class I (HLA-B)	(1) 6	serologic + DNA analysis	7, 8	7, 8	SV	+
	(1) 7		13, 38	13, 38	SV	+
	(1) 8		13, 60	13, 60	SV	+
	(1) 9		7, 44	7, 44	SV	+
	(1) 10		8, 58	8, 17, 58	SV	+
HLA-class II (HLA-DR)	(2) 6	serologic + DNA analysis	17, 11	17, 11	SV	+
	(2) 7		13, 7	13, 7	SV	+
	(2) 8		13, 7	13, 7	SV	+
	(2) 9		15	15	SV	+
	(2) 10		1, 13	1, 13	SV	+
HLA-class II (HLA-DQ)	(2) 6	serologic + DNA analysis	2, 7	2, 7	SV	+
	(2) 7		6, 2	6, 2	SV	+
	(2) 8		6, 2	6, 2	SV	+
	(2) 9		6	6	SV	+
	(2) 10		5, 6	5, 6	SV	+

\*\* BRAVO \*\*

(1) Set value corresponds to 75% consensus. To obtain the certificate "HLA Class I (HLA-A, HLA-B)", at least 2 of the possible 2 allele must be correctly determined, your number is 2.

(2) Set value corresponds to 75% consensus. To obtain the certificate "HLA Class II (HLA-DR,HLA-DQ)", at least 2 of the possible 2 allele must be correctly determined, your number is 2.

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444

### HLA Diagnostics 05 - High resolution, molecular HLA typing class I and II

Analyte	Sample	Method	Your specification(s)	Correct specification(s)	TV-Type	Meets criteria
HLA-A typing of DNA (high resolution)	16	NGS	A*32:01:01	A*32:01:01G	SV	+
	17		A*02:01:01,*03:01:01	A*02:01:01G,*03:01:01G	SV	+
	18		A*24:02:01,*32:01:01	A*24:02:01G,*32:01:01G	SV	+
	19		A*01:01:01,*11:01:01	A*01:01:01G,*11:01:01G	SV	+
	20		A*02:01:01,*02:17:02	A*02:01:01G,*02:17:02	SV	+
HLA-B typing of DNA (high resolution)	16	NGS	B*07:02:01,*57:03:01	B*07:02:01G,*57:03:01G	SV	+
	17		B*07:02:01,*44:27:01	B*07:02:01G,*44:27:01	SV	+
	18		B*07:02:01,*40:02:01	B*07:02:01G,*40:02:01G	SV	+
	19		B*08:01:01,*55:01:01	B*08:01:01G,*55:01:01G	SV	+
	20		B*15:01:01,*51:01:01	B*15:01:01G,*51:01:01G	SV	+
HLA-C typing of DNA (high resolution)	16	NGS	C*07:01:02,*07:02:01	C*07:01:02G,*07:02:01G	SV	+
	17		C*07:02:01,*07:04:01	C*07:02:01G,*07:04:01G	SV	+
	18		C*02:02:02,*07:02:01	C*02:02:02G,*07:02:01G	SV	+
	19		C*03:03:01,*07:01:01	C*03:03:01G,*07:01:01G	SV	+
	20		C*03:04:01,*15:02:01	C*03:04:01G,*15:02:01G	SV	+
HLA-DRB1 typing of DNA (high resolution)	16	NGS	DRB1*07:01:01,*15:01:01	DRB1*07:01:01G,*15:01:01G		+
	17		DRB1*04:01:01,*16:01:01	DRB1*04:01:01G,*16:01:01G		+
	18		DRB1*11:04:01,*15:01:01	DRB1*11:04:01G,*15:01:01G		+
	19		DRB1*03:01:01,*15:01:01	DRB1*03:01:01G,*15:01:01G		+
	20		DRB1*04:01:01,*09:01:02	DRB1*04:01:01G,*09:01:02G		+
HLA-DRB 3/4/5 DNA-Typisierung (high resolution)	(1) 16	NGS	DRB4*01:03:01,DRB5*01:01:01	DRB4*01:03:01G,DRB5*01:01:01G		+
	(1) 17		DRB4*01:03:01,DRB5*02:02:01	DRB4*01:03:01G,DRB5*02:02:01G		+
	(1) 18		DRB3*02:02:01,DRB5*01:01:01	DRB3*02:02:01G,DRB5*01:01:01G		+
	(1) 19		DRB3*01:01:02,DRB5*01:01:01	DRB3*01:01:02G,DRB5*01:01:01G		+
	20		DRB4*01:03:01,DRB4*01:03:02	DRB4*01:03:01G,DRB4*01:03:02G		+
HLA-DQA1 typing of DNA (high resolution)	16	NGS	DQA1*01:02:01,*02:01:01	DQA1*01:02:01G,*02:01:01G		+
	17		DQA1*01:02:02,*03:03:01	DQA1*01:02:02G,*03:03:01G		+
	18		DQA1*01:02:01,*05:05:01	DQA1*01:02:01G,*05:05:01G		+
	19		DQA1*01:02:01,*05:01:01	DQA1*01:02:01G,*05:01:01G		+
	20		DQA1*03:01:01,*03:02:01	DQA1*03:01:01G,*03:02:01G		+
HLA-DQB1 typing of DNA (high resolution)	16	NGS	DQB1*03:03:02,*06:02:01	DQB1*03:03:02G,*06:02:01G		+
	17		DQB1*03:01:01,*05:02:01	DQB1*03:01:01G,*05:02:01G		+
	18		DQB1*03:01:01,*06:02:01	DQB1*03:01:01G,*06:02:01G		+
	19		DQB1*02:01:01,*06:02:01	DQB1*02:01:01G,*06:02:01G		+
	20		DQB1*03:02:01,*03:03:02	DQB1*03:02:01G,*03:03:02G		+
HLA-DPB1 typing of DNA (high resolution)	16	NGS	DPB1*03:01P,*04:02P	DPB1*03:01:01G,*04:02:01G		+
	17		DPB1*02:01:02,*23:01:01	DPB1*02:01:02G,*23:01:01G		+
	18		DPB1*04:02P,*11:01P	DPB1*04:02:01G,*11:01:01G		+
	19		DPB1*02:01:02,*04:01:01	DPB1*02:01:02G,*04:01:01G		+
	20		DPB1*04:01P,*05:01P	DPB1*04:01:01G,*05:01:01G		+



