

PKU-controls RIVM  
survey2011/1

Specimen nr	B406	B407	B408	B409	B410	Method	Remarks
Nominal mmol/l blood	114	164	264	464	864		
Amsterdam	117	155	258	411	885	MS/MS PE underivatized	
Bilthoven	131	163	289	454	769	MS/MS PE underivatized	
Capelle	99	124	205	344	975	MS/MS PE underivatized	
Tilburg	122	169	289	440	879	MS/MS PE underivatized	
Zwolle	106	151	248	441	764	MS/MS PE underivatized	
Antwerpen	--	--	--	--	--	MS/MS PE underivatized	
Brugge	123	183	297	456	794	MS/MS Derivatized	
Brussel ULB	5751	8869	15347	23701	39109	MS/MS Derivatized	
Brussel UCL	90	115	190	340	611	MS/MS Derivatized	
Gent	93	119	210	374	689	MS/MS Derivatized	
Liege	108	166	255	390	779	MS/MS Derivatized	
Luxembourg	114	166	295	465	903	MS/MS PE underivatized	
Bio-Rad	142	192	321	542	979	Quantase	
Perkin Elmer	--	--	--	--	--	Victor-Delfia	
CDC	--	--	--	--	--		
Izmir	111	188	275	472	903	Biochrom AA	
x	547	828	1421	2218	3772		
cv %	275	280	283	280	270		

observed/expected (%)	B406	B407	B408	B409	B410	mean	Remarks
Amsterdam	103	95	98	89	102	97	
Bilthoven	115	99	109	98	89	102	
Capelle	87	76	78	74	113	85	
Tilburg	107	103	109	95	102	103	
Zwolle	93	92	94	95	88	92	
Antwerpen	--	--	--	--	--	--	
Brugge	108	112	113	98	92	104	
Brussel ULB	5045	5408	5813	5108	4526	5180	
Brussel UCL	79	70	72	73	71	73	
Gent	81	73	80	81	80	79	
Liege	95	101	96	84	90	93	
Luxembourg	100	101	112	100	104	103	
Bio-Rad	125	117	122	117	113	119	
Perkin Elmer	--	--	--	--	--	--	
CDC	--	--	--	--	--	--	
Izmir	97	115	104	102	105	104	

diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/1	605975	56/AC604509	MSMS
Bilthoven	2011/1	605975	605656	NeoBase; underivatized
Capelle	2011/1	605975	56/AC604509	PerkinElmer Neobase non deriv.
Tilburg	2011/1	605975	56/604509	MSMS
Zwolle	2011/1	605975	605656	MS/MS PE underivatized
0	0	0	0	0
Brugge	2011/1	in house	in house	LC/MSMS Derivatisation
Brussel ULB	2011/1	0	0	MSMS + derivatisation
Brussel UCL	2011/1	0	0	MSMS derivatized non kit
Gent	2011/1	in-house	in-house	LC-MSMS derivatized non-kit
Liege	2011/1	0	0	LC-MS-MS - Chromsystems derivatized
Luxembourg	2011/1	605975	605656	AutoDelfia
Bio-rad	2011/1	0	1627	0
0	0	0	0	0
CDC	2011/1	0	0	0
Izmir	2011/1	Biochrom		Sigma Biochrom AAA

Classification

Specimen nr	B406	B407	B408	B409	B410	Remarks
Amsterdam	1	1	2	3	3	
Bilthoven	1	1	2	3	3	
Capelle	1	1	2	2	3	
Tilburg	1	1	2	3	3	
Zwolle	1	1	2	3	3	
Antwerpen	--	--	--	--	--	
Brugge	1	3	3	3	3	
Brussel ULB	1	2	3	3	3	
Brussel UCL	1	1	2	3	3	
Gent	1	1	3	3	3	
Liège	1	3	3	3	3	
Luxembourg	1	1	2	2	3	
Bio-Rad	1	2	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

