

## البرنامج الوطني لضبط جودة معايرة الواسمات الورمية

. \* . \*\* . \* :

( )

" Z-Score"

(T. PSA )

( F.PSA & CEA )

( CA 15-3 )

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			-1
			-2
			-3
			-4
			-5
			-1-5
	.( 3-2 )		-2-5
	.(22-4 )		-3-5
	.( 53-23 )		-4-5
			-5-5
			-
			-
T.PSA	Z- Score		-
F.PSA	Z- Score		-
CA 15-3	Z- Score		-
CEA	Z- Score		-
			-6
			-7
			-8

: -1

M-10 ISO/IES-17025:1999

: -2

Z-Score

:

.1

.2

.3

.4

.5

:

-3

.(1)

-4

:

( )

-

-

-

AIDS

UK-

NEQAS

DIXON

$$Z = \frac{X - \bar{X}}{STD}$$

- X:

-  $\bar{X}$

- STD

:

A

2

Z

(Aceptable)

2

3

Z

(Acceptable with Warning) W

N

3

Z

(Not acceptable)

: -5

: -1-5

		22			01
		23			02
		24			03
		25			04
		26			05
		27			06
		28			07
		29			08
		30			09
		31			10
		32			11
		33			12
		34			13
		35			14
		36			15
		37			16
		38			17
		39			18
		40			19
		41			20
		42			21

(1)

CEA	CA-15-3	P.S.A. free	P.S.A. total	
Elecsys 1010	Vidas	Elecsys 1010	Elecsys 1010	1010
				1018
DPC immonolite	DPC immonolite	DPC immonolite	DPC immonolite	1054
AXSYM, Abbott	AXSYM, Abbott	AXSYM, Abbott	AXSYM, Abbott	1067
Vidas	Vidas	Vidas	Vidas	1112
Vidas	Vidas	Vidas	Vidas	1070
Vidas	Vidas	Vidas	Vidas	1140
				1113
Elecsys 1010		Elecsys 1010	Elecsys 1010	1252
Vidas	Vidas	-	Vidas	1195
Immu lite	Immu lite	Immu lite	Immu lite	1141
Elecsys 2010	Elecsys 2010	-	AXSym	1231
Elecsys 2010	Elecsys 2010	Elecsys 2010	Elecsys 2010	1268
Immu lite	Immu lite	Immu lite	Immu lite	1283
				1286
				1298
AXSym	AXSym	AXSym	AXSym	1328
				7001
Vidas	Vidas	Vidas	Vidas	2170
Vidas	Vidas	Vidas	Vidas	2085
-	-	-	Immu lite	2121
-	-	-	Vidas	2021
Elecsys 1010	Elecsys 1010	Elecsys 1010	Elecsys 1010	2235
Elecsys 2010	Elecsys 2010	Elecsys 2010	Elecsys 2010	2240
Immu lite			Vidas	2146
IMX			IMX	3002
				3058
Immu lite	Immu lite	-	Isocompi	3105
Vidas	Vidas	Vidas	Vidas	3005
	Immu lite	Immu lite	MGM Isocompi	3259
				3073
Immu lite	Immu lite	Immu lite	Immu lite	3069
-	-	-	-	3152
Vidas	Vidas	Vidas	Vidas	4138
Elecsys 1010	Elecsys 1010	Elecsys 1010	Elecsys 1010	4171
-	-	-	Elecsys 1010	4318
-	-	-	Vidas	4154
-	-	-	Vidas	2516
Vidas	Vidas	-	Vidas	2518
-	-	-	Vidas	5259

