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Level IV Data Package

MWH Group 242355

Method: EPA 218.6

2805280375
2805280376

No.	Sample Name	Time	Dil.Fac.	Amount	Comment	Analyst:	tlh
				CRVI-LOW			
				UV_VIS_1		Criteria	
1,	Standard 1 - 0.1 ppb	04/07/08 10:08,	1.0,	0.097	Diluted from Std. 3		
2,	Standard 2 - 0.2ppb	04/07/08 10:16,	1.0,	0.183	TLH071231-1		
3,	Standard 3 - 2.0 ppb	04/07/08 10:24,	1.0,	1.942	TLH071231-2		
4,	Standard 4 - 10 ppb	04/07/08 10:32,	1.0,	10.047	TLH071231-3		
5,	Standard 5 - 20 ppb	04/07/08 10:40,	1.0,	20.111	TLH071231-4		
6,	Standard 6 - 50ppb	04/07/08 10:48,	1.0,	49.949	TLH071231-5		
7,	IPC 20	05/28/08 08:25,	1.0,	19.817			
8,	LRB	05/28/08 08:33,	1.0,	n.a.			
9,	LRB BUFFER	05/28/08 08:41,	1.0,	n.a.			
10,	MRL 0.1ppb	05/28/08 08:49,	1.0,	0.101			
11,	LCS 2.0ppb	05/28/08 08:57,	1.0,	2.026	TLH0710180-2		
12,	LCS 2.0ppb Dup	05/28/08 09:05,	1.0,	2.013			
13,	2805280088	05/28/08 09:14,	1.0,	n.a.			
14,	2805270628	05/28/08 09:22,	1.0,	1.115			
15,	2805270461	05/28/08 09:30,	1.0,	2.082			
16,	2805270467	05/28/08 09:38,	1.0,	1.238			
17,	2805270466	05/28/08 09:46,	1.0,	2.286			
18,	2805270468	05/28/08 09:54,	1.0,	2.588			
19,	2805270468_MS	05/28/08 10:02,	1.0,	4.607	2.02 - 101% recovery	MRL 50%-150%	
20,	2805270468_MSD	05/28/08 10:10,	1.0,	4.656	2.07 - 103% recovery	0.05 - 0.15ppb	
21,	IPC 20	05/28/08 10:18,	1.0,	19.873		LCS 90%-110%	
22,	LRB	05/28/08 10:26,	1.0,	n.a.		Range: 1.80 - 2.20	
23,	2805280375	05/28/08 13:25,	1.0,	n.a.		MS/MSD 90%-110%	
24,	2805280376	05/28/08 13:33,	1.0,	42.304		True Value = 2.0	
25,	2805280428 (1:5)	05/28/08 13:41,	5.0,	46.493		IPC 95%-105%	
26,	IPC 20	05/28/08 13:49,	1.0,	19.852		20ppb - 19-21ppb	
27,	LRB	05/28/08 13:57,	1.0,	n.a.		10ppb - 9.5-10.5 ppb	
28,	2805280349	05/28/08 16:48,	1.0,	5.743			
29,	IPC 20	05/28/08 16:56,	1.0,	19.975			
30,	LRB	05/28/08 17:04,	1.0,	n.a.			

Title: CRVI-LOW
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_ CRVI-LOW\2008\May
Timebase: IC-#5
#Samples: 30
Created: 5/28/2008 8:25:00 AM by tlh
(Modified, not saved)

No.	Inj. Date/Time	*Analyst
1	4/7/2008 10:08:24 AM	tlh
2	4/7/2008 10:16:30 AM	tlh
3	4/7/2008 10:24:36 AM	tlh
4	4/7/2008 10:32:42 AM	tlh
5	4/7/2008 10:40:48 AM	tlh
6	4/7/2008 10:48:54 AM	tlh
7	5/28/2008 8:25:29 AM	tlh
8	5/28/2008 8:33:35 AM	tlh
9	5/28/2008 8:41:41 AM	tlh
10	5/28/2008 8:49:47 AM	tlh
11	5/28/2008 8:57:53 AM	tlh
12	5/28/2008 9:05:59 AM	tlh
13	5/28/2008 9:14:05 AM	tlh
14	5/28/2008 9:22:11 AM	tlh
15	5/28/2008 9:30:17 AM	tlh
16	5/28/2008 9:38:23 AM	tlh
17	5/28/2008 9:46:29 AM	tlh
18	5/28/2008 9:54:35 AM	tlh
19	5/28/2008 10:02:41 AM	tlh
20	5/28/2008 10:10:47 AM	tlh
21	5/28/2008 10:18:53 AM	tlh
22	5/28/2008 10:26:59 AM	tlh
23	5/28/2008 1:25:06 PM	tlh
24	5/28/2008 1:33:11 PM	tlh
25	5/28/2008 1:41:17 PM	tlh
26	5/28/2008 1:49:23 PM	tlh
27	5/28/2008 1:57:29 PM	tlh
28	5/28/2008 4:48:06 PM	tlh
29	5/28/2008 4:56:13 PM	tlh
30	5/28/2008 5:04:19 PM	tlh

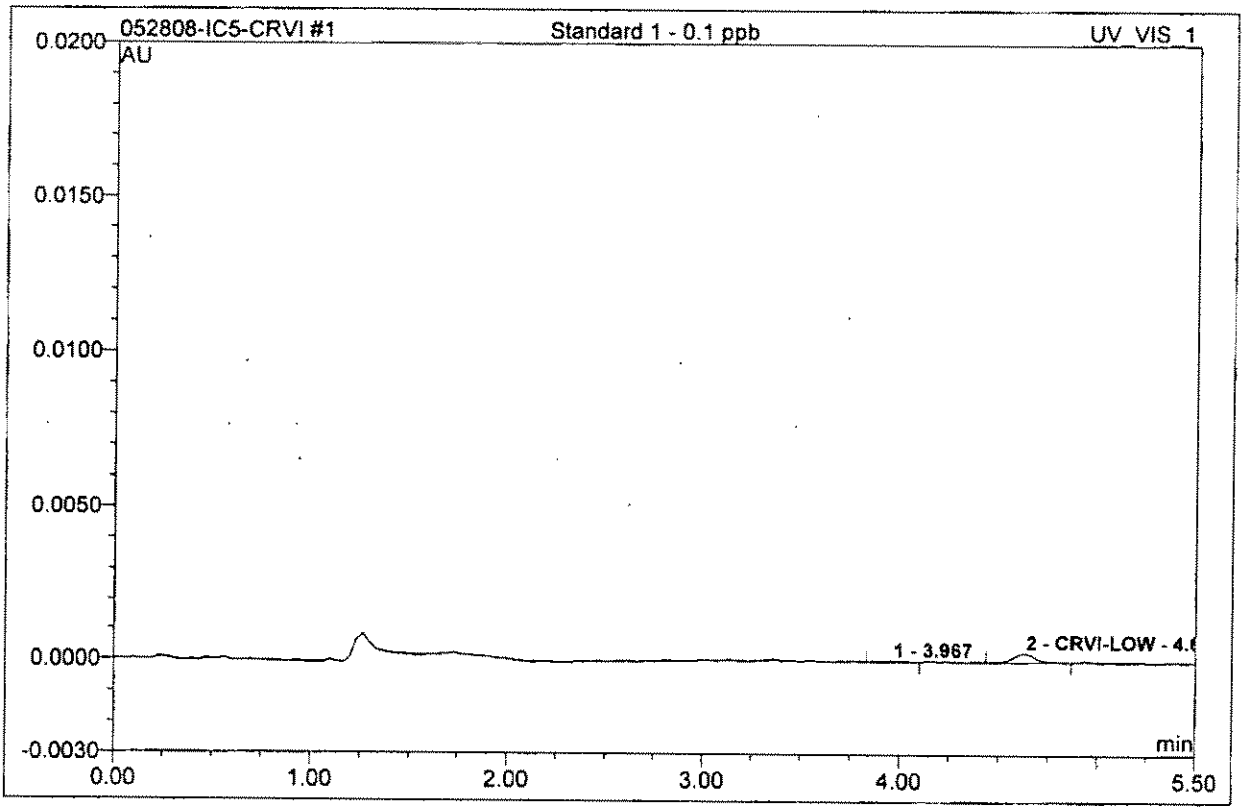
Sequence: 052808-IC5-CRVI
Operator: tlh
Printed: 5/30/2008 7:56:11 AM

Title: CRVI-LOW
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_ CRVI-LOW\2008\May
Timebase: IC-#5
#Samples: 30
Created: 5/28/2008 8:25:00 AM by tlh
(Modified, not saved)

No.	Name	Dil. Factor	Type	Comment	Program	Method	Status
1	Standard 1 - 0.1 ppb	1.0000	Standard	Diluted from Std. 3	CRVI-LOW-loop	1-IC#5-CRVI	Finished
2	Standard 2 - 0.2ppb	1.0000	Standard	TLH071231-1	CRVI-LOW-loop	1-IC#5-CRVI	Finished
3	Standard 3 - 2.0 ppb	1.0000	Standard	TLH071231-2	CRVI-LOW-loop	1-IC#5-CRVI	Finished
4	Standard 4 - 10 ppb	1.0000	Standard	TLH071231-3	CRVI-LOW-loop	1-IC#5-CRVI	Finished
5	Standard 5 - 20 ppb	1.0000	Standard	TLH071231-4	CRVI-LOW-loop	1-IC#5-CRVI	Finished
6	Standard 6 - 50ppb	1.0000	Standard	TLH071231-5	CRVI-LOW-loop	1-IC#5-CRVI	Finished
7	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
8	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
9	LRB BUFFER	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
10	MRL 0.1ppb	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
11	LCS 2.0ppb	1.0000	Unknown	TLH0710180-2	CRVI-LOW-loop	1-IC#5-CRVI	Finished
12	LCS 2.0ppb Dup	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
13	2805280088	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
14	2805270628	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
15	2805270461	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
16	2805270467	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
17	2805270466	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
18	2805270468	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
19	2805270468_MS	1.0000	Unknown	2.02 - 101% recovery	CRVI-LOW-loop	1-IC#5-CRVI	Finished
20	2805270468_MSD	1.0000	Unknown	2.07 - 103% recovery	CRVI-LOW-loop	1-IC#5-CRVI	Finished
21	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
22	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
23	2805280375	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
24	2805280376	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
25	2805280428 (1:5)	5.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
26	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
27	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
28	2805280349	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
29	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished
30	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CRVI	Finished

