

PKU-controls RIVM
survey 2012/4

diverse controle's

Specimen nr	B441	B442	B443	B444	B445	Method	Remarks
Nominal mmol/l blood	139	114	64	464	214		
Amsterdam	130	84	47	379	158	MS/MS PE underivatized	
Bilthoven	145	113	65	561	248	MS/MS PE underivatized	
Capelle	134	105	57	516	186	MS/MS PE underivatized	
Tilburg	134	105	60	446	236	MS/MS PE underivatized	
Zwolle	142	106	61	428	189	MS/MS PE underivatized	
Antwerpen	136	111	60	441	200	MS/MS PE underivatized	
Brussel ULB	113	94.66	51	372.33	190	MS/MS Derivatized	
Brussel UCL	125	95	55	361	172	MS/MS Derivatized	
Liege	124	90	59	430	219	MS/MS Derivatized	
Luxembourg	131	102	59	460	210	MS/MS PE underivatized	
Bio-Rad	154	124	78	511	248	Quantase	
Perkin Elmer	138	118	77	270	193	Victor-Delfia	
CDC	--	--	--	--	--		
Izmir	119	104	51	436	191	Biochrom AA	
x	133	105	60	437	203		
cv %	8	10	15	17	13		

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2012/4	617084	615965	MSMS
Bilthoven	2012/4	0	0	Perkin Elmer NeoBase kit
Capelle	2012/4	617084	615965	PE Neobase Non Deri.
Tilburg	2012/4	617084	97/AZ615965	MSMS
Zwolle	2012/4	617084	615965	MS/MS PE underivatized
Antwerpen	2012/4	61 70 84	615965	NEOBASE
Brussel ULB	2012/4	0	0	MSMS+derivatisation
Brussel UCL	2012/4	0	0	0
Liege	2012/4	0	0	Derivatized chromsystem kit
Luxembourg	2012/4	620862	619702	MSMS nonderivertised
Bio-rad	2012/4	0	1772	0
Perkin Elmer	2012/4	618477	0	Fluorometric
CDC		0	0	0
Izmir	2012/4	Biochrom	Sigma	Biochrom AAA

observed/expected (%)	B441	B442	B443	B444	B445	mean	Remarks
Amsterdam	94	74	73	82	74	79	
Bilthoven	104	99	102	121	116	108	
Capelle	96	92	89	111	87	95	
Tilburg	96	92	94	96	110	98	
Zwolle	102	93	95	92	88	94	
Antwerpen	98	97	94	95	93	95	
Brussel ULB	82	--	80	--	89	83	
Brussel UCL	90	83	86	78	80	83	
Liege	89	79	92	93	102	91	
Luxembourg	94	90	92	99	98	95	
Bio-Rad	111	109	122	110	116	113	
Perkin Elmer	99	104	120	58	90	94	
CDC	--	--	--	--	--	--	
Izmir	86	91	80	94	89	88	

Classification

Specimen nr	B441	B442	B443	B444	B445	Remarks
Amsterdam	1	1	1	3	1	
Bilthoven	1	1	1	3	3	
Capelle	1	1	1	3	1	
Tilburg	1	1	1	3	2	
Zwolle	1	1	1	3	1	
Antwerpen	1	1	1	3	2	
Brussel ULB	1	1	1	3	3	
Brussel UCL	1	1	1	3	2	
Liège	3	1	1	3	3	
Luxembourg	1	1	1	3	2	
Bio-Rad	1	1	1	3	3	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	1	1	3	2	

Key for classification
 1=negative
 2=PKU possible
 3=PKU probable

expected classifications with measured concentrations					
B441	B442	B443	B444	B445	
1	1	1	2	1	
1	1	1	3	2	
1	1	1	3	1	
1	1	1	3	2	
1	1	1	3	1	
1	1	1	3	2	
1	3	1	3	1	
1	1	1	2	1	
1	1	1	3	2	
1	1	1	3	2	
1	1	1	3	2	
1	1	1	2	1	
--	--	--	--	--	
1	1	1	3	1	

Action

Specimen nr	B441	B442	B443	B444	B445	Remarks
Amsterdam	1	1	1	6	1	
Bilthoven	1	1	1	6	6	
Capelle	1	1	1	6	1	
Tilburg	1	1	1	6	5	
Zwolle	1	1	1	6	1	
Antwerpen	1	1	1	6	5	
Brussel ULB	1	1	1	6	5	
Brussel UCL	1	1	1	6	5	
Liège	--	--	--	--	--	
Luxembourg	1	1	1	6	5	
Bio-Rad	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	1	1	6	5	