B406	B407	B408	B409	B410
1	1	2	3	3
1	1	2	3	3
1	1	2	2	3
1	1	2	3	3
1	1	2	3	3
--	--	--	--	--
1	1	2	3	3
3	3	3	3	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

Action

Specimen nr	B406	B407	B408	B409	B410	Remarks
Amsterdam	1	1	5	6	6	
Bilthoven	1	1	5	6	6	
Capelle	1	1	5	5	6	
Tilburg	1	1	5	6	6	
Zwolle	1	1	5	6	6	
Antwerpen	--	--	--	--	--	
Brugge	1	5	5	5	5 + 6	
Brussel ULB	1	5	6	6	6	
Brussel UCL	1	1	5	6	6	
Gent	1	1	5+6	6	6	
Liège	1	5	6	6	6	
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

B406	B407	B408	B409	B410
1	1	5	6	6
1	1	5	6	6
1	1	5	5	6
1	1	5	6	6
1	1	5	6	6
--	--	--	--	--
1	1	5	6	6
6	6	6	6	6
1	1	1	5	6
1	1	5	5	6
1	1	5	5	6
1	1	5	6	6
1	1	5	6	6
--	--	--	--	--
--	--	--	--	--
1	1	5	6	6

# T4-TBG-controls RIVM survey 2011/1

Specimen nr	B406	B407	B408	B409	B410 Method	Remarks
Nominal T4 nmol/l blood	18	72	90	36	54	
Amsterdam	19	80	91	31	58 AutoDelfia	
Bilthoven	13	60	72	31	46 AutoDelfia	
Capelle	15	58	76	27	44 AutoDelfia	
Tilburg	16	62	90	34	50 AutoDelfia	
Zwolle	11	62	74	29	43 AutoDelfia	
Brussel ULB	17	65	88	34	61 autoDelfia	
CDC	16	65	82	29	51 PerkinElmer Delfia	
Bio-rad	--	--	--	--	-- Quantase	
Perkin Elmer	--	--	--	--	-- AutoDelfia	
Izmir	19	95	112	35	67 Neogenesis	
x	15	65	82	31	50	
sd	2	7	7	2	6	
vc %	16	10	9	8	13	

observed/expected (%)	B406	B407	B408	B409	B410	mean	Remarks
Amsterdam	--	111	101	86	107	101	
Bilthoven	--	83	80	86	85	84	
Capelle	--	81	84	75	81	80	
Tilburg	--	86	100	94	93	93	
Zwolle	--	86	82	81	80	82	
Brussel ULB	--	91	98	96	113	99	
CDC	--	90	91	82	94	89	
Bio-rad	--	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	--	
Izmir	--	132	124	97	124	119	

### SD-value

	B406	B407	B408	B409	B410	Remarks
Amsterdam	-3.5	-0.2	0.4	-2.9	-1.4	
Bilthoven	-3.9	-1.5	-0.9	-3.0	-2.2	
Capelle	-3.7	-1.4	-0.5	-3.1	-2.2	
Tilburg	-3.8	-1.6	-0.2	-2.9	-2.2	
Zwolle	-4.0	-1.5	-0.9	-3.1	-2.4	

### Classification based on T4

	B406	B407	B408	B409	B410	Remarks
Amsterdam	3	1	1	4	4	
Bilthoven	3	1	1	3	2	
Capelle	3	1	1	3	4	
Tilburg	3	4	1	4	4	
Zwolle	3	1	1	3	4	
Brussel ULB	3	1	1	2	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	2011/1	605881	605548	AD
Bilthoven	2011/1	606533	605548	AutoDelfia
Capelle	2011/1	606533	605548	Autodelfia
Tilburg	2011/1	606886	603891	AD
Zwolle	2011/1	604763	602887	AutoDelfia
Brussel ULB	2011/1	0	00/01/1900	Autodelfia
CDC	2011/1	606611		CDC PerkinElmer Delfia
Bio-rad	2011/1	0	0	0
		0	0	0
Izmir	18-Mar-11	0	0	Neogenesis

