

PKU-controls RIVM
survey 2011/2

diverse controle's

Specimen nr	B411	B412	B413	B414	B415 Method	Remarks
Nominal mmol/l blood	64	139	214	364	664	
Amsterdam	63	140	195	389	661 MS/MS PE underivatized	
Bilthoven	54	112	198	314	653 MS/MS PE underivatized	
Capelle	53	116	166	272	556 MS/MS PE underivatized	
Tilburg	59	113	193	309	628 MS/MS PE underivatized	
Zwolle	56	129	207	314	573 MS/MS PE underivatized	
Antwerpen	69	148	231	363	714 MS/MS PE underivatized	
Brugge	76	155	246	382	610 MS/MS Derivatized	
Brussel ULB	52	113	172	289	570 MS/MS Derivatized	
Brussel UCL	39	101	156	278	536 MS/MS Derivatized	
Gent	52	88	188	256	503 MS/MS Derivatized	
Liege	65	156	241	384	739 MS/MS Derivatized	
Luxembourg	51	118	182	319	568 MS/MS PE underivatized	
Bio-Rad	76	160	258	431	770 Quantase	
Perkin Elmer	75	124	186	277	484 Victor-Delfia	
CDC	--	--	--	--	--	
Izmir	59	128	201	308	639 Biochrom AA	
x	60	127	201	326	614	
cv %	17	16	14	15	13	

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/2	605975 i6 AC	604509	neobase
Bilthoven	2011/2	605975	605656	NeoBase; underivatized
Capelle	2011/2	605975 56/AC	604509	PerkinElmer Neobase non deriv.
Tilburg	2011/2	609615 i1/AC	609425	MSMS
Zwolle	2011/2	605975	605656	NeoBase; Underivatized
Antwerpen	2011/2	0	0	0
Brugge	2011/2	NVT	NVT	LC/MSMS Derivatisation
Brussel ULB	2011/2	0	0	MSMS + derivatisation
Brussel UCL	2011/2	0	0	MSMS Derivatized - Non Kit
Gent	2011/2	in-house	in-house	LC-MSMS, derivatized, non-kit
Liege	2011/2	0	0	Derivatized Chromsystem kit
Luxembourg	2011/2	609615	608861	PE NeoBase Non derivatized MSMS
Bio-rad	2011/2	201	0	0
Perkin Elmer	2011/2	609510	0	Fluorometric
		0	0	0
Izmir	2011/2	Biochrom		Sigma Biochrom AAA

observed/expected (%)	B411	B412	B413	B414	B415	mean	Remarks
Amsterdam	98	101	91	107	100	99	
Bilthoven	84	81	93	86	98	88	
Capelle	83	83	78	75	84	80	
Tilburg	92	81	90	85	95	89	
Zwolle	88	93	97	86	86	90	
Antwerpen	108	106	108	100	108	106	
Brugge	119	112	115	105	92	108	
Brussel ULB	82	81	80	79	86	82	
Brussel UCL	61	73	73	76	81	73	
Gent	81	63	88	70	76	76	
Liege	101	112	113	105	111	109	
Luxembourg	80	85	85	88	86	85	
Bio-Rad	119	115	121	118	116	118	
Perkin Elmer	117	89	87	76	73	88	
CDC	--	--	--	--	--	--	
Izmir	92	92	94	85	96	92	

Classification

Specimen nr	B411	B412	B413	B414	B415	Remarks
Amsterdam	1	1	1	2	3	
Bilthoven	1	1	1	2	3	
Capelle	1	1	1	2	3	
Tilburg	1	1	1	2	3	
Zwolle	1	1	2	2	3	
Antwerpen	1	1	2	3	3	
Brugge	1	2	2	3	3	
Brussel ULB	1	1	2	2	3	
Brussel UCL	1	1	1	2	3	
Gent	1	1	2	2	3	
Liège	1	1	3	3	3	
Luxembourg	1	1	2	2	3	
Bio-Rad	1	1	3	3	3	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	2	3	3	3	