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Analyte	Sample	Method	Your specification(s)	Correct specification(s)	TV-Type	Meets criteria
HLA-DPA1 typing of DNA (high resolution)	16	NGS	DPA1*01:03:01,*02:02:02	DPA1*01:03:01G,*02:02:02G		+
	17		DPA1*01:03:01	DPA1*01:03:01G		+
	18		DPA1*01:03:01,*02:01:01	DPA1*01:03:01G,*02:01:01G		+
	19		DPA1*01:03:01	DPA1*01:03:01G		+
	20		DPA1*01:03:01,*02:01:01	DPA1*01:03:01G,*02:01:01G		+
HLA-B 57:01 typing of DNA	16	NGS	negative	negative	SV	+
	17		negative	negative	SV	+
	18		negative	negative	SV	+
	19		negative	negative	SV	+
	20		negative	negative	SV	+
HLA-DRB1 typing of DNA (Shared Epitope)	16	NGS	no Epitopes	no Epitopes	SV	+
	17		04-QKRAA	04-QKRAA	SV	+
	18		no Epitopes	no Epitopes	SV	+
	19		no Epitopes	no Epitopes	SV	+
	20		04-QKRAA	04-QKRAA	SV	+

\*\* BRAVO \*\*

(1) The result was evaluated as correct.



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445

### HLA Diagnostics 06 - HLA Antibody Screening and Identification

Sam- ple	Method	Manu- facturer	Your specification(s)	Correct specification(s)	False positive specification(s)	False negative specification(s)	Meets criteria
HLA-Antibody detection by CDC without DTT							
21	(1)		positive	positive			+
22	(1)		positive	positive			+
23	(1)		positive	positive			+
24	(1)		positive	positive			+
25	(1)		positive	positive			+
HLA-Antibody detection by CDC with DTT							
21	(1)		positive	positive			+
22	(1)		positive	positive			+
23	(1)		positive	positive			+
24	(1)		positive	positive			+
25	(1)		positive	positive			+
HLA-Antibody detection by SPA class I							
21	(1)	Luminex	OB	positive	positive		+
22	(1)			positive	positive		+
23	(1)			positive	positive		+
24	(1)			positive	positive		+
25	(1)			positive	positive		+
HLA-Antibody detection by SPA class II							
21		Luminex	OB	negative	negative		+
22				positive	Sample not evaluated		
23				positive	positive		+
24				positive	positive		+
25				positive	positive		+
HLA-antibody specification by CDC							
HLA-A							
21			no specificities	no specificities			
22			25, 26, 66	25, 26			
23			2	2			
24			no specificities	no specificities			
25			no specificities	no specificities			
HLA-B							
21			7, 8, 18, 27, 41, 42, 48, 60, 61	7			
22			no specificities	Sample not evaluated			
23			no specificities	Sample not evaluated			
24			44, 45	44, 45			
25			35, 51, 52, 53, 62, 63, 72, 75, 77	35, 51, 52, 53			
HLA-Cw							
21			no specificities	no specificities			
22			2, 9, 10	2			
23			2, 10	2			
24			no specificities	no specificities			
25			no specificities	no specificities			