### expected classifications with measured concentrations

B406	B407	B408	B409	B410
3	1	1	4	1
3	1	1	3	4
3	1	1	3	4
3	4	1	4	4
3	1	1	3	4

	Action based on T4					Remarks
	B406	B407	B408	B409	B410	
Amsterdam	4	1	1	3	2	
Bilthoven	4	2	2	4	3	
Capelle	4	2	1	4	3	
Tilburg	4	3	1	3	3	
Zwolle	4	2	2	4	3	
Brussel ULB	5	1	1	5	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

Tabel 11 (continued)							
Specimen nr	B406	B407	B408	B409	B410	Method	Remarks
Nominal TBG nmol/l serum	0	51	101	202	405		
Amsterdam	--	--	--	--	--	Eiken	
Bilthoven	<5	55	107	163	273	Eiken	
Capelle	<20	40	93	200	299	Eiken	
Tilburg	<10	44	89	195	424	Eiken	
Zwolle	5	47	103	211	384	Eiken	

observed/expected (%)						mean	Remarks
Amsterdam	--	--	--	--	--	--	
Bilthoven	--	109	106	81	67	91	
Capelle	--	79	92	99	74	86	
Tilburg	--	87	88	97	105	94	
Zwolle	--	93	102	104	95	99	

T4/TBG ratio					
Amsterdam	--	--	--	--	--
Bilthoven	>99	---	---	12.9	10.6
Capelle	>65	--	--	10.0	9.7
Tilburg	>130	79.5	x	11.3	6.8
Zwolle	55.0	76.6	40.8	9.5	7.0

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

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

expected actions wrt measured concentrations					
B406	B407	B408	B409	B410	
4	1	1	3	2	
4	2	2	4	3	
4	2	1	4	3	
4	3	1	3	3	
4	2	2	4	3	

expected classifications wrt measured concentrations					
B406	B407	B408	B409	B410	
5	5	5	1	5	
5	5	5	5	2	
5	5	5	5	2	
5	1	5	2	2	
5	5	5	5	2	

expected actions wrt measured concentrations					
B406	B407	B408	B409	B410	
1	1	1	1	1	
1	1	1	1	5	
1	1	1	1	5	
1	1	1	5	5	
1	1	1	1	5	

## TSH-controls RIVM survey 2011/1

Specimen nr	B406	B407	B408	B409	B410	Method	Remarks
Nominal mIU/l blood	40	12	18	27	20		
Amsterdam	47	10	17	25	20	BRAHMS	
Bilthoven	51	14	20	30	21	AutoDelfia	
Capelle	39	12	18	24	16	AutoDelfia	
Tilburg	40	11	16	24	18	AutoDelfia	
Zwolle	31	9	14	22	14	AutoDelfia	
Antwerpen	--	--	--	--	--	AutoDelfia	
Brugge	35	11	16	27	17	AutoDelfia	
Brussel ULB	20	6	9	13	9	AutoDelfia	
Brussel UCL	45	15	22	32	24	BioRad Quantase	
Gent	34	11	15	22	15	AutoDelfia	
Liege	39	14	18	28	20	ELISA home made	
Luxembourg	35	11	16	26	19	AutoDelfia	
Bio-rad	36	14	20	29	22	Quantase	
Perkin Elmer	--	--	--	--	--	AutoDelfia	
CDC	35	11	15	22	18	Delfia	
Izmir	27	8	13	19	15	Neogenesis	
x	36.7	11.2	16.3	24.5	17.8		
sd	8	3	3	5	4		
cv %	21	23	21	19	21		

observed/expected (%)	B406	B407	B408	B409	B410	mean	Remarks
Amsterdam	118	83	94	93	100	98	
Bilthoven	128	117	111	111	105	114	
Capelle	98	100	100	89	80	93	
Tilburg	100	92	89	89	90	92	
Zwolle	78	75	78	81	70	76	
Antwerpen	--	--	--	--	--	--	
Brugge	88	91	88	99	87	90	
Brussel ULB	49	46	47	47	44	47	
Brussel UCL	112	128	124	117	122	121	
Gent	86	88	83	80	77	83	
Liege	97	117	102	104	102	104	
Luxembourg	88	93	86	97	96	92	
Bio-rad	91	121	113	107	112	109	
Perkin Elmer	--	--	--	--	--	--	
CDC	86	89	82	83	89	86	
Izmir	68	67	72	70	75	70	

### diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/1	0	0	Brahms
Bilthoven	2011/1	602731	601356	AutoDelfia
Capelle	2011/1	603405	602370	Autodelfia
Tilburg	2011/1	607407	606088	AD
Zwolle	2011/1	606272	605635	AutoDelfia
	0	0	0	0
Brugge	2011/1	604150	603454	Perkin Elmer Delfia
Brussel ULB	2011/1	0	00/01/1900	Autodelfia
Brussel UCL	2011/1	0	0	Biorad Quantase
Gent	2011/1	606680	606088	AutoDelfia
Liege	2011/1	0	0	ELISA home made
Luxembourg	2011/1	604888	604332	AutoDelfia
Bio-rad	2011/1	182	0	0
	0	0	0	0
CDC	2011/1	606461		CDC PerkinElmer Delfia
Izmir	2011/1	0	0	Neogenesis

Specimen nr	Classification					Remarks
	B406	B407	B408	B409	B410	
Amsterdam	3	2	2	3	2	
Bilthoven	3	2	2	3	2	
Capelle	3	2	2	3	2	
Tilburg	3	2	2	3	2	
Zwolle	3	2	2	3	2	
Antwerpen	--	--	--	--	--	
Brugge	3	1	2	3	2	
Brussel ULB	3	1	2	3	2	
Brussel UCL	3	2	3	3	3	
Gent	3	1	1	2	2	
Liège	2	1	1	2	2	
Luxembourg	3	1	2	3	2	
Bio-rad	3	2	3	3	3	
Wallac	--	--	--	--	--	
CDC	3	1	3	3	3	
Izmir	3	1	2	3	3	

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

Specimen nr	Action (based only on TSH)					Remarks
	B406	B407	B408	B409	B410	
Amsterdam	6	5	5	6	5	
Bilthoven	6	5	5	6	5	
Capelle	6	5	5	6	5	
Tilburg	6	5	5	6	5	
Zwolle	6	5	5	6	5	
Antwerpen	--	--	--	--	--	
Brugge	5	1	5	5	5	
Brussel ULB	6	1	5	6	5	
Brussel UCL	6	5	6	6	6	
Gent	6	1	1	5	5	
Liège	5	1	1	5	5	
Luxembourg	6	1	5	6	5	
Bio-rad	--	--	--	--	--	
Perkin Elmer	--	--	--	--	--	
CDC	--	--	--	--	--	
Izmir	6	1	5	6	6	

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					
B406	B407	B408	B409	B410	
3	2	2	3	2	
3	2	2	3	2	
3	2	2	3	2	
3	2	2	3	2	
3	2	2	3	2	
--	--	--	--	--	
3	2	2	3	2	
2	1	2	2	2	
3	2	3	3	3	
3	2	2	3	2	
3	2	2	3	2	
3	2	2	3	2	
3	2	2	3	3	
--	--	--	--	--	
3	2	2	3	2	
3	2	2	2	2	

expected actions wrt measured concentrations					
B406	B407	B408	B409	B410	
6	5	5	6	5	
6	5	5	6	5	
6	5	5	6	5	
6	5	5	6	5	
6	5	5	6	5	
--	--	--	--	--	
6	5	5	6	5	
5	1	5	5	5	
6	5	6	6	6	
6	5	5	6	5	
6	5	5	6	5	
6	5	5	6	5	
6	5	5	6	6	
--	--	--	--	--	
6	5	5	6	5	
6	5	5	5	5	