( Distribution No. 1/2003 )				PSA				( 2 )	
F.PSA	F.PSA	T.PSA	T.PSA	F.PSA	F.PSA	T.PSA	T.PSA		
0.941	1.8	4.64	5	0.186	0.03	3.17	3.00	01	1010
									1018
-	1.8	4.09	5	-	0.03	2.87	3.00	03	1054
1.011	1.8	3.79	5	0.094	0.03	2.70	3.00	04	1067
1.03	1.8	4.34	5	0.12	0.03	2.94	3.00	05	1112
-	1.8	-	5	-	0.03	2.94	3.00	06	1070
1.67	1.8	-	5	-	0.03	3.69	3.00	07	1140
									1113
0.90	1.8	4.45	5	0.160	0.03	3.10	3.00	09	1252
-	1.8	4.75	5	-	0.03	3.11	3.00	10	1195
0.87	1.0	11.8	11	0.07	0.03	3.5	3.00	11	1141
-	1.0	9.2	11	-	0.03	2.7	3.00	12	1231
0.432	1.0	8.97	11	0.071	0.03	2.72	3.00	13	1268
0.10	0.4	0.45	0.5	-	0.03	-	3.00	14	1283
									1286
									1298
0.22	0.4	0.19	0.5	0.15	0.2	-	0.5	17	1328
									7001
-	0.04	-	1.0	-	0.2	-	0.5	19	2170
-	0.04	1.30	1.0	-	0.2	0.59	0.5	20	2085
-	0.04	1.5	1.0	-	0.2	0.64	0.5	21	2121
-	0.04	1.39	1.0	-	0.2	0.76	0.5	22	2021
0.145	0.4	1.95	2.6	0.10	0.2	0.52	0.5	23	2235
0.18	0.4	1.6	2.6	0.11	0.2	0.30	0.5	24	2240
-	0.4	3.12	2.6	-	0.2	0.84	0.5	25	2146
-	0.4	2.018	2.6	-	0.2	0.565	0.5	26	3002
									3058
-	0.4	1.32	2.6	-	0.4	0.00	0.5	28	3105
0.05	0.4	2.61	2.6	0.11	0.4	0.65	0.5	29	3005
0.8	1.8	2.98	5	0.12	0.4	0.54	0.5	30	3259
									3073
-	1.8	4.9	5	-	0.4	2.4	2.6	32	3069
-	1.8	-	5	-	0.4	-	2.6	33	3152
-	1.8	4.92	5	-	0.4	2.45	2.6	34	4138
-	1.8	3.55	5	-	0.4	1.85	2.6	35	4171
-	1.8	4.01	5	-	0.04	1.03	1.0	36	4318
									4180
-	2.2	22.3	22	-	0.04	-	1.0	38	4154
-	2.2	23.41	22	-	0.04	1.32	1.0	40	2516
-	2.2	-	22	-	0.4	2.37	2.6	41	2518
-	2.2	21.16	22	-	0.03	3.38	3	42	5259

( Distribution No. 1/2003 )				CA-15-3 &CEA				( 3 )	
CEA	CEA	CEA	CEA	CA.15-3	CA.15-3	CA.15-3	CA.15-3		
1.23	0.8	2.02	1.5	21.38	18.2	29.20	24.5	01	1010
									1018
0.96	0.8	1.7	1.5	21.7	18.2	26.9	24.5	03	1054
1.3	0.8	2.00	1.5	13	18.2	11.1	16.6	04	1067
0.69	0.8	0.99	1.5	13.47	18.2	10.45	16.6	05	1112
-	0.8	1.15	1.5	17.0	18.2	-	16.6	06	1070
0.64	0.8	1.07	1.5	-	18.2	12.94	16.6	07	1140
									1113
1.30	0.8	1.85	1.5	-	18.2	-	16.6	09	1252
1.03	0.8	1.10	1.5	13.5	18.2	11.03	16.6	10	1195
2.1	1.6	3.0	1.8	29	29.5	16.8	16.6	11	1141
-	1.6	-	1.8	25.1	29.5	14.4	16.6	12	1231
2.58	1.6	3.64	1.8	22.98	29.5	14.04	16.6	13	1268
5.6	1.6	5.6	1.8	71	18.2	75	16.6	14	1283
									1286
									1298
2.7	1.6	4.1	1.8	11	18.2	13	16.6	17	1328
									7001
-	1.6	2.47	1.8	-	29.5	32.25	19.00	19	2170
-	1.6	-	1.8	-	29.5	-	19.00	20	2085
-	0.8	-	1.5	-	18.2	-	19.00	21	2121
-	0.8	-	1.5	-	18.2	-	16.6	22	2021
1.92	0.8	3.0	1.5	17.77	18.2	16.21	16.6	23	2235
1.1	0.8	2.2	1.5	12.3	29.5	5.3	16.6	24	2240
0.97	0.8	1.7	1.5	-	29.5	-	16.6	25	2146
1.85	1.0	1.97	1.5	-	18.2	-	19.00	26	3002
									3058
1.2	1.0	1.4	1.5	30.5	29.5	53.7	19.00	28	3105
1.05	1.0	0.72	1.5	20.30	29.5	28.20	19.00	29	3005
1.6	1.0	1.5	1.5	35.1	29.5	30.4	16.6	30	3259
									3073
2.7	1.8	1.2	1.0	44.8	29.5	24.5	16.6	32	3069
-	1.8	-	1.0	-	29.5	-	16.6	33	3152
-	1.8	-	1.8	-	29.5	-	16.6	34	4138
3.15	1.8	2.39	1.8	30.99	29.5	18.81	16.6	35	4171
-	1.8	-	1.5	-	29.5	-	16.6	36	4318
									4180
1.5	1.8	2.2	1.8	1	29.5	1.5	19.00	38	4154
-	1.8	-	1.8	-	29.5	-	19.00	40	2516
1.74	1.8	1.58	1.6	21.45	29.5	13.10	16.6	41	2518
-	1.0	-	1.6	-	29.5	-	16.6	42	5259