1 Standard 1 - 0.1 ppb

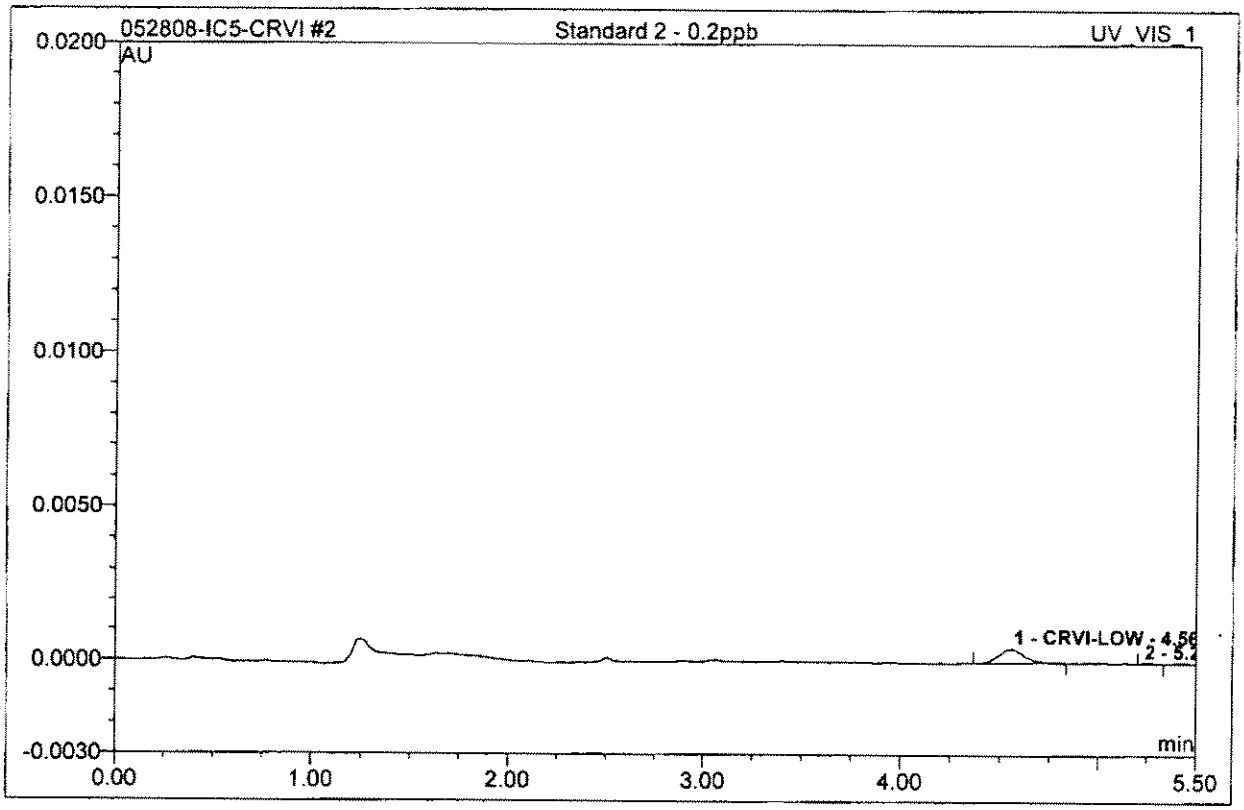
Sample Name:	**Standard 1 - 0.1 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:08**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.97	n.a.	0.000	0.0000038	9.18	n.a.	BMB
2	4.63	CRVI-LOW	0.000	0.0000376	90.82	0.097	BMB
Total:			0.000	0.000	100.00	0.097	

2 Standard 2 - 0.2ppb

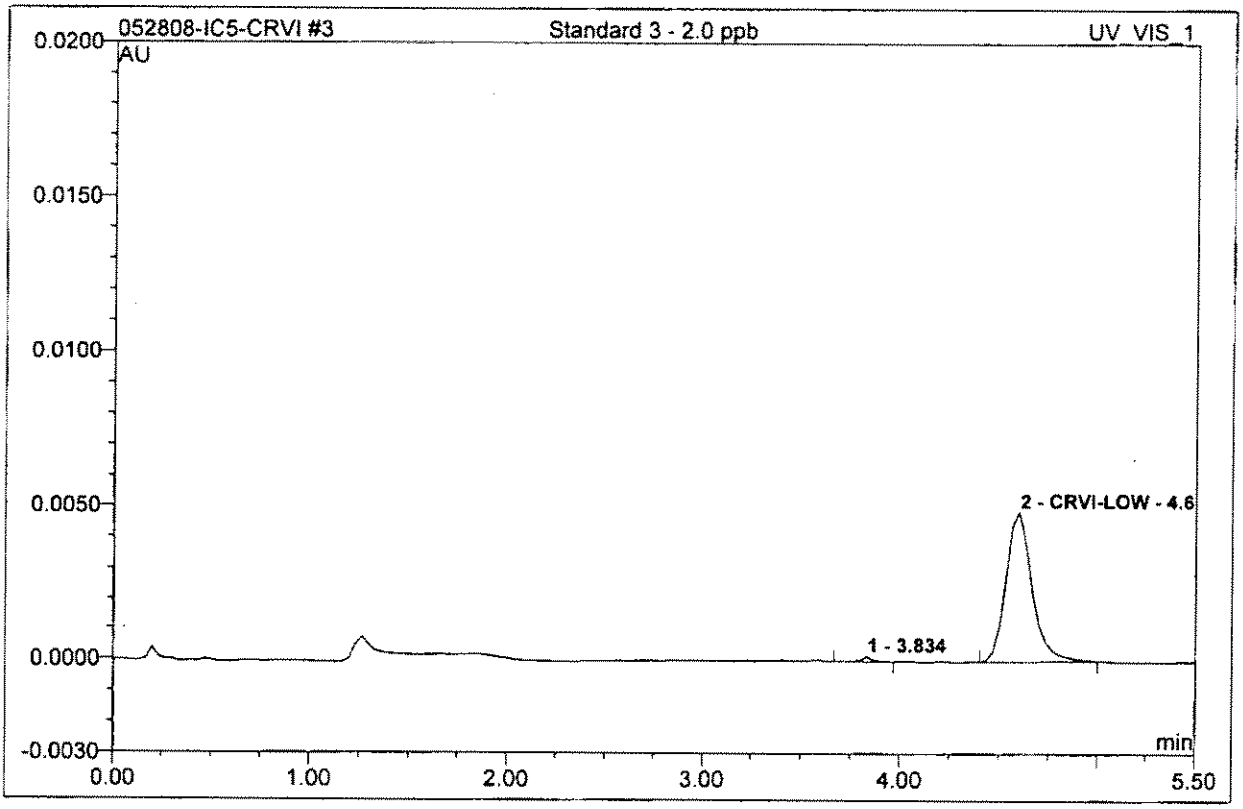
Sample Name:	**Standard 2 - 0.2ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:16**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.000	0.0000710	96.49	0.183	BMB
2	5.23	n.a.	0.000	0.0000026	3.51	n.a.	BMB
Total:			0.000	0.000	100.00	0.183	

3 Standard 3 - 2.0 ppb

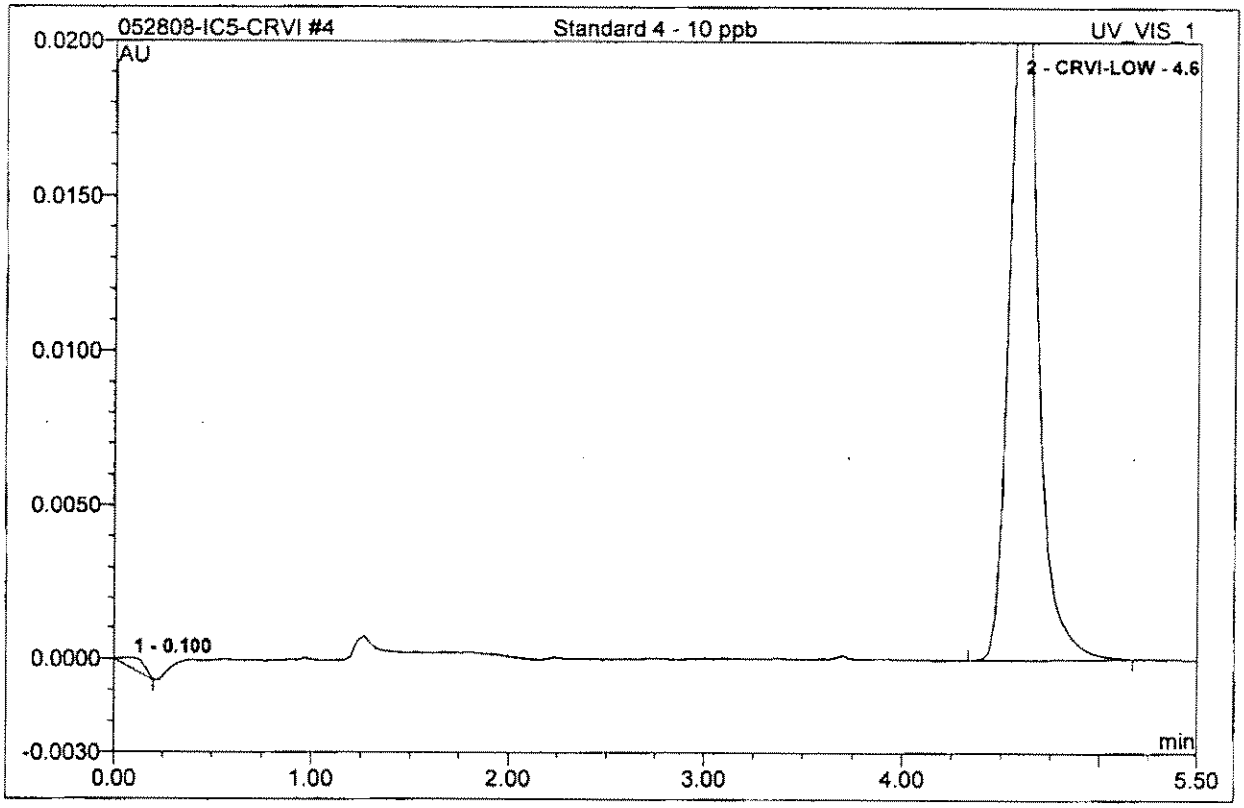
Sample Name:	**Standard 3 - 2.0 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:24**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.83	n.a.	0.000	0.0000095	1.24	n.a.	BMB
2	4.60	CRVI-LOW	0.005	0.0007550	98.76	1.942	BMB
Total:			0.005	0.001	100.00	1.942	