## OHP-controls RIVM survey 2011/1

Specimen nr	B406	B407	B408	B409	B410	Method	Remarks
Nominal nmol/l blood	14	27	52	102	302		
Amsterdam	9	18	38	67	232	AutoDelfia	
Bilthoven	11	20	39	75	218	AutoDelfia	
Capelle	10	18	39	77	234	AutoDelfia	
Tilburg	6	21	38	69	221	AutoDelfia	
Zwolle	9	18	39	77	252	AutoDelfia	
Antwerpen	--	--	--	--	--	AutoDelfia	
Brugge	10	19	40	80	235	AutoDelfia	
Brussel ULB	12	30	60	120	335	AutoDelfia	
Brussel UCL	--	--	--	--	--		
Gent	8	17	37	69	283	AutoDelfia	
Liege	13	28	52	93	248	ELISA home made	
Luxembourg	11	18	36	74	239	AutoDelfia	
Bio-rad	16	26	51	93	346	Quantase	
Perkin Elmer	--	--	--	--	--	AutoDelfia	
CDC	--	--	--	--	--	AutoDelfia	
Izmir	14	25	66	117	264	Neogenesis	
x	11	21	44	84	259		
sd	2.5	4.2	9.7	17.2	40.4		
cv %	23	20	22	21	16		

observed/expected (%)	B406	B407	B408	B409	B410	mean	Remarks
Amsterdam	64	68	74	66	77	70	
Bilthoven	79	75	76	74	72	75	
Capelle	71	68	76	76	78	74	
Tilburg	43	79	74	68	73	67	
Zwolle	64	68	76	76	84	73	
Antwerpen	--	--	--	--	--	--	
Brugge	74	72	77	79	78	76	
Brussel ULB	87	113	116	118	111	109	
Brussel UCL	--	--	--	--	--	--	
Gent	60	64	71	68	94	71	
Liege	90	106	101	91	82	94	
Luxembourg	79	69	70	73	79	74	
Bio-rad	111	96	99	92	115	103	
Perkin Elmer	--	--	--	--	--	--	
CDC	--	--	--	--	--	--	
Izmir	100	94	128	115	88	105	

## diverse controle's

controle inzender	controle ronde	lot kit	lot calibrator	method
Amsterdam	2011/1	606183	605634	AD
Bilthoven	2011/1	603819	603216	AutoDelfia
Capelle	2011/1	606852	606581	Autodelfia
Tilburg	2011/1	607561	607047	AD
Zwolle	2011/1	606852	606581	AutoDelfia
0	0	0	0	0
Brugge	2011/1	605033	604680	Perkin Elmer Delfia
Brussel ULB	2011/1	0	0	Autodelfia
Brussel UCL	2011/1	0	0	0
Gent	2011/1	606183	605634	AutoDelfia
Liege	2011/1	0	0	ELISA home made
Luxembourg	2011/1	601520	6012209	NeoBase non derivatized MSMS Kit
Bio-rad	2011/1	122	0	0
0	0	0	0	0
CDC	2011/1	0	0	0
Izmir	2011/1	0	0	Neogenesis

Classification

Specimen nr	B406	B407	B408	B409	B410	Remarks
Amsterdam	1	1	2	3	3	
Bilthoven	1	1	2	3	3	
Capelle	1	1	2	3	3	
Tilburg	1	1	2	3	3	
Zwolle	1	1	2	3	3	
Antwerpen	--	--	--	--	--	
Brugge	1	1	3	3	3	
Brussel ULB	1	5	5	6	6	
Brussel UCL	--	--	--	--	--	
Gent	1	1	1	3	3	
Liège	1	1	1	3	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					
B406	B407	B408	B409	B410	
1	1	2	3	3	
1	1	2	3	3	
1	1	2	3	3	
1	1	2	3	3	
1	1	2	3	3	
--	--	--	--	--	
1	1	2	3	3	
1	2	3	3	3	
--	--	--	--	--	
1	1	2	3	3	
1	2	2	3	3	
1	1	2	3	3	
1	2	2	3	3	
--	--	--	--	--	
--	--	--	--	--	
1	2	3	3	3	