( 001 )

( 4 )

F. PSA 0.03 ng /ml=		T.PSA 3.00 ng /ml=		
	F .PSA		T .PSA	
AV = 0.12 STD =0.05	0.186	AV = 3.1 STD = 0.3	3.17	1010
	-		2.87	1054
	0.094		2.70	1067
	0.12		2.94	1112
	-		2.94	1070
	-		3.69	1140
	0.160		3.10	1252
	-		3.11	1195
	0.07		3.5	1141
	-		2.7	1231
	0.071		2.72	1268
	-		3.38	5259

( 002 )

( 5 )

F. PSA 2.2 ng /ml=		T.PSA 22 ng /ml=		
	F .PSA		T .PSA	
X		AV=22.3 STd=1.13	22.3	4154
			23.41	2516
			21.16	5259

( 003 )

( 6 )

F. PSA 0.2 ng /ml=		T.PSA 0.5 ng /ml=		
	F .PSA		T .PSA	
AV=0.12 STD =0.02	0.15	AV=0.61 STD=0.16	-	1328
	0.11		0.68	2170
			0.59	2085
	-		0.64	2121
	-		0.76	2021
	0.10		0.52	2235
	0.11		0.30	2240
	-		0.84	2146
	-		0.565	3002

(004)

(7)

F. PSA 1.8 ng /ml=		T.PSA 5 ng /ml=		
	F .PSA		T .PSA	
AV=1.08 STD =0.29	0.941	AV=4.33 STD =0.46	4.64	1010
	-		4.09	1054
	1.011		3.79	1067
	1.03		4.34	1112
	1.67		-	1140
	0.90		4.45	1252
	0.941		4.64	1195
	-		4.9	3069
	0.8		2.98	3259
	-		4.92	4138
	-		3.55	4171
	-		4.01	4318

(005)

(8)

F. PSA 1.0 ng /ml=		T.PSA 11 ng /ml=		
	F .PSA		T .PSA	
AV=0.6 STD =0.3	0.87	AV=9.8 STD =1.7	11.8	1141
	0.432		8.7	1231
	0.432		8.97	1268

(006)

(9)

F. PSA 0.4 ng /ml=		T.PSA 0.5 ng /ml=		
	F .PSA		T .PSA	
AV=0.14 STD =0.1	0.10	AV=0.46 STD =0.2	0.45	1283
	0.22		0.19	1328
	-		0.00*	2105
	0.11		0.65	3002
	0.12		0.54	3259

(007)

( 10 )