4 Standard 4 - 10 ppb

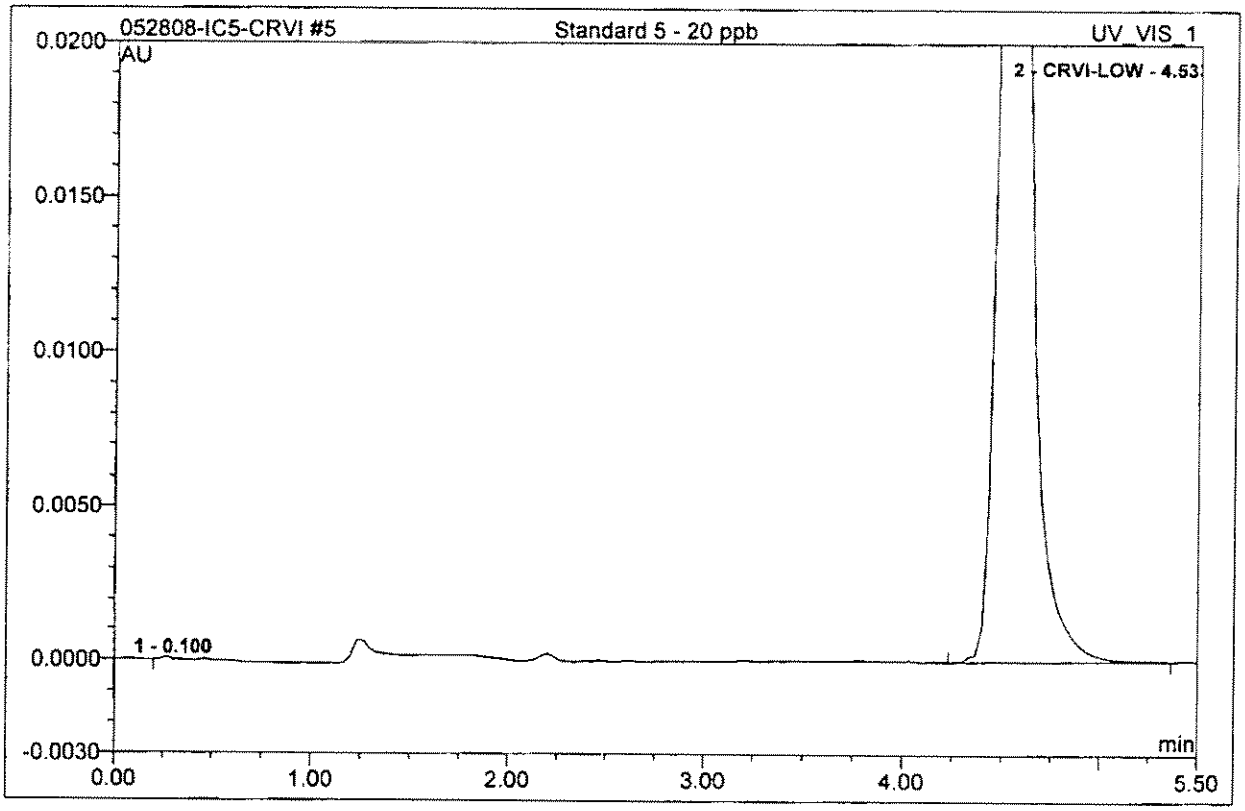
Sample Name:	**Standard 4 - 10 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:32**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	0.10	n.a.	0.000	0.0000477	1.21	n.a.	BMB
2	4.60	CRVI-LOW	0.025	0.0039060	98.79	10.047	BMB
Total:			0.026	0.004	100.00	10.047	

5 Standard 5 - 20 ppb

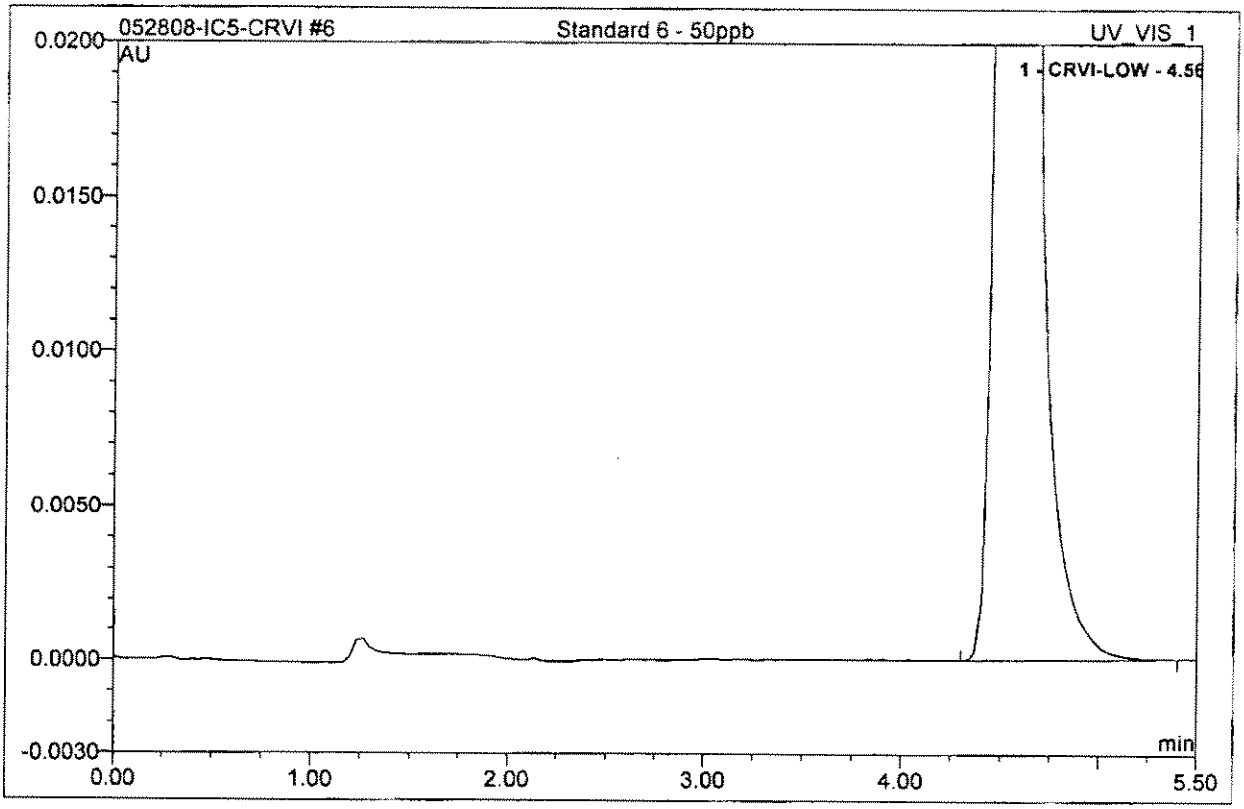
Sample Name:	**Standard 5 - 20 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:40**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	0.10	n.a.	0.000	0.0000028	0.04	n.a.	BMB
2	4.53	CRVI-LOW	0.049	0.0078184	99.96	20.111	BMB
Total:			0.049	0.008	100.00	20.111	

6 Standard 6 - 50ppb

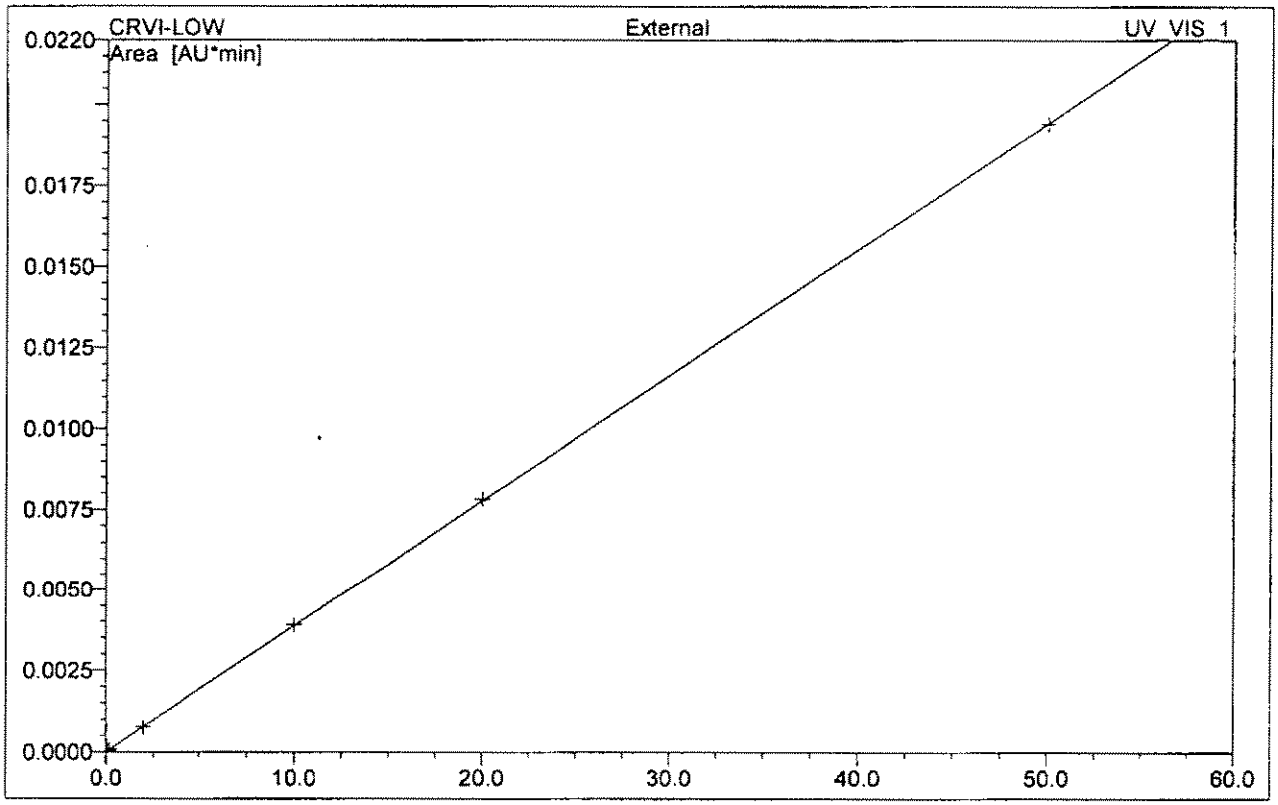
Sample Name:	**Standard 6 - 50ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**standard**	*Recording Time:*	**4/7/2008 10:48**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.122	0.0194183	100.00	49.949	BMB
Total:			0.122	0.019	100.00	49.949	