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

expected classifications with measured concentrations

B411	B412	B413	B414	B415
1	1	1	2	3
1	1	1	2	3
1	1	1	2	3
1	1	1	2	3
1	1	2	2	3
1	1	2	2	3
1	1	2	2	3
1	1	1	2	3
1	1	1	2	3
1	1	1	2	3
1	1	2	2	3
1	1	1	2	3
1	1	2	3	3
1	1	1	2	3
--	--	--	--	--
1	1	2	2	3

Action

Specimen nr	B411	B412	B413	B414	B415	Remarks
Amsterdam	1	1	1	5	6	
Bilthoven	1	1	1	5	6	
Capelle	1	1	1	5	6	
Tilburg	1	1	1	5	6	
Zwolle	1	1	5	5	6	
Antwerpen	1	1	5	6	6	
Brugge	1	5	5	6	6	
Brussel ULB	1	1	5	5	6	
Brussel UCL	1	1	1	5	6	
Gent	1	1	5	5	6	
Liège	--	--	--	--	--	
Luxembourg	1	1	5	6	6	
Bio-Rad	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	5	6	6	6	

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

B411	B412	B413	B414	B415
1	1	1	5	6
1	1	1	5	6
1	1	1	5	6
1	1	1	5	6
1	1	5	5	6
1	1	5	5	6
1	1	5	5	6
1	1	1	5	6
1	1	1	5	6
1	1	5	5	6
1	1	1	5	6
1	1	5	5	6
1	1	1	5	6
1	1	5	6	6
1	1	1	5	6
--	--	--	--	--
1	1	5	5	6

T4-TBG-controls RIVM survey 2011/2

Specimen nr	B411	B412	B413	B414	B415	Method	Remarks
Nominal T4 nmol/l blood	27	45	63	81	120		
Amsterdam	23	42	58	76	114	AutoDelfia	
Bilthoven	17	32	43	68	135	AutoDelfia	
Capelle	24	37	56	66	105	AutoDelfia	
Tilburg	28	39	57	72	115	AutoDelfia	
Zwolle	24	40	60	71	101	AutoDelfia	
Brussel ULB	26	42	62	75	118	autoDelfia	
CDC	--	--	--	--	--	PerkinElmer Delfia	
Bio-rad	--	--	--	--	--	Quantase	
Perkin Elmer	22	40	54	70	107	AutoDelfia	
Izmir	24	32	58	71	99	Neogenesis	
x	24	39	56	71	114		
sd	3	3	6	3	10		
vc %	14	8	10	5	9		

observed/expected (%)	B411	B412	B413	B414	B415	mean	Remarks
Amsterdam	85	93	92	94	95	92	
Bilthoven	63	71	68	84	113	80	
Capelle	89	82	89	81	88	86	
Tilburg	104	87	90	89	96	93	
Zwolle	89	89	95	88	84	89	
Brussel ULB	98	93	99	92	98	96	
CDC	--	--	--	--	--	--	
Bio-rad	--	--	--	--	--	--	
Perkin Elmer	83	88	85	87	89	86	
Izmir	89	71	92	88	83	84	

SD-value

	B411	B412	B413	B414	B415	Remarks
Amsterdam	-3.2	-2.1	-1.1	-0.1	2.2	
Bilthoven	-3.6	-2.7	-2.1	-0.7	3.2	
Capelle	-3.2	-2.4	-1.4	-0.8	1.4	
Tilburg	-3.1	-2.5	-1.6	-0.8	1.5	
Zwolle	-3.2	-2.4	-1.3	-0.6	1.0	

Classification based on T4

	B411	B412	B413	B414	B415	Remarks
Amsterdam	3	4	4	1	1	
Bilthoven	3	2	2	1	1	
Capelle	3	2	1	1	1	
Tilburg	3	4	4	4	1	
Zwolle	3	4	1	1	1	
Brussel ULB	2	1	1	1	1	