Key for action:
 1=none
 4=repeat analysis in same scdccimen
 5=request for second scdccimen
 6=referral to paediatrician

expected actions with measured concentrations					
B441	B442	B443	B444	B445	
1	1	1	5	1	
1	1	1	6	5	
1	1	1	6	1	
1	1	1	6	5	
1	1	1	6	1	
1	1	1	6	5	
1	6	1	6	1	
1	1	1	5	1	
1	1	1	6	5	
1	1	1	6	5	
1	1	1	6	5	
1	1	1	5	1	
--	--	--	--	--	
1	1	1	6	1	

T4-TBG-controls RIVM survey 2012/4

Specimen nr	B441	B442	B443	B444	B445	Method	Remarks
Nominal T4 nmol/l blood	27	36	63	72	90		
Amsterdam	19	26	47	63	76	AutoDelfia	
Bilthoven	26	31	59	70	88	AutoDelfia	
Capelle	20	27	51	61	73	AutoDelfia	
Tilburg	28	31	70	68	89	GSP	
Zwolle	25	35	58	73	87	AutoDelfia	
Brussel ULB	--	--	--	--	--	AutoDelfia	
CDC	--	--	--	--	--	PerkinElmer Delfia	
Bio-rad	--	--	--	--	--	Quantase	
Perkin Elmer	31	36	59	70	81	AutoDelfia	
Izmir	--	--	--	--	--	Neogenesis	
x	25	31	57	67	82		
sd	4	4	7	4	6		
vc %	17	12	13	6	7		

observed/expected (%)	B441	B442	B443	B444	B445	mean	Remarks
Amsterdam	70	72	75	88	84	78	
Bilthoven	96	86	94	97	98	94	
Capelle	74	75	81	85	81	79	
Tilburg	104	86	111	94	99	99	
Zwolle	93	97	92	101	97	96	
Brussel ULB	--	--	--	--	--	--	
CDC	--	--	--	--	--	--	
Bio-rad	--	--	--	--	--	--	
Perkin Elmer	116	100	94	97	90	99	
Izmir	--	--	--	--	--	--	

SD-value						Remarks
	B441	B442	B443	B444	B445	
Amsterdam	-3,6	-3,1	-2,0	-1,1	-0,4	
Bilthoven	-3,3	-3,0	-1,6	-1,1	-0,2	
Capelle	-3,4	-3,1	-1,7	-1,2	-0,5	
Tilburg	-3,2	-3,0	-1,0	-1,2	-0,1	
Zwolle	-3,3	-2,8	-1,6	-0,9	-0,2	

Classification based on T4						Remarks
	B441	B442	B443	B444	B445	
Amsterdam	3	3	4	4	1	
Bilthoven	3	3	4	1	1	
Capelle	3	3	4	1	1	
Tilburg	3	3	4	4	1	
Zwolle	3	4	4	1	1	
Brussel ULB	--	--	--	--	--	

Key for classification:

- 1=negative
- 2=CHT possible
- 3=CHT probable
- 4=no conclusion (yet)
- 5=not relevant

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2012/4	618438	618140	AD
Bilthoven	2012/4	0	0	GSP
Capelle	2012/4	619150	618140	AutoDelfia
Tilburg	2012/4	619295	619123	GSP
Zwolle	2012/4	619150	618140	AutoDelfia
Brussel ULB	2012/4	0	00.01.1900	0
0	0	0	0	0
Bio-rad	2012/4	0	0	0
Perkin Elmer	2012/4	620246	0	AutoDELFLIA
Izmir	2012/4	0	0	0

expected classifications with measured concentrations					
B441	B442	B443	B444	B445	
3	3	4	1	1	
3	3	4	1	1	
3	3	4	1	1	
3	3	1	1	1	
3	4	4	1	1	

Action based on T4

	B441	B442	B443	B444	B445	Remarks
Amsterdam	4	4	3	2	1	
Bilthoven	3	3	3	2	1	
Capelle	3	3	3	2	1	
Tilburg	4	4	2	2	1	
Zwolle	4	3	3	2	1	
Brussel ULB	--	--	--	--	--	

Key for action:
 1=none
 2=TSH-analysis
 3=TSH- + TBG-analysis
 4=TSH- + TBG-analysis + referral
 5=request for 2nd specimen
 6=referral to paediatrician

expected actions wrt measured concentrations				
B441	B442	B443	B444	B445
4	4	3	2	1
4	4	3	2	1
4	4	3	2	1
4	4	2	2	1
4	3	3	2	1

Tabel 11 (continued)

Specimen nr	B441	B442	B443	B444	B445	Method	Remarks
Nominal TBG nmol/l serum	540	202	34	68	135		
Amsterdam	500	178	43	64	114	Eiken	
Bilthoven	583	192	42	--	--	Eiken	
Capelle	443	198	33	55	129	Eiken	
Tilburg	691	308	43	89	142	Eiken	
Zwolle	511	230	63	98	172	Eiken	

observed/expected (%)						mean	Remarks
Amsterdam	93	88	--	95	84	90	
Bilthoven	108	95	--	--	--	102	
Capelle	82	98	--	81	96	89	
Tilburg	128	152	--	132	105	129	
Zwolle	95	114	--	145	127	120	