F. PSA 0.4 ng /ml=		T.PSA 2.6 ng /ml=		
	F .PSA		T .PSA	
AV=0.16 STD =0.02	0.145	AV=2.3 STD =0.5	1.95	2235
	0.18		1.6	2240
	-		3.12	2146
	-		2.018	3002
	-		1.32	2105
	0.05		2.61	3005
	-		2.4	3069
	-		2.45	4138
	-		1.85	4171
	-		2.37	2518

(008)

( 11 )

F. PSA 0.04 ng /ml=		T.PSA 1.0 ng /ml=		
	F .PSA		T .PSA	
	-	AV=1.3 STD =0.14	1.30	2085
	-		1.5	2121
	-		1.39	2021
	-		1.03	4318
	-		1.32	4154
	-		23.41*	2516
	-			

U / ml 24.5 =

( C-A. 15-3 )

(001)

( 12 )

STD=1.6	AV=28.1	29.20	1010
		26.9	1054

- \*

U / ml 16.6 = ( C-A. 15-3 ) (002) ( 13 )

STD=3.96	AV=14.69	11.1	1067
		10.45	1112
		12.94	1140
		11.03	1195
		16.8	1141
		14.4	1231
		14.04	1268
		75.0*	1283
		13.0	1328
		16.21	2235
		5.3*	2240
		30.4*	3259
		24.5	3069
		18.81	4171
13.10	2518		

U / ml 29.5 = ( C-A. 15-3 ) (003) ( 14 )

STD=8.0	AV=29.0	29.0	1141
		25.1	1231
		22.98	1268
		12.3*	2240
		30.5	3105
		20.30	3005
		35.1	3259
		44.8	3069
		30.99	4171
		1*	4154
		21.45	2518

- \*

**U / ml 18.2 = ( C-A. 15-3 ) (004) ( 15 )**

<b>STD=4</b>	<b>AV=16.1</b>	21.38	1010
		21.7	1054
		13	1067
		13.47	1112
		17.0	1070
		13.5	1195
		71*	1283
		11	3128
		17.77	2235

**U / ml 19 = ( C-A. 15-3 ) (005) (16)**

		32.25	2170
		53.7	2105
		28.20	3005
		1.5	4154

**ng / ml 1.5 = ( CEA ) (001) ( 17 )**

<b>STD=0.6</b>	<b>AV=1.62</b>	2.02	1010
		1.7	1054
		2.00	1067
		0.99	1112
		1.15	1070
		1.07	1140
		1.85	1252
		1.10	1195
		3.0*	2235
		2.2	2240
		1.7	2146
		1.97	3002
		1.4	2105
		0.72	3005
1.5	3259		

- \*

ng / ml 1.8 = ( CEA) (002) ( 18)

STD=1.0	AV=3.1	3.0	1141
		3.64	1268
		5.6*	1283
		4.1	1328
		2.47	2170
		2.7	3069
		3.15	4171
		2.2	4154

ng / ml 1.6 = ( CEA) (003) ( 19)

STD=0.5	AV=2.24	2.1	1141
		2.58	1268
		5.6	1283
		2.7	1328
		1.58	2518

ng / ml 0.8 = ( CEA) (004) ( 20)

STD=0.4	AV=1.11	1.23	1010
		0.96	1054
		1.3	1067
		0.69	1112
		0.64	1140
		1.30	1252
		1.03	1195
		1.92	2235
		1.1	2240
		0.97	2146

ng / ml 1.0 = ( .CEA) (005) ( 21)

STD=0.3	AV=1.4	1.85	3002
		1.2	2105
		1.05	3005
		1.6	3259
		1.2	3069

ng / ml 1.8 = (.CEA) (006) (22)

STD=0.5	AV=1.9	2.39	4171
		1.5	4154
		1.74	2518

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: -4-5

(1010) (23)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
W	2.02	1.5	A	29.20	24.5	A	0.186	0.03	A	3.17	3	001
A	1.23	0.8	W	21.38	18.2	A	0.941	1.8	A	4.64	5	004

(1054) (24)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
A	1.7	0.5	A	26.9	24.5			0.03	A	2.87	3	001
A	0.96	0.8	W	21.7	18.2			1.8	A	4.09	5	004