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	2011/2	608272	606423	AD
Bilthoven	2011/2	608960	608391	AutoDelfia
Capelle	2011/2	608825	608391	Autodelfia
Tilburg	2011/2	609191	608391	AD
Zwolle	2011/2	606886	603891	Auto Delfia
Brussel ULB	2011/2	605881	06/12/3557	Autodelfia
0	0	0	0	0
Bio-rad	2011/2	0	0	0
Perkin Elmer	2011/2	608272	0	AutoDELFLIA
Izmir	29-Jun-11	0	0	Neogenesis

expected classifications with measured concentrations

B411	B412	B413	B414	B415
3	4	1	1	1
3	4	4	1	1
3	4	1	1	1
3	4	4	1	1
3	4	1	1	1

	Action based on T4					Remarks
	B411	B412	B413	B414	B415	
Amsterdam	4	3	2	1	1	
Bilthoven	4	3	3	1	1	
Capelle	4	3	1	1	1	
Tilburg	4	3	3	2	1	
Zwolle	4	3	2	1	1	
Brussel ULB	5	1	1	1	1	

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				
B411	B412	B413	B414	B415
4	3	2	1	1
4	3	3	1	1
4	3	2	2	1
4	3	3	2	1
4	3	2	1	1

Tabel 11 (continued)

Specimen nr	B411	B412	B413	B414	B415	Method	Remarks
Nominal TBG nmol/l serum	51	101	202	270	405		
Amsterdam	53	91	211	248	386	Eiken	
Bilthoven	54	97	193	303	410	Eiken	
Capelle	48	82	206	309	441	Eiken	
Tilburg	45	83	187	247	301	Eiken	
Zwolle	42	92	185	238	402	Eiken	

observed/expected (%)						mean	Remarks
Amsterdam	105	90	104	92	95	97	
Bilthoven	107	96	96	112	101	102	
Capelle	95	81	102	114	109	100	
Tilburg	89	82	93	91	74	86	
Zwolle	83	91	92	88	99	91	

T4/TBG ratio					
Amsterdam	35.8	33.0	--	--	--
Bilthoven	27.8	24.7	15.5	---	---
Capelle	39.6	32.9	--	--	--
Tilburg	44.4	31.3	18.7	x	x
Zwolle	45.2	29.3	20.5	xx	xx

Classification based on T4/TBG ratio						Remarks
Amsterdam	1	1	--	--	--	
Bilthoven	5	1	2	---	---	
Capelle	5	1	--	--	--	
Tilburg	5	1	1	x	x	
Zwolle	5	2	5	5	5	

Action based on T4/TBG ratio						Remarks
Amsterdam	1	1	--	--	--	
Bilthoven	1	1	5	---	---	
Capelle	1	1	--	--	--	
Tilburg	1	1	1	x	x	
Zwolle	1	5	1	1	1	

expected classifications wrt measured concentrations				
B411	B412	B413	B414	B415
5	1	5	5	5
5	1	2	5	5
5	1	5	5	5
5	1	1	5	5
5	1	5	5	5

expected actions wrt measured concentrations				
B411	B412	B413	B414	B415
1	1	1	1	1
1	1	5	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1

TSH-controls RIVM survey 2011/2

Specimen nr	B411	B412	B413	B414	B415 Method	Remarks
Nominal mIU/l blood	50	24	16	10	8	
Amsterdam	47	23	15	8	9 BRAHMS	
Bilthoven	63	30	22	12	10 AutoDelfia	
Capelle	44	20	15	9	8 AutoDelfia	
Tilburg	44	19	13	7	6 AutoDelfia	
Zwolle	46	22	17	8	7 AutoDelfia	
Antwerpen	47	24	16	9	7 AutoDelfia	
Brugge	40	20	14	7	6 AutoDelfia	
Brussel ULB	49	25	17	10	8 AutoDelfia	
Brussel UCL	53	22	17	12	11 BioRad Quantase	
Gent	43	22	15	8	8 AutoDelfia	
Liege	54	28	23	16	16 ELISA home made	
Luxembourg	53	25	18	10	8 AutoDelfia	
Bio-rad	72	24	20	13	11 Quantase	
Perkin Elmer	47	21	16	9	8 AutoDelfia	
CDC	--	--	--	--	-- Delfia	
Izmir	68	17	11	7	5 Neogenesis	
x	51.3	22.8	16.6	9.7	8.5	
sd	9	3	3	3	3	
cv %	18	14	18	26	30	