T4/TBG ratio							
Amsterdam	3,2	11,2	72,1	--	--		
Bilthoven	3,0	11,0	83,0	--	--		
Capelle	3,8	10,1	103,0	--	--		
Tilburg	2,7	6,8	-	-	-		
Zwolle	3,6	10,0	55,6	42,9	xx		

Classification based on T4/TBG ratio

						Remarks
Amsterdam	5	5	1	--	--	
Bilthoven	3	3	1	--	--	
Capelle	3	3	1	--	--	
Tilburg	5	5	-	-	-	
Zwolle	5	2	1	5	5	

Action based on T4/TBG ratio

						Remarks
Amsterdam	1	1	1	--	--	
Bilthoven	6	6	1	--	--	
Capelle	6	6	1	--	--	
Tilburg	1	1	-	-	-	
Zwolle	1	5	1	1	1	

expected classifications wrt measured concentrations				
B441	B442	B443	B444	B445
5	5	1	5	5
5	5	1	5	5
5	5	1	5	5
5	5	5	5	5
5	2	1	5	5

expected actions wrt measured concentrations				
B441	B442	B443	B444	B445
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	5	1	1	1

TSH-controls RIVM survey 2012/4

Specimen nr	B441	B442	B443	B444	B445 Method	Remarks
Nominal mIU/l blood	50	27	16	12	18	
Amsterdam	45	23	14	11	15 BRAHMS	
Bilthoven	71	31	16	12	16 AutoDelfia	
Capelle	42	24	15	10	16 AutoDelfia	
Tilburg	56	33	18	13	21 GSP	
Zwolle	47	24	14	9	15 AutoDelfia	
Antwerpen	51	25	15	11	16 GSP	
Brussel ULB	49	27	18	11	17 AutoDelfia	
Brussel UCL	78	42	28	22	29 BioRad Quantase	
Liege	65	34	24	17	24 ELISA home made	
Luxembourg	50	29	18	12	19 AutoDelfia	
Bio-rad	44	27	17	14	19 Quantase	
Perkin Elmer	40	21	15	10	16 AutoDelfia	
CDC	--	--	--	--	-- Delfia	
Izmir	46	27	13	10	14 Neogenesis	
x	52,6	28,1	17,3	12,3	18,2	
sd	11	5	4	3	4	
cv %	21	19	24	27	22	

observed/expected (%)	B441	B442	B443	B444	B445	mean	Remarks
Amsterdam	90	85	88	92	83	88	
Bilthoven	142	115	100	100	89	109	
Capelle	84	89	94	83	89	88	
Tilburg	112	120	109	104	118	113	
Zwolle	94	89	88	75	83	86	
Antwerpen	102	93	94	92	89	94	
Brussel ULB	98	100	113	92	94	99	
Brussel UCL	156	154	178	179	158	165	
Liege	130	126	150	142	133	136	
Luxembourg	100	107	109	98	104	104	
Bio-rad	88	99	108	117	107	104	
Perkin Elmer	80	77	94	81	87	84	
CDC	--	--	--	--	--	--	
Izmir	92	100	83	83	78	87	

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2012/4	0	eigen	Brahms
Bilthoven	2012/4	0	0	GSP
Capelle	2012/4	619744	619012	AutoDelfia
Tilburg	2012/4	617880	616751	GSP
Zwolle	2012/4	619744	619012	AutoDelfia
Antwerpen	2012/4	61 89 97	618146	GSP
Brussel ULB	2012/4	620351	10.02.3598	autodelfia
Brussel UCL	2012/4	0	0	0
Liege	2012/4	0	0	ELISA home made
Luxembourg	2012/4	619744	619012	AutoDelfia
Bio-rad	2012/4	195	0	0
Perkin Elmer	2012/4	620254	0	AutoDELFLIA
		0	0	0
Izmir	2012/4	0	0	Neogenesis

Specimen nr	Classification					Remarks
	B441	B442	B443	B444	B445	
Amsterdam	3	3	2	2	2	
Bilthoven	3	3	2	2	2	
Capelle	3	3	2	2	2	
Tilburg	3	3	2	2	2	
Zwolle	3	3	2	2	2	
Antwerpen	3	3	2	1	2	
Brussel ULB	3	3	1	1	2	
Brussel UCL	6	6	6	6	6	
Liège	3	3	2	1	2	
Luxembourg	3	3	2	2	2	
Bio-rad	3	3	2	2	2	
Wallac	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	3	3	2	2	2	