To obtain the certificate "HLA-antibody specification by CDC", at least 75% of the specificities must be correctly determined, your number is 100% (12 of 12).



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Sam- ple	Method	Manu- facturer	Your specification(s)	Correct specification(s)	False positive specification(s)	False negative specification(s)	Meets criteria
<b>HLA-antibody specification by SPA class I</b>							<b>+</b>
<b>HLA-A</b>							
21	Luminex-SAB	OB	66, 32, 74	66			
22			2, 23, 25, 26, 34, 66, 29, 30, 31, 32, 33, 74, 68, 69, 43	25, 26, 34, 66, 29, 30, 31, 32, 33, 74, 43			
23			2, 23, 24, 25, 26, 34, 66, 29, 31, 32, 33, 74, 68, 69, 43, 80	2, 23, 24, 25, 32, 68, 69	26, 34, 74, 43		
24			no specificities	no specificities			
25			11, 23, 24, 25, 34, 66, 29, 33, 68, 69	24, 33			
<b>HLA-B</b>							
21	Luminex-SAB	OB	7, 8, 13, 18, 27, 35, 37, 38, 39, 41, 42, 45, 46, 47, 48, 50, 51, 52, 54, 55, 56, 57, 60, 61, 62, 63, 64, 65, 67, 71, 72, 73, 75, 76, 77, 78, 81, 82	7, 8, 18, 27, 35, 37, 38, 39, 41, 42, 45, 46, 47, 48, 50, 51, 52, 54, 55, 56, 57, 60, 61, 62, 63, 64, 65, 67, 71, 72, 73, 75, 76, 77, 78, 81, 82			
22			13, 27, 35, 37, 38, 44, 45, 46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 71, 72, 73, 75, 77	27, 37, 38, 44, 45, 46, 47, 49, 50, 51, 52, 53, 57, 58, 59, 63, 64, 65, 73, 75, 77			
23			7, 13, 27, 37, 38, 41, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 57, 58, 59, 60, 61, 63, 73, 75, 76, 77, 81, 82	13, 27, 37, 38, 44, 45, 47, 49, 51, 52, 53, 57, 58, 59, 60, 63, 77	75		
24			7, 13, 38, 39, 41, 42, 44, 45, 47, 48, 49, 50, 55, 60, 61, 62, 71, 72, 75, 76, 81, 82	13, 38, 41, 44, 45, 47, 49, 50, 60, 61, 62, 72, 76, 82			
25			8, 13, 18, 35, 37, 38, 39, 41, 44, 45, 46, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 71, 72, 75, 76, 77, 78	8, 18, 35, 37, 38, 39, 44, 45, 46, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 62, 63, 64, 65, 71, 72, 75, 76, 77, 78			
<b>HLA-Cw</b>							
21	Luminex-SAB	OB	2, 9, 10	Sample not evaluated			
22			1, 2, 4, 5, 6, 8, 9, 10, 12, 14, 15, 16, 17, 18	1, 2, 4, 5, 6, 8, 9, 10, 12, 14, 15, 16, 17, 18			
23			2, 4, 5, 6, 8, 9, 10, 12, 15, 16, 17, 18	2, 5, 10, 15, 17	6, 12, 18		
24			6, 15, 18	Sample not evaluated			
25			5, 6, 9, 10, 15, 17, 18	9, 10			

To obtain the certificate "HLA-antibody specification by SPA class I", at least 75% of the specificities must be correctly determined, your number is 100% (160 of 160).