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/2	0	0	Brahms
Bilthoven	2011/2	606680	606088	AutoDelfia
Capelle	2011/2	606680	606088	Autodelfia
Tilburg	2011/2	607623	607048	AD
Zwolle	2011/2	606475	605635	Auto Delfia
Antwerpen	2011/2	0	0	0
Brugge	2011/2	607341	606538	Perkin Elmer Delfia
Brussel ULB	2011/2	608757	04/02/3563	Autodelfia
Brussel UCL	2011/2	184	0	BioRad Quantase
Gent	2011/2	0	0	AutoDelfia
Liege	2011/2	0	0	ELISA home-made
Luxembourg	2011/2	608324	607731	PE AD
Bio-rad	2011/2	186	0	0
Perkin Elmer	2011/2	610382	0	AutoDELFLIA
Izmir	2011/2	0	0	0
Izmir	2011/2	0	0	Neogenesis

observed/expected (%)	B411	B412	B413	B414	B415	mean	Remarks
Amsterdam	94	96	94	80	113	95	
Bilthoven	126	125	138	120	125	127	
Capelle	88	83	94	90	100	91	
Tilburg	88	79	81	70	75	79	
Zwolle	92	92	106	80	88	91	
Antwerpen	94	100	100	90	88	94	
Brugge	79	85	89	74	78	81	
Brussel ULB	98	102	106	98	99	101	
Brussel UCL	107	90	106	123	136	112	
Gent	85	93	96	80	96	90	
Liege	107	118	141	162	201	146	
Luxembourg	107	105	110	95	100	103	
Bio-rad	144	98	127	130	135	127	
Perkin Elmer	93	86	99	89	94	92	
CDC	--	--	--	--	--	--	
Izmir	136	70	69	68	68	82	

Specimen nr	Classification					Remarks
	B411	B412	B413	B414	B415	
Amsterdam	3	3	2	2	2	
Bilthoven	3	3	3	2	2	
Capelle	3	2	2	2	2	
Tilburg	3	2	2	1	1	
Zwolle	3	3	2	2	1	
Antwerpen	2	2	1	1	1	
Brugge	3	2	1	1	1	
Brussel ULB	3	2	2	1	1	
Brussel UCL	3	3	2	1	1	
Gent	3	2	2	1	1	
Liège	3	3	3	1	1	
Luxembourg	3	3	2	1	1	
Bio-rad	3	3	2	2	2	
Wallac	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	3	2	1	1	1	

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

expected classifications with measured concentrations					
B411	B412	B413	B414	B415	
3	3	2	2	2	
3	3	3	2	2	
3	2	2	2	2	
3	2	2	1	1	
3	3	2	2	1	
3	3	2	2	1	
3	2	2	1	1	
3	3	2	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	3	3	2	2	
3	3	2	2	2	
3	3	2	2	2	
3	2	2	2	2	
--	--	--	--	--	
3	2	2	1	1	

Specimen nr	Action (based only on TSH)					Remarks
	B411	B412	B413	B414	B415	
Amsterdam	6	6	5	5	5	
Bilthoven	6	6	6	5	5	
Capelle	6	5	5	5	5	
Tilburg	6	5	5	1	1	
Zwolle	6	6	5	5	1	
Antwerpen	5	5	1	1	1	
Brugge	6	5	1	1	1	
Brussel ULB	6	5	5	1	1	
Brussel UCL	6	6	5	1	1	
Gent	6	5	5	1	1	
Liège	--	--	--	--	--	
Luxembourg	6	6	5	1	1	
Bio-rad	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	6	5	1	1	1	

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

expected actions wrt measured concentrations					
B411	B412	B413	B414	B415	
6	6	5	5	5	
6	6	6	5	5	
6	5	5	5	5	
6	5	5	1	1	
6	6	5	5	1	
6	6	5	5	1	
6	5	5	1	1	
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	5	5	5	5	
6	5	5	5	5	
--	--	--	--	--	
6	5	5	1	1	