Key for classification
 1=negative
 2=CHT possible
 3=CHT probable

Specimen nr	Action (based only on TSH)					Remarks
	B441	B442	B443	B444	B445	
Amsterdam	6	6	5	5	5	
Bilthoven	6	6	5	5	5	
Capelle	6	6	5	5	5	
Tilburg	6	6	5	5	5	
Zwolle	6	6	5	5	5	
Antwerpen	6	5	5	1	5	
Brussel ULB	6	6	1	1	5	
Brussel UCL	6	6	6	6	6	
Liège	--	--	--	--	--	
Luxembourg	6	6	5	5	5	
Bio-rad	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	6	6	5	5	5	

Key for action
 1=none
 4=repeat analysis in same specimen
 5=request for 2nd specimen
 6=referral to paediatrician
 7=T4-analysis

expected classifications with measured concentrations					
B441	B442	B443	B444	B445	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	3	3	3	
3	3	3	2	3	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	2	2	2	2	
--	--	--	--	--	
3	3	2	2	2	

expected actions wrt measured concentrations					
B441	B442	B443	B444	B445	
6	6	5	5	5	
6	6	5	5	5	
6	6	5	5	5	
6	6	5	5	5	
6	6	5	5	5	
6	6	5	5	5	
6	6	5	5	5	
6	6	6	6	6	
6	6	6	5	6	
6	6	5	5	5	
6	6	5	5	5	
6	5	5	5	5	
--	--	--	--	--	
6	6	5	5	5	

OHP-controls RIVM survey 2012/4

Specimen nr	B441	B442	B443	B444	B445	Method	Remarks
Nominal nmol/l blood	20	14	2	102	39		
Amsterdam	14	9	2	79	35	AutoDelfia	
Bilthoven	15	10	2	76	35	GSP	
Capelle	13	9	2	86	26	AutoDelfia	
Tilburg	14	9	1	69	25	GSP	
Zwolle	14	10	2	78	30	AutoDelfia	
Antwerpen	12	9	2	89	28	GSP	
Brussel ULB	14	6	1	73	26	AutoDelfia	
Brussel UCL	--	--	--	--	--		
Liege	16	18	6	65	28	ELISA home made	
Luxembourg	14	9	2	84	30	AutoDelfia	
Bio-rad	20	15	4	97	36	Quantase	
Perkin Elmer	15	11	2	73	30	AutoDelfia	
CDC	--	--	--	--	--	AutoDelfia	
Izmir	18	13	3	102	41	Neogenesis	
x	15	11	2	81	31		
sd	2,1	3,1	1,3	10,6	4,7		
cv %	14	29	57	13	15		

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2012/4	618899	618715	AD
Bilthoven	2012/4	0	0	GSP
Capelle	2012/4	619855	619385	AutoDelfia
Tilburg	2012/4	619635	619127	GSP
Zwolle	2012/4	618837	615582	AutoDelfia
Antwerpen	2012/4	61 96 35	619127	GSP
Brussel ULB	2012/4	617202	617892	autodelfia
Brussel UCL	2012/4	0	0	0
Liege	2012/4	0	0	ELISA home made
Luxembourg	2012/4	620128	619766	AutoDelfia
Bio-rad	2012/4	130	0	0
Perkin Elmer	2012/4	620482	0	AutoDELFLIA
0	0	0	0	0
Izmir	2012/4	0	0	Neogenesis

observed/expected (%)	B441	B442	B443	B444	B445	mean	Remarks
Amsterdam	69	64	--	78	90	75	
Bilthoven	74	71	--	75	90	78	
Capelle	64	64	--	85	67	70	
Tilburg	69	64	--	68	64	66	
Zwolle	69	71	--	77	77	74	
Antwerpen	59	64	--	88	72	71	
Brussel ULB	69	43	--	72	67	63	
Brussel UCL	--	--	--	--	--	--	
Liege	79	129	--	64	72	86	
Luxembourg	70	64	--	83	77	73	
Bio-rad	99	107	--	96	92	98	
Perkin Elmer	75	78	--	72	76	75	
CDC	--	--	--	--	--	--	
Izmir	89	93	--	100	105	97	

Classification

Specimen nr	B441	B442	B443	B444	B445	Remarks
Amsterdam	1	1	1	3	2	
Bilthoven	1	1	1	3	2	
Capelle	1	1	1	3	2	
Tilburg	1	1	1	3	2	
Zwolle	1	1	1	3	2	
Antwerpen	1	1	1	3	2	
Brussel ULB	1	1	1	3	2	
Brussel UCL	--	--	--	--	--	
Liège	1	1	1	2	1	
Luxembourg	1	1	1	3	3	
Bio-rad	1	1	1	3	2	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	1	1	3	2	

Key for classification
 1=negative
 2=CAH possible
 3=CAH probable

expected classifications with measured concentrations				
B441	B442	B443	B444	B445
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
--	--	--	--	--
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
1	1	1	3	2
--	--	--	--	--
1	1	1	3	2