6 Standard 6 - 50ppb

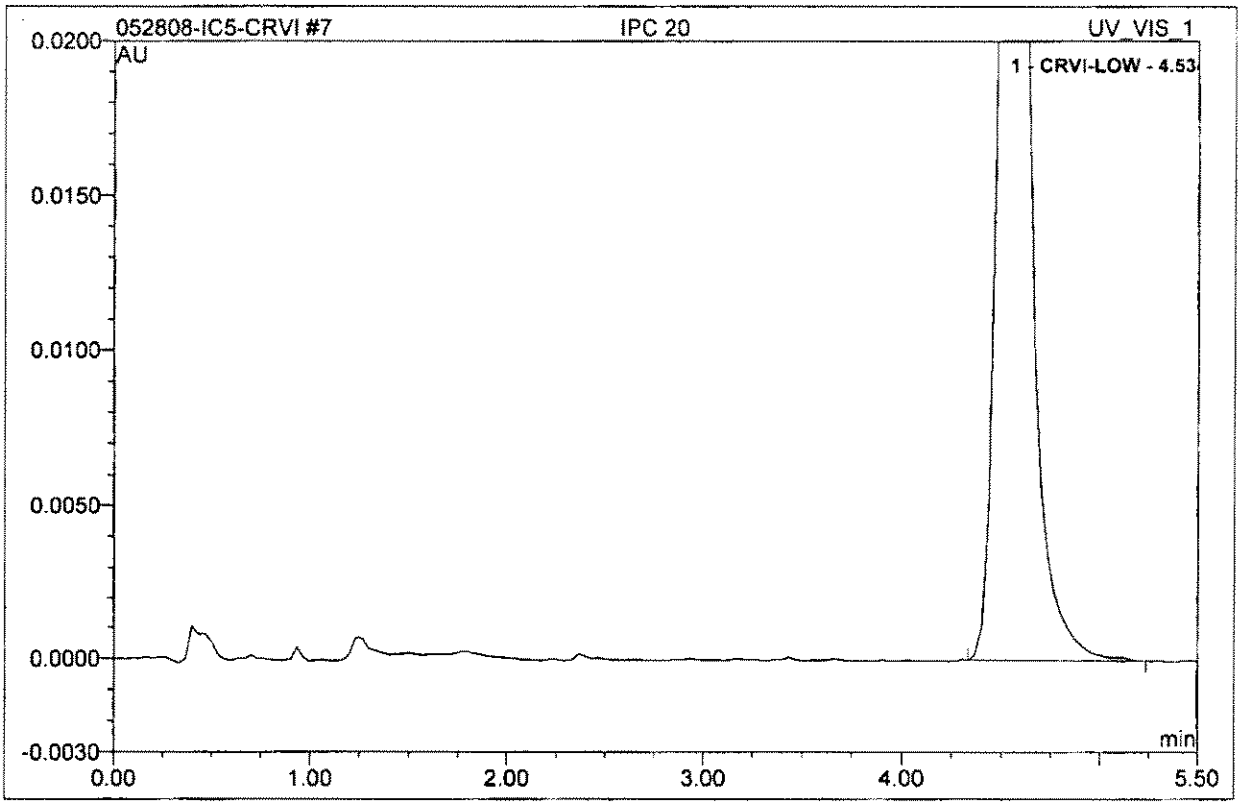
Sample Name:	**Standard 6 - 50ppb**	*Control Program:*	**CRVI-LOW-loop**
Sample Type:	**standard**	*Quantif. Method:*	**1-IC#5-CRVI**
Recording Time:	**4/7/2008 10:48**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	4.57	CRVI-LOW	Lin	6	99.9994	0.0000	0.0003888	0.0000
Average:					99.9994	0.0000	0.0004	0.0000

7 IPC 20

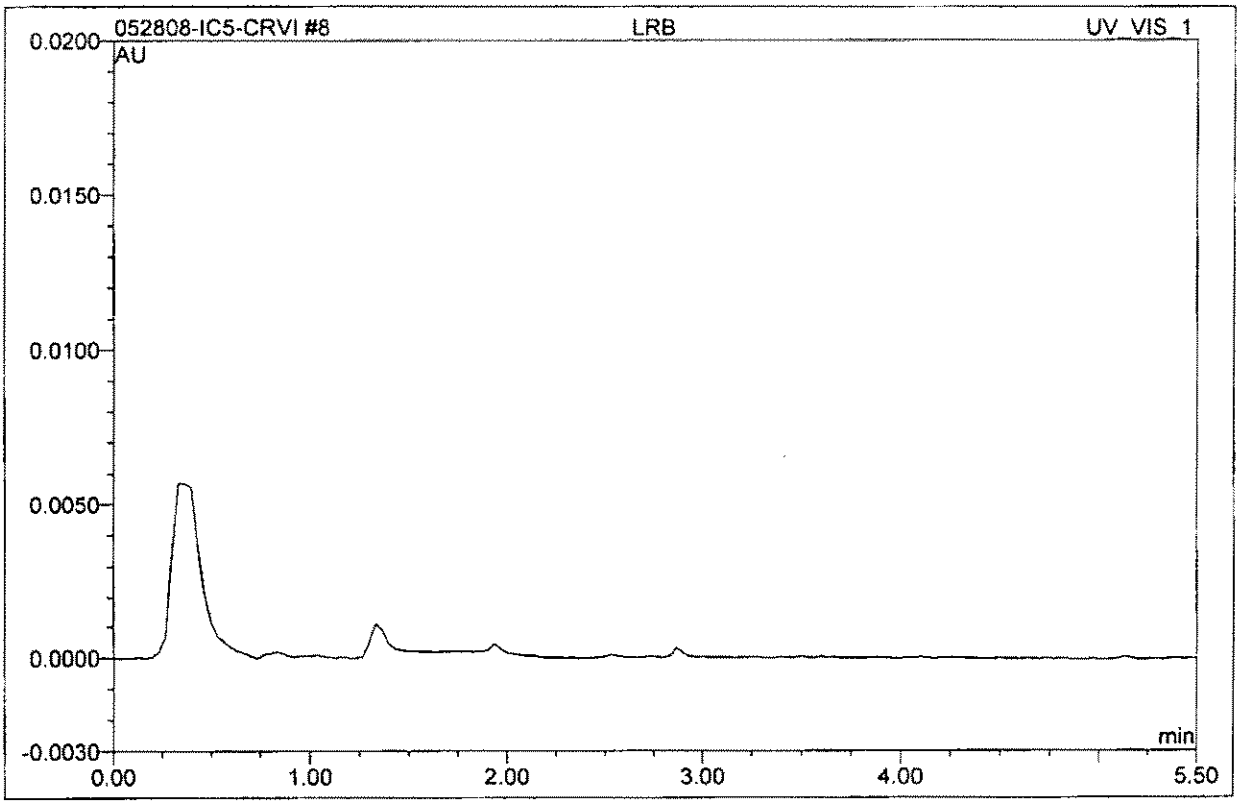
Sample Name:	**IPC 20**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 8:25**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.048	0.0077043	100.00	19.817	BMB
Total:			0.048	0.008	100.00	19.817	

8 LRB

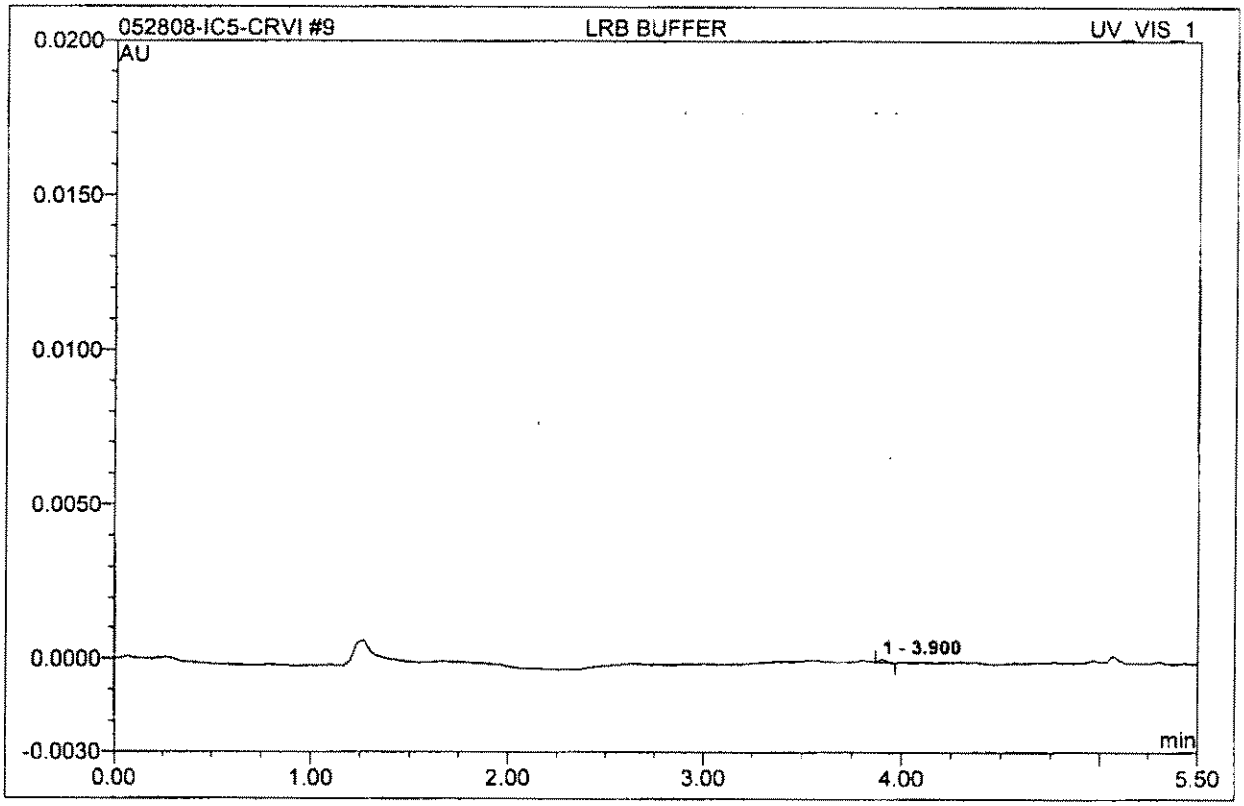
Sample Name:	**LRB**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 8:33**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

9 LRB BUFFER

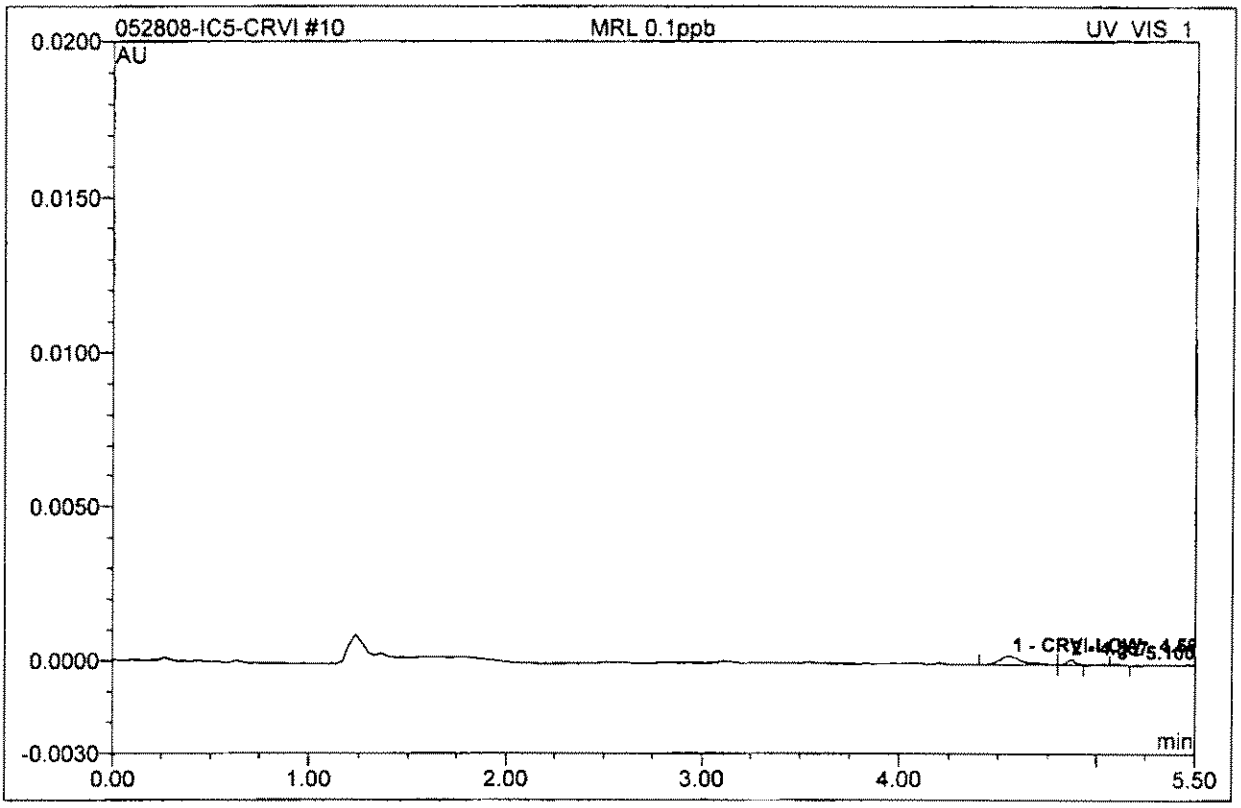
Sample Name:	**LRB BUFFER**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 8:41**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.90	n.a.	0.000	0.0000047	100.00	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