OHP-controls RIVM survey 2011/2

Specimen nr	B411	B412	B413	B414	B415	Method	Remarks
Nominal nmol/l blood	2	20	39	77	202		
Amsterdam	<2	12	28	47	148	AutoDelfia	
Bilthoven	3	11	23	47	120	AutoDelfia	
Capelle	2	12	26	47	133	AutoDelfia	
Tilburg	2	13	24	49	149	AutoDelfia	
Zwolle	2	14	28	54	171	AutoDelfia	
Antwerpen	1	11	28	53	164	AutoDelfia	
Brugge	2	13	25	61	155	AutoDelfia	
Brussel ULB	2	20	42	77	271	AutoDelfia	
Brussel UCL	--	--	--	--	--		
Gent	4	15	29	62	130	AutoDelfia	
Liege	9	22	48	69	178	ELISA home made	
Luxembourg	2	14	28	52	159	AutoDelfia	
Bio-rad	4	19	36	61	215	Quantase	
Perkin Elmer	2	14	27	53	172	AutoDelfia	
CDC	--	--	--	--	--	AutoDelfia	
Izmir	2	17	39	71	168	Neogenesis	
x	3	15	31	57	167		
sd	1.9	3.2	7.2	9.3	36.8		
cv %	70	22	23	16	22		

observed/expected (%)	B411	B412	B413	B414	B415	mean	Remarks
Amsterdam	--	59	72	61	73	67	
Bilthoven	--	54	59	61	60	59	
Capelle	--	59	67	61	66	63	
Tilburg	--	64	62	64	74	66	
Zwolle	--	69	72	71	85	74	
Antwerpen	--	54	72	69	81	69	
Brugge	--	66	65	80	77	72	
Brussel ULB	--	100	108	100	135	111	
Brussel UCL	--	--	--	--	--	--	
Gent	--	73	75	80	65	73	
Liege	--	106	123	90	88	102	
Luxembourg	--	68	72	68	79	72	
Bio-rad	--	94	92	80	107	93	
Perkin Elmer	--	70	70	69	85	74	
CDC	--	--	--	--	--	--	
Izmir	--	83	101	93	84	90	

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/2	607872	607167	AD
Bilthoven	2011/2	608959	608260	AutoDelfia
Capelle	2011/2	608804	608260	Autodelfia
Tilburg	2011/2	609733	609322	AD
Zwolle	2011/2	609229	607994	Auto Delfia
Antwerpen	2011/2	0	0	0
Brugge	2011/2	607608	605047	Perkin Elmer Delfia
Brussel ULB	2011/2	608107	607047	Autodelfia
Brussel UCL	2011/2	0	0	0
Gent	2011/2	0	0	AutoDelfia
Liege	2011/2	0	0	ELISA home-made
Luxembourg	2011/2	608804	608260	PE AD
Bio-rad	2011/2	124	0	0
Perkin Elmer	2011/2	608563	0	AutoDELFLIA
0	0	0	0	0
Izmir	2011/2	0	0	Neogenesis

Classification

Specimen nr	B411	B412	B413	B414	B415	Remarks
Amsterdam	1	1	2	2	3	
Bilthoven	1	1	1	2	3	
Capelle	1	1	2	2	3	
Tilburg	1	1	1	2	3	
Zwolle	1	1	2	3	3	
Antwerpen	1	1	3	3	3	
Brugge	1	1	2	3	3	
Brussel ULB	1	1	2	3	3	
Brussel UCL	--	--	--	--	--	
Gent	1	1	3	3	3	
Liège	1	1	1	2	3	
Luxembourg	1	1	3	3	3	
Bio-rad	1	1	2	3	3	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	1	1	3	3	3	

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

expected classifications with measured concentrations				
B411	B412	B413	B414	B415
1	1	2	2	3
1	1	1	2	3
1	1	2	2	3
1	1	1	2	3
1	1	2	2	3
1	1	2	2	3
1	1	2	3	3
1	1	2	3	3
--	--	--	--	--
1	1	2	3	3
1	1	2	3	3
1	1	2	2	3
1	1	2	3	3
1	1	2	2	3
--	--	--	--	--
1	1	2	3	3