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Sam-ple	Method	Manu-facturer	Your specification(s)	Correct specification(s)	False positive specification(s)	False negative specification(s)	Meets criteria
<b>HLA-antibody specification by SPA class II</b>							
<b>HLA-DRB</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			15, 16	Sample not evaluated			
23			1, 7, 9, 15, 16, 17, 18	1, 9, 15, 16, 17			
24			no specificities	Sample not evaluated			
25			8, 11, 12, 13, 14, 17, 18	8, 11, 13, 14, 17, 18			
<b>HLA-DRB3/4/5</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			no specificities	no specificities			
23			51, 52	51			
24			no specificities	no specificities			
25			52	52			
<b>HLA-DQB</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			no specificities	no specificities			
23			2, 5, 6	2, 5, 6			
24			7, 8, 9	7, 8, 9			
25			7, 8, 9	7, 8, 9			
<b>HLA-DQA</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			no specificities	no specificities			
23			1	Sample not evaluated			
24			6	Sample not evaluated			
25			6	Sample not evaluated			
<b>HLA-DPB</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			no specificities	no specificities			
23			1, 3, 5, 6, 9, 10, 11, 13, 14, 15, 17, 19, 20	1, 3, 5, 6, 11, 13, 19			
24			1	Sample not evaluated			
25			2, 3, 4, 6, 9, 10, 14, 17, 18, 20, 28	2, 3, 4, 6, 9, 14, 17, 18, 28			
<b>HLA-DPA</b>							
21	Luminex-SAB	OB	no specificities	no specificities			
22			no specificities	no specificities			
23			2, 4	2, 4			
24			no specificities	no specificities			
25			no specificities	Sample not evaluated			

To obtain the certificate "HLA-antibody specification by SPA class II", at least 75% of the specificities must be correctly determined, your number is 100% (40 of 40).



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Sam-ple	Method	Manu-facturer	Your specification(s)	Correct specification(s)	False positive specification(s)	False negative specification(s)	Meets criteria
<b>HLA-antibody- specification by complement-binding assay class I</b>							<b>+</b>
<b>HLA-A</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	Sample not evaluated			
23			2	2			
24			no specificities	no specificities			
25			no specificities	no specificities			
<b>HLA-B</b>							
21	complement-assay C1q	ZX	7, 8, 18, 27, 39, 41, 42, 47, 48, 60, 61, 64, 67, 73, 81	7, 8, 18, 27, 39, 41, 42, 48, 60, 61, 67, 81			
22			no specificities	Sample not evaluated			
23			no specificities	Sample not evaluated			
24			44, 45, 76, 82	76			
25			35, 49, 50, 51, 53, 56, 62, 63, 71, 72, 75, 77, 78	35, 53, 75, 77			
<b>HLA-Cw</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			1, 2, 4, 5, 6, 9, 10, 12, 15, 16, 17, 18	2, 4, 5, 6, 9, 10, 12, 15, 17, 18			
23			2, 9, 10, 15	2, 15			
24			no specificities	no specificities			
25			no specificities	no specificities			

To obtain the certificate "HLA-antibody- specification by complement-binding assay class I", at least 75% of the specificities must be correctly determined, your number is 100% (30 of 30).





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Sam- ple	Method	Manu- facturer	Your specification(s)	Correct specification(s)	False positive specification(s)	False negative specification(s)	Meets criteria
<b>HLA-antibody specification by complement-binding assay class II</b>							
<b>HLA-DRB</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			no specificities	no specificities			
24			no specificities	no specificities			
25			no specificities	Sample not evaluated			
<b>HLA-DRB3/4/5</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			no specificities	Sample not evaluated			
24			no specificities	no specificities			
25			no specificities	no specificities			
<b>HLA-DQB</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			2, 5, 6	5, 6			
24			no specificities	no specificities			
25			no specificities	no specificities			
<b>HLA-DQA</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			1	1			
24			no specificities	no specificities			
25			no specificities	no specificities			
<b>HLA-DPB</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			no specificities	no specificities			
24			no specificities	no specificities			
25			no specificities	no specificities			
<b>HLA-DPA</b>							
21	complement-assay C1q	ZX	no specificities	no specificities			
22			no specificities	no specificities			
23			no specificities	no specificities			
24			no specificities	no specificities			
25			no specificities	no specificities			

To obtain the certificate "HLA-antibody specification by complement-binding assay class II", at least 75% of the specificities must be correctly determined, your number is 100% (3 of 3).

(1) To obtain a certificate, at least 4 of the 5 samples must be correctly determined, your number is 5.