10 MRL 0.1ppb

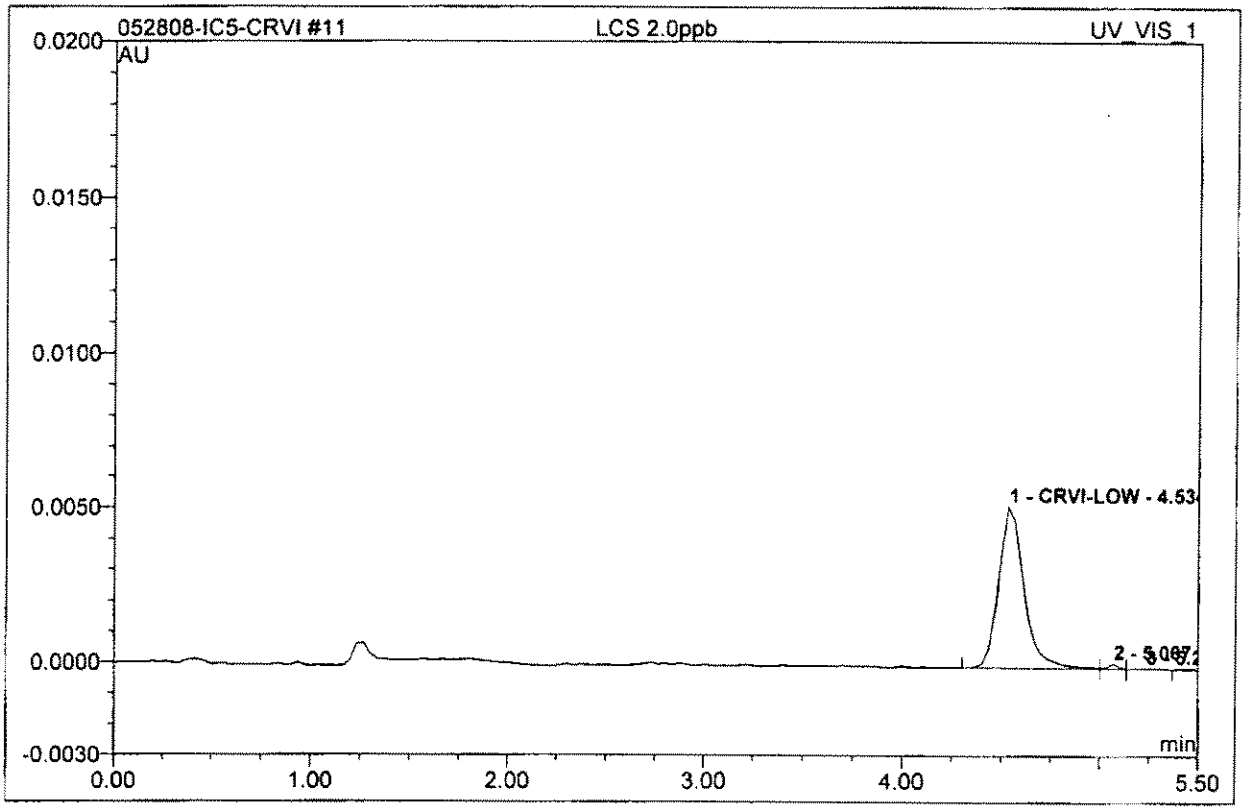
Sample Name:	**MRL 0.1ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 8:49**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.000	0.0000392	77.16	0.101	BMb
2	4.87	n.a.	0.000	0.0000094	18.45	n.a.	bMB
3	5.10	n.a.	0.000	0.0000022	4.39	n.a.	BMB
Total:			0.001	0.000	100.00	0.101	

11 LCS 2.0ppb

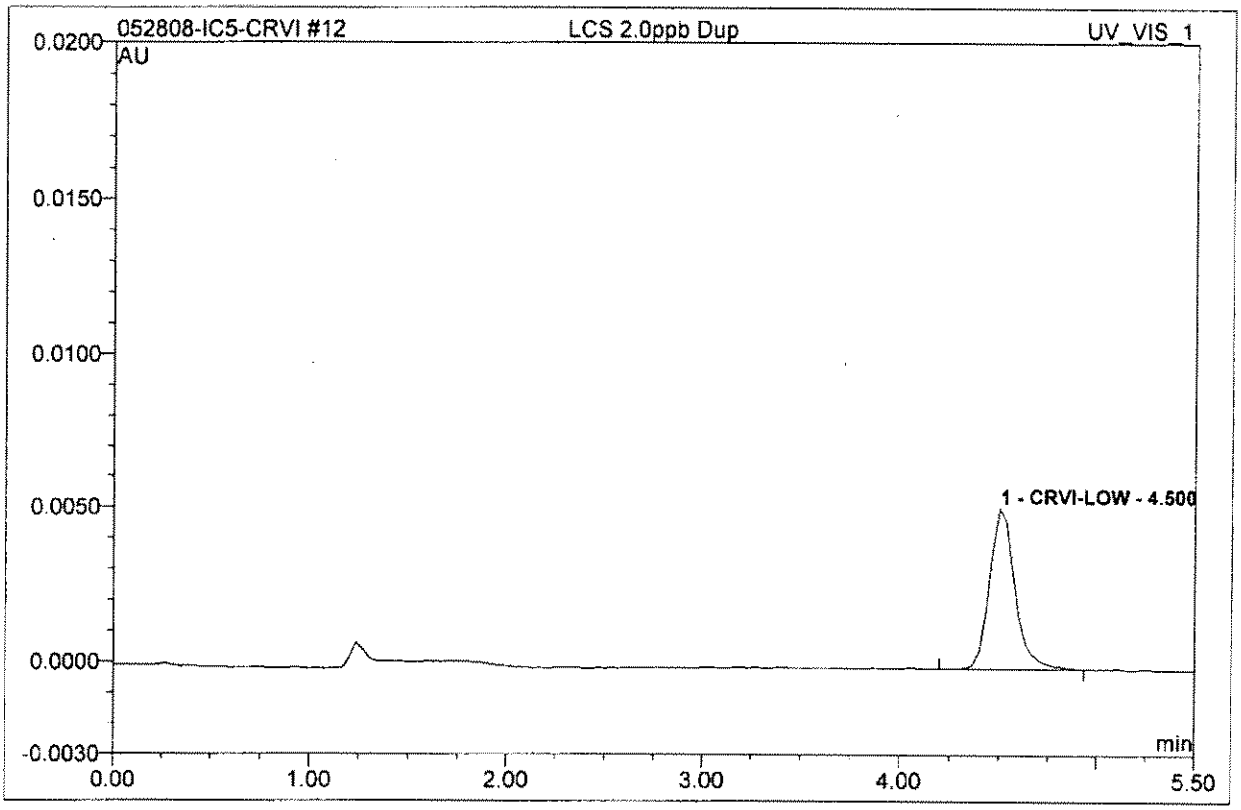
Sample Name:	**LCS 2.0ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 8:57**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.005	0.0007877	98.58	2.026	BM
2	5.07	n.a.	0.000	0.0000091	1.14	n.a.	Mb
3	5.23	n.a.	0.000	0.0000022	0.28	n.a.	bMB
Total:			0.005	0.001	100.00	2.026	

12 LCS 2.0ppb Dup

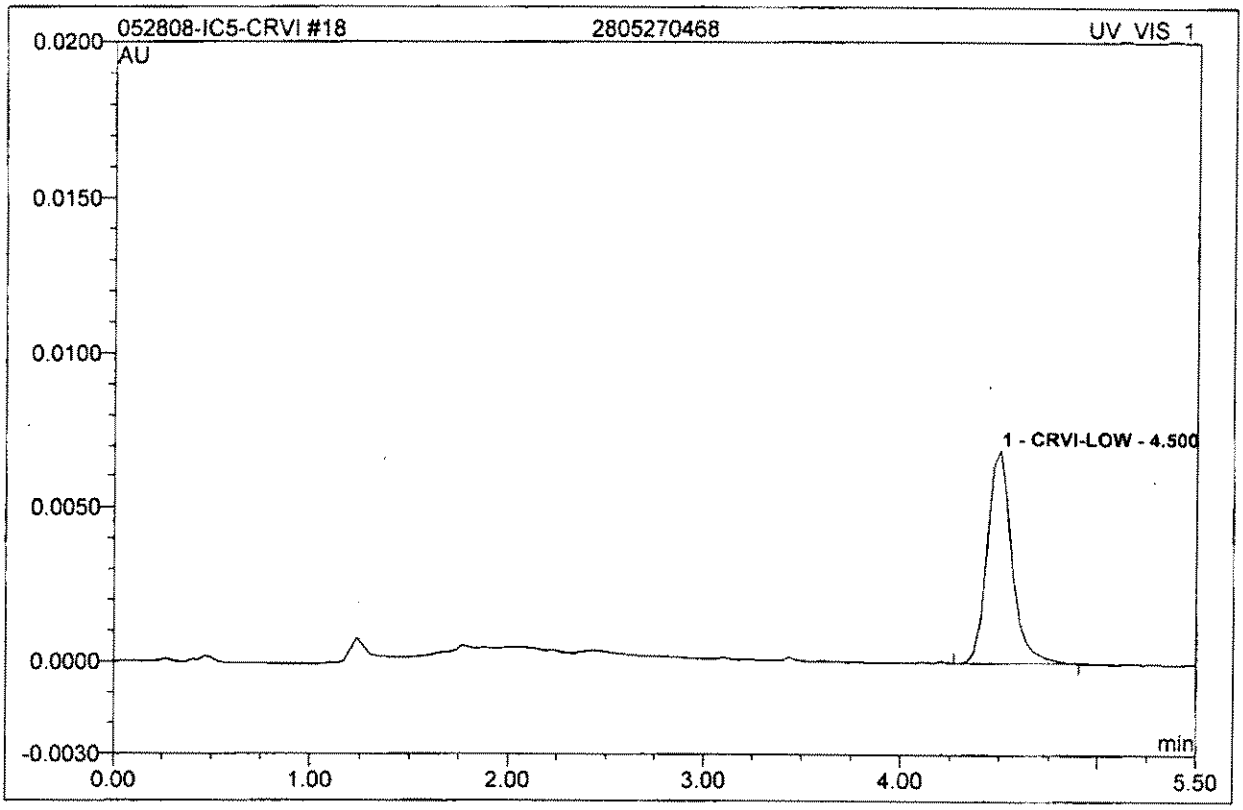
Sample Name:	**LCS 2.0ppb Dup**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 9:05**
Analyst:	**tih**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.50	CRVI-LOW	0.005	0.0007827	100.00	2.013	BMB
Total:			0.005	0.001	100.00	2.013	