(1067) (25)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
W	2.00	1.5				A	0.094	0.03	A	2.70	3	001
A	1.3	0.8				A	1.011	1.8	A	3.79	5	004
			A	11.1	16.6							002
			W	13	18.2							004

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 1112 )

(26)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
A	0.99	1.5				A	0.12	0.03	A	2.94	3	001
W	0.69	0.8				A	1.03	1.8	A	4.34	5	004
			W	10.45	16.6							002
			W	13.47	18.2							004

( 1070 )

(27)

CEA			CA - 153			P.S.A free			P.S.A total				
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml		
A	1.15	1.5						0.03	A	2.94	3	001	
		0.8				A	17.0	18.2		1.8		5	004
						16.6							002

( 1140 )

(28)

CEA			CA - 153			P.S.A free			P.S.A total				
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml		
A	1.07	1.5	-	-	-			0.03	W	3.69	3	001	
W	0.64	0.8				18.2	W	1.67	1.8			5	004
						A	12.94	16.6					

( 1252 )

(29)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
A	1.85	1.5				A	0.160	0.03	A	3.10	3	001
A	1.30	0.8				A	0.90	1.8	A	4.45	5	004

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 1195 )

(30)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
A	1.15	1.5	-	-	-		0.03		A	3.11	3	001
A	1.03	0.8	-	-	-		1.8		A	4.75	5	004
			A	11.03	16.6							002
			W	13.5	18.2							004

( 1141 )

(31)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
			-	-	-	A	0.07	0.03	A	3.5	3	001
			-	-	-	A	0.87	1.0	A	11.8	11	005
A	3.0	1.8	A	16.8	16.6							002
A	2.1	1.6	A	29	29.5							003

( 1231 )

(32)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.03		A	2.7	3	001
							1.0		A	9.2	11	005
			A	14.4	16.6							002
			A	25.1	29.5							003

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 1268 )

(33)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
						A	0.017	0.03	A	2.72	3	001
						A	0.432	1.0	A	8.97	11	005
A	3.64	1.8	A	14.04	16.6							002
W	2.58	1.6	W	22.98	29.5							003

( 1283 )

(34)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
								0.03			3	001
						A	0.10	0.4	A	0.45	0.5	006
N	5.6	1.8	N	75	16.6							002
			N	71	18.2							004
N	5.6	1.6										003

( 1328 )

(35)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
A	2.7	1.6				W	0.15	0.2			0.5	003
-	-	-				A	0.22	0.4	A	0.19	0.5	006
W	4.1	1.8	A	13	16.6							002
-	-	-	N	11	18.2							004

(A) Acceptable

(W) Acceptable with warning

(N) Not Acceptable

( 2170 )

(36)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.2		0.5	003		
							0.04		1.0	008		
			A	32.25	19						-	005
		1.6			29.5						-	003
A	2.47	1.8	-	-	-						-	002

( 2085 )

(37)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.2	A	059	0.5	003	
							0.04	A	1.30	1.0	008	

( 2021 )

(38)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.2	A	0.76	0.5	003	
							0.04	A	1.39	1.0	008	

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 2235)

(39)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
						A	0.10	0.2	A	0.52	0.5	003
						A	0.145	0.4	A	1.95	2.6	007
-	-	-	A	16.21	16.6							002
W	1.22	0.8	A	17.77	18.2							004
N	3.0	1.5										001

( 2240 )

(40)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
						A	0.11	0.2	A	0.30	0.5	003
						A	0.18	0.4	A	1.6	2.6	007
			N	5.3	16.6							002
			W	12.3	29.5							003
W	2.2	1.5										001
A	1.1	0.8				004						

( 2146 )

(41)

CEA			CA – 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
								0.2	W	0.84	0.5	003
								0.4	W	3.12	2.6	007
W	1.7	1.5							001			
A	0.97	0.8							004			

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 3002 )

(42)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.2	A	0.565	0.5	003	
							0.4	A	2.018	2.6	007	
A	1.97	1.5										001
A	1.85	1.0										005

( 2105 )

(43)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.4	W	0.00	0.5	006	
							0.4	W	1.32	2.6	007	
A	1.2	1.0	N	53.7	19							005
			A	30.5	29.5							003
A	1.4	1.5										001