18 2805270468

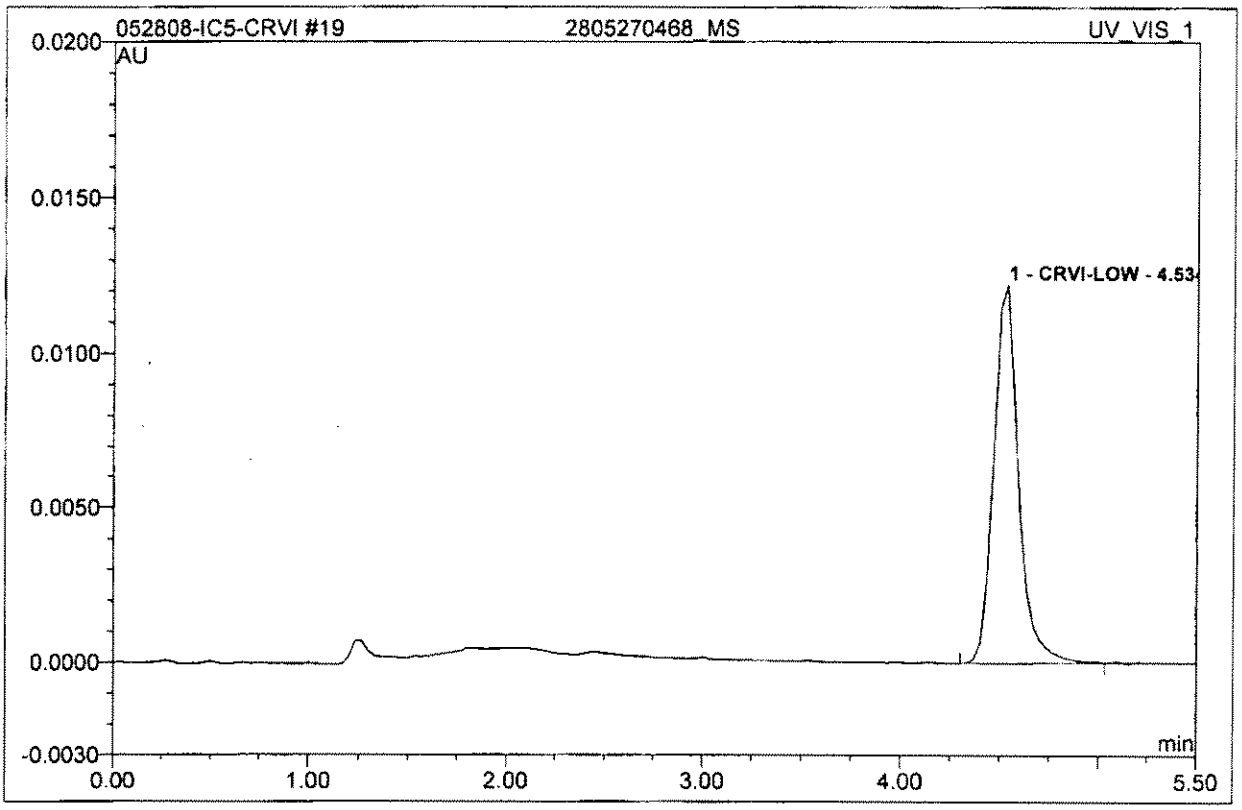
Sample Name:	**2805270468**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 9:54**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.50	CRVI-LOW	0.007	0.0010062	100.00	2.588	BMB
Total:			0.007	0.001	100.00	2.588	

19 2805270468_MS

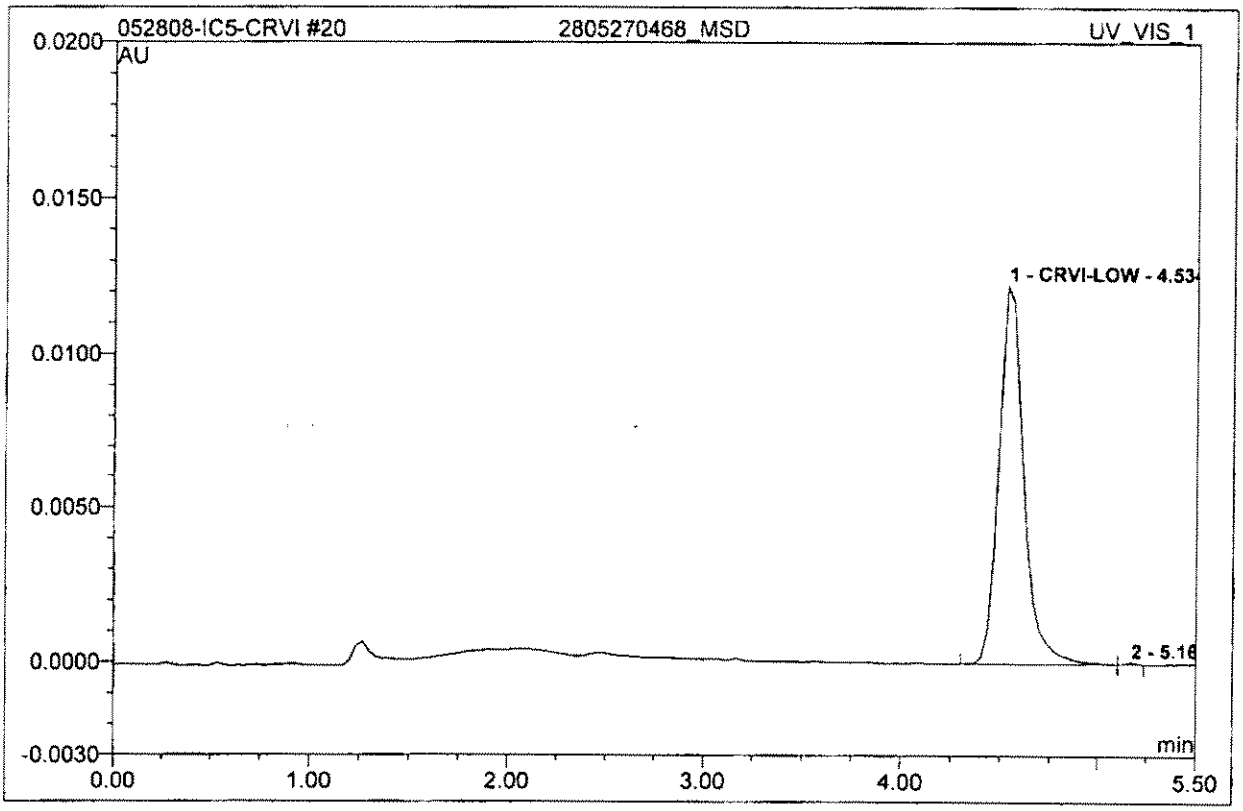
Sample Name:	**2805270468_MS**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 10:02**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.012	0.0017911	100.00	4.607	BMB
Total:			0.012	0.002	100.00	4.607	

20 2805270468_MSD

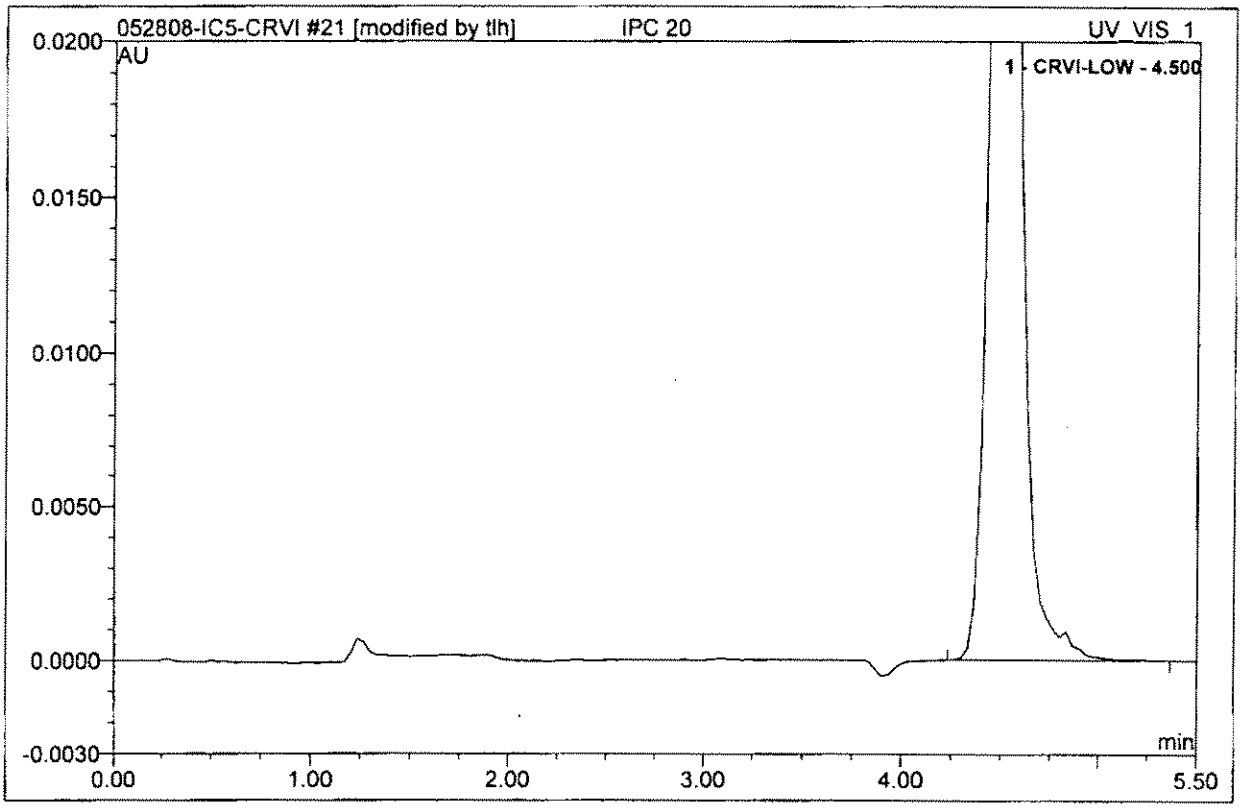
Sample Name:	**2805270468_MSD**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 10:10**
Analyst:	**tih**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.012	0.0018099	99.78	4.656	BMb
2	5.17	n.a.	0.000	0.0000040	0.22	n.a.	bMB
Total:			0.012	0.002	100.00	4.656	

21 IPC 20

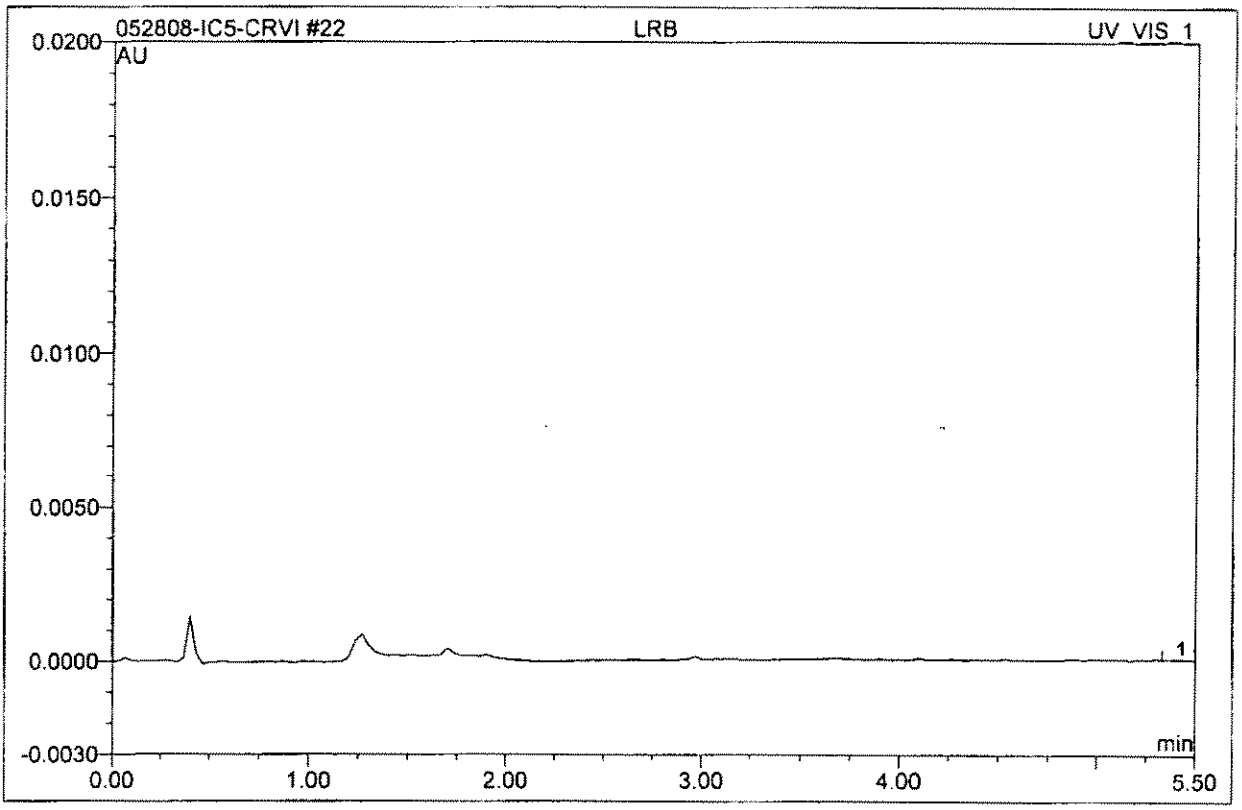
Sample Name:	**IPC 20**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 10:18**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.50	CRVI-LOW	0.051	0.0077258	100.00	19.873	BMB*
Total:			0.051	0.008	100.00	19.873	

22 LRB

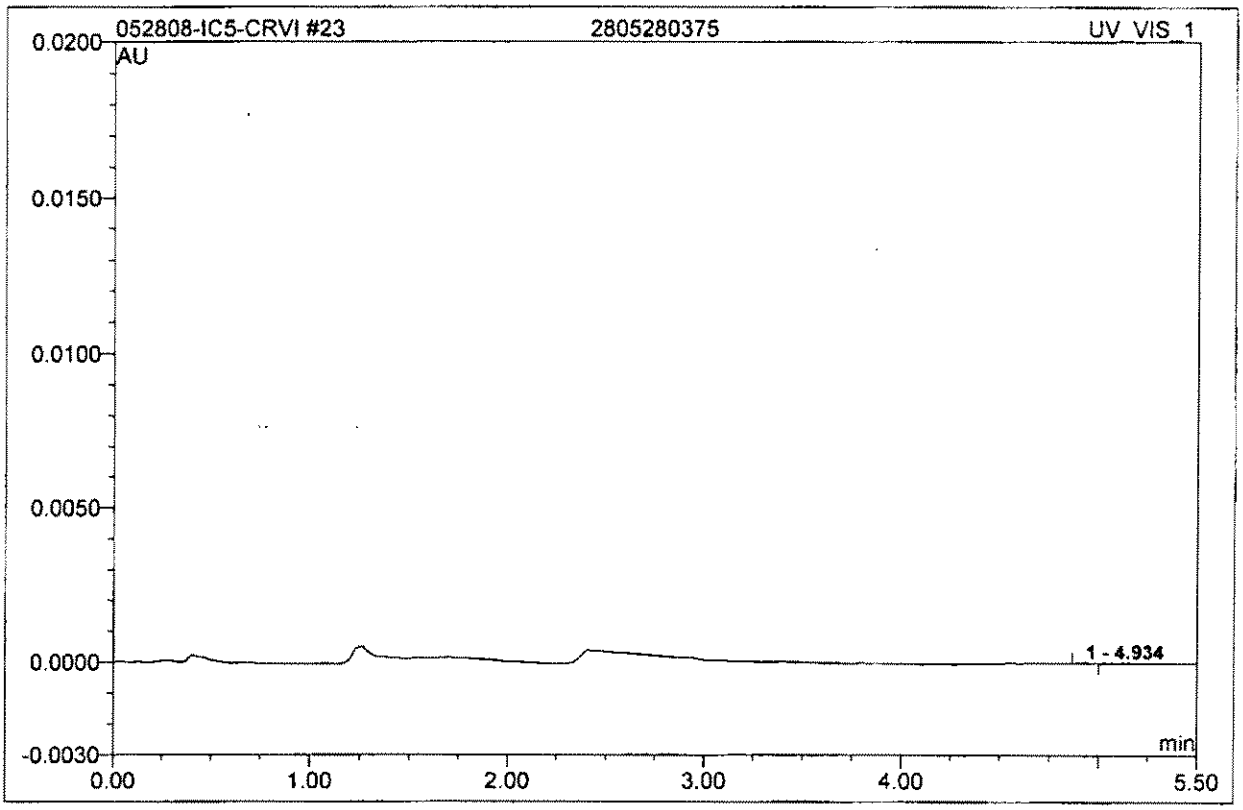
Sample Name:	**LRB**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 10:26**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.40	n.a.	0.000	0.0000020	100.00	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

23 2805280375

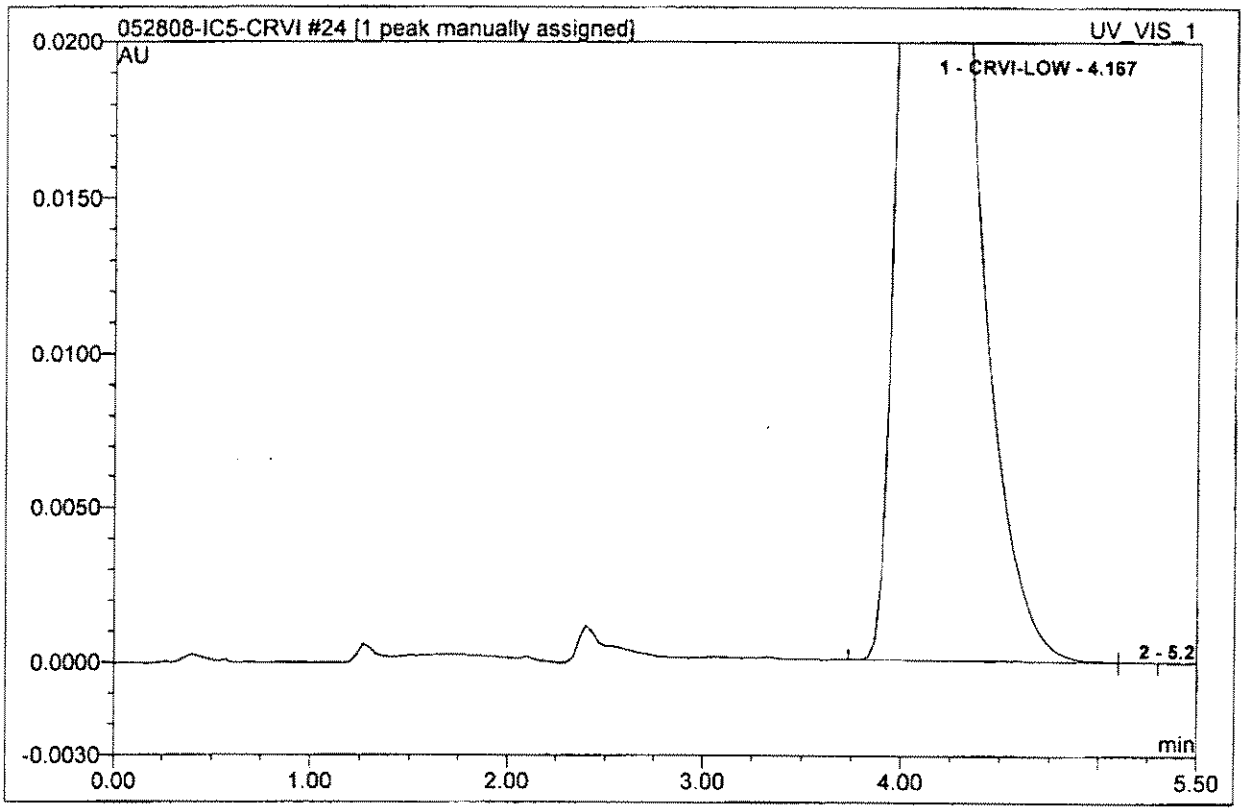
Sample Name:	**2805280375**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 13:25**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.93	n.a.	0.000	0.0000005	100.00	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

24 2805280376

Sample Name:	**2805280376**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CRVI**
Sample Type:	**unknown**	*Recording Time:*	**5/28/2008 13:33**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.17	CRVI-LOW	0.042	0.0164463	99.99	42.304	BMb^
2	5.20	n.a.	0.000	0.0000012	0.01	n.a.	bMB
Total:			0.042	0.016	100.00	42.304	

Standard Preparation Worksheet & Certificate of Analysis

HACH COMPANY

P.O.Box 389
Loveland, CO 80539
(970) 669-3050

An ISO 9001 Certified Company

Certificate of Analysis

COMMODITY: **Chromium Reference Standard Solution 1000 \ 10 mg/L as total Cr**
COMMODITY NUMBER: **14664-42** MANUFACTURE DATE: **12/31/2004** DATE OF ANALYSIS: **1/4/2005**
LOT NUMBER: **A5005**

TEST	*SPECIFICATIONS*	*RESULTS*
Hexavalent Chromium Concentration	995 to 1005 ppm	1001.0 ppm
pH of the solution	12 to 14	12.0

The expiration date is Jan 2010

The item 1466442 is traceable to NIST standards SRM 136e Potassium Dichromate LOT N/A.

R 201090

Certified by _____
Paul Kleinwolterink
Analytical Services Chemist

Reagent Documentation

Reagent: Chromium VI Std 1000 ppm
Date Received: 31 Jan 05
Date Expired: Jan '10
Manufacturer: HACH
Storage Condition: roomtemp 10-30°C

Reagent #: 201090
By: LMR
Matrix: aq
Amount: 100 ml
Lot #: A5 205

Component	Comment	Standard	Concentration
	HACH Cat # 14664-42		

Comment:

Reagent: Turbidity Std - 20 NTU
Date Received: 3 Feb 05
Date Expired: Jan 2006
Manufacturer: GFS Chemicals
Storage Condition: room temp

Reagent #: 201091
By: LMR
Matrix: aq
Amount: 1-L
Lot #: P460346

Component	Comment	Standard	Concentration
	VWR # 66115-150		

Comment:

Reagent: Potassium Phosphate Monobasic
Date Received: 8 Feb 05
Date Expired: Feb 10
Manufacturer: JT Baker
Storage Condition: room temp

Reagent #: 201092
By: LMR
Matrix: solid
Amount: 2 x 500g
Lot #: A38142

Component	Comment	Standard	Concentration
	VWR # JT3246-1		

Comment:

INORGANIC VENTURES
196 Lehigh Avenue, Suite 4
Lakewood, New Jersey 08701 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

info@inorganicventures.com

1.0 **INORGANIC VENTURES** is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35:1989 "Certification of Reference Materials - General and Statistical Principals."

RH 201632

2.0 DESCRIPTION OF CRM **1000 µg/mL Chromium (+6) in H20**

Catalog Number:	CGCR(6)1-1, CGCR(6)1-2, and CGCR(6)1-5
Lot Number:	**Z-CR02152**
Starting Material:	(NH4)2Cr2O7
Starting Material Purity (%):	99.989259
Starting Material Lot No:	F04N14
Matrix:	H20

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration: 1000 ± 3 µg/mL

Certified Density: 0.999 g/mL (measured at 22° C)

The Certified Value is based upon the most precise method used to analyze this CRM. The following equations are used in the calculation of the certified value and the uncertainty:

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = \frac{2[(\Sigma s_i)^2]^{1/2}}{(n)^{1/2}}$

Σs_i = The summation of all significant estimated errors (Most common are the errors from instrumental measurement, weighing, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

The independent samples t-test was used to determine if there is agreement between the above assay methods at the 95% confidence interval. Both methods were compared and showed agreement within the stated uncertainties. This agreement is a confirmation of the accuracy of this CRM.

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

· "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

· This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

4.1 **Assay Method #1** **1000 ± 3 µg/mL**
Redox NIST SRM 136e Lot Number: 980702

Assay Method #2 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 990607

Reagent Documentation

Reagent: Antifoam B Silicone Emulsion
Date Received: 08 May 07
Date Expired: May 2010
Manufacturer: JT Baker
Storage Condition: room temp

Reagent #: 201630
By: RH
Matrix: aq
Amount: 125mL
Lot #: C47613

Component	Comment	Standard	Concentration
	JT Baker # B531-05		

Comment:

Reagent: Cyanide 1000ug/mL
Date Received: 09 May 07
Date Expired: 30 April 08
Manufacturer: High Purity Standards
Storage Condition: room temp

Reagent #: 201631
By: RH
Matrix: aq
Amount: 125mL
Lot #: 629323

Component	Comment	Standard	Concentration
	HP # IC-CN-M		

Comment:

Reagent: Chromium +6 (Cr+6) 1000ppm
Date Received: 5/11/07
Date Expired: 6/11/08
Manufacturer: Inorganic Ventures
Storage Condition:

Reagent #: 201632
By: WSH
Matrix: AR
Amount: 125ml
Lot #: Z-CR02152

Component	Comment	Standard	Concentration
Cr+6	PN = CGCR(6)1-1		

Comment:

Reagent Preparation Documentation

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Reagent: Cr^{+6} Low LCS Stock Solution - 1ppm
Date Received/Prepped: 10/18/07 3/17/08 7/30/08 10/20/08
Date Expired:
Manufacturer:
Storage Condition: room temperature

MW #: TLH071018-1
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Mich 1000ppm exp Jun 2010	100µL diluted to 100mL w/ DI H_2O	R201090	1ppm

Comment:

Reagent: Cr^{+6} Low LCS Working Std - 2ppb
Date Received/Prepped: 10/18/07 11/12/07 11/26/07 12/10/08 12/18/07 1/15/08
~~Date Expired:~~ 1/30/08 2/13/08 2/26/08 3/12/08 3/28/08 4/2/08
Manufacturer:
Storage Condition: room temperature

MW #: TLH071018-2
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low LCS Stock (TLH071018-1)	200µL diluted to 100mL w/ DI H_2O	TLH071018-1	2ppb
Cr^{+6} Buffer Soln	1.0mL added AFTER soln @ final volume	TLH0608-15-1	

Comment: 4/21/08 5/2/08 5/15/08 5/28/08 6/11/08 6/23/08 2/8/08 7/21/08 7/30/08 8/12/08 8/25/08 9/8/08 9/23/08 10/7/08 10/20/08 10/31/08

Reagent: Cr^{+6} Low Calibration Stock Soln - 1ppm
Date Received/Prepped: 10/18/07 3/17/08
Date Expired:
Manufacturer:
Storage Condition: room temperature

MW #: TLH071018-3
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Inorganic Ventures 1000ppm Exp 01-Jun-08 Received 5-11-07 Lot # Z CRC-215-2	100µL diluted to 100mL w/ DI H_2O	R201032	1ppm

Comment:

Reagent Preparation Documentation

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Reagent: Br-Low Color Reagent
Date Received/Prepped: 12/19/07 x2 12/28/07 1/4/08 x2 1/8/08 1/10/08
Date Expired: / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: RH071218-1
By: RH
Matrix: aq
Amount: 2L
Lot #:

Component	Comment	Standard	Concentration
O-dianisidine (ODA)	1.0g dissolved in 400mL Methanol	R201466	
HPLC Grade Methanol	400mL	R201724	
KBr	10.0g dissolved in ~1.4L DIH2O	R201723	
11.1N HNO3	110mL	R201744	

Comment: Add ODA to methanol & dissolve. In a 2L flask dissolve KBr into DIH2O. Add HNO3 to KBr soln. Add ODA to KBr/HNO3 soln & dilute to mark w/ DIH2O. Soln must be clear w/in 30 mins. Soln must stand a minimum of 6 hrs before using. Overnight is better

Reagent: Cr+6-Low Buffer Soln.
Date Received/Prepped: 12/28/07 8/14/08 / / /
Date Expired: / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: RH071228-1
By: RH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Ammonium Sulfate	33g dissolved in ~70mL DIH2O	R201197	
Ammonium Hydroxide	6.5mL	R201681	
	bring to volume w/ DIH2O		

Comment:

Reagent: Cr+6 Low Calibration Std. - 0.2ppb
Date Received/Prepped: 12/21/07 3/12/08 4/7/08 / /
Date Expired: * / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: RH071231-1
By: RH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr+6 Low Calibration Stock	2µL diluted to 100mL w/ DIH2O	RH071018-3	0.2ppb
Cr+6 Low Buffer Soln	1.0mL added AFTER diluted to final volume	RH071228-1	

Comment: * make fresh for each calibration

Reagent Preparation Documentation

Reagent: Cr^{+6} Low Calibration Std. - 2.0ppb
Date Received/Prepped: 12/31/07 2/7/08 3/17/08 4/7/08 5/15/08
Date Expired: / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: 9HO71231-2
By: 9H
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	200µL diluted to 100mL w/ NH_2O	9HO71018-3	2.0ppb
Cr^{+6} Low Buffer Soln	1.0mL added AFTER diluted to final volume	9HO71228-1	

Comment:

Reagent: Cr^{+6} Low Calibration Std. - 10ppb
Date Received/Prepped: 12/31/07 3/17/08 4/7/08 / /
Date Expired: * / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: 9HO71231-3
By: 9H
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	1.0mL diluted to 100mL w/ NH_2O	9HO71018-3	10ppb
Cr^{+6} Low Buffer Soln	1.0mL added AFTER diluted to final volume	9HO71228-1	

Comment: * make fresh for each calibration.

Reagent: Cr^{+6} Low Calibration Std. - 20ppb
Date Received/Prepped: 12/31/07 1/18/08 1/30/08 2/7/08 2/15/08 2/22/08
~~Date Expired:~~ 2/29/08 3/17/08 3/25/08 4/3/08 4/7/08 4/16/08
Manufacturer:
Storage Condition: room temperature

MW #: 9HO71231-1
By: 9H
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	2.0mL diluted to 100mL w/ NH_2O	9HO71018-3	20ppb
Cr^{+6} Low Buffer Soln	1.0mL added AFTER diluted to final volume	9HO71228-1	

Comment: 4/24/08 5/6/08 5/15/08 5/28/08

Reagent Preparation Documentation

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Reagent: Cr^{+6} Low Calibration Std - 50ppb
Date Received/Prepped: 12/31/07 3/17/08 4/3/08
Date Expired: *
Manufacturer:
Storage Condition: room temperature

MW #: 9CH071231-5
By: 9CH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	5.0mL diluted to 100mL w/ DIH2O	9CH071018-3	50ppb
Cr^{+6} Low Buffer Soln	1.0mL added AFTER diluted to final volume	9CH071228-1	

Comment: make fresh for each calibration

Reagent: Cr^{+6} Low Color Reagent
Date Received/Prepped: 1/7/08 11/15/08
Date Expired:
Manufacturer:
Storage Condition: room temperature

MW #: 9CH080107-1
By: 9CH
Matrix: aq
Amount: 2L
Lot #:

Component	Comment	Standard	Concentration
1,5 Diphenylcarbazide	1.0g dissolved in	R201413	
Methanol	180mL using 2L volumetric flask	R201724	
H_2SO_4 concentrated	56mL added to ~1600mL DIH2O		
	in appropriate flask		

Comment: Fully dissolve methanol soln & allow acid soln to cool. Slowly add acid soln to methanol soln & Dilute to mark w/ DIH2O. Allow to sit for 6-8hrs before use. Overnight is better

Reagent: Anion Mix LCS Stock Standard
Date Received/Prepped: 1/7/08 3/13/08 6/24/08 9/10/08 11/3/08
Date Expired: 3/7/08 5/13/08 8/24/08 11/10/08 12/1/08
Manufacturer:
Storage Condition: room temperature

MW #: 9CH080107-2
By: TCH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Anion Mix A		R201756	NO_2-10ppm
Inorganic Ventures	10mL of each soln diluted to		NO_3-25ppm
Exp 12/01/08	100mL w/ DIH2O		Br-5ppm
Anion Mix B		R201756	SO_4-50ppm
Inorganic Ventures			Cl-25ppm
Exp 12/01/08			PO_4-100ppm

Comment: 10µL → 5mL for MS/MSD