( 3005 )

(44)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
						A	0.11	0.4	A	0.65	0.5	006
						A	0.05	0.4	A	2.61	2.6	007
A	1.05	1.0	N	28.20	19							005
			W	20.30	29.5							003
W	0.72	1.5										001

(A) Acceptable

(W) Acceptable with warning

(N) Not Acceptable

( 3259 )

(45)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
						A	0.12	0.4	A	0.54	0.5	006
						A	0.8	1.8	W	2.98	5	004
			N	30.4	16.6							002
			W	35.1	29.5							003
A	1.5	1.5										001
A	1.6	1.0										005

( 3069 )

(46)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.4	A	2.4	2.6	007	
							1.8	A	4.9	5	004	
A	2.7	1.8	N	24.5	16.6							002
			N	44.8	29.5							003
A	1.2	1.0										005

( 4138 )

(47)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.4	A	2.45	2.6	007	
							1.8	A	4.92	5	004	

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 4171 )

(48)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.4	A	1.85	2.6	007	
							1.8	W	3.55	5	004	
A	3.15	1.8	W	18.81	16.6							002
			A	30.99	A							003
W	2.39	1.8										006

( 4318 )

(49)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.04	W	1.03	1.0	008	
							1.8	A	4.01	5	004	

( 4154 )

(50)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.04			1.0	008	
							2.2	A	22.3	22	002	
			N	1.5	19							005
			N	1	29.5							003
A	2.2	1.8										002
A	1.5	1.8										006

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

( 2516 )

(51)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.04	A	1.32	1.0	008	
							2.2	A	23.41	22	002	

( 2518 )

(52)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.4	A	2.37	2.6	007	
							2.2			22	002	
			A	13.10	16.6							002
W	1.58	1.6	W	21.45	29.5							003
A	1.74	1.8										006

( 5259 )

(53)

CEA			CA - 153			P.S.A free			P.S.A total			
	ng/ml	ng/ml		u/ml	u/ml		ng/ml	ng/ml		ng/ml	ng/ml	
							0.03	A	3.38	3	001	
							2.2	A	21.16	22	002	

(A) Acceptable  
(W) Acceptable with warning  
(N) Not Acceptable

: -6

:

T.PSA .1

F.PSA .2

( F.PSA & CEA ) .3

:

.1

.2

.3

: -7

: -8

[1] Prescriptions Générales Concernant la Compétence des Laboratoires d'étalonnage et d'Essais- 1991- Ottawa-Ontario-Canada.

[2] Harmonised Guidelines for Internal Quality Control in Analytical Chemistry Laboratories-1994- ISO/REMCO.

[3] General Requirements for The Competence of Testing and Calibration Laboratories- ISO/IEC- 17025:1999.

[4] International Soil-Analytical Exchange " Quarterly Reports" for years from 1995 to 1999.

[5] Quality Systems- Model for quality Assurance in Design Development, Production, installation and Servicing – ISO 9001- 2000.

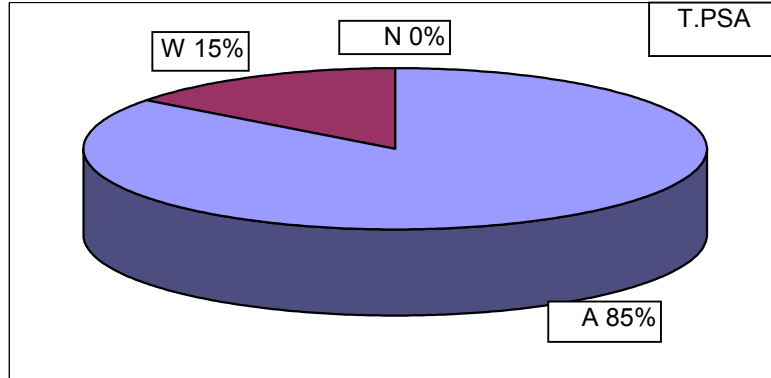
[6] Control Charts- General Guide and Introduction – ISO 7870-1993.

[7] Control Charts for arithmetic average with warning limits – ISO 7873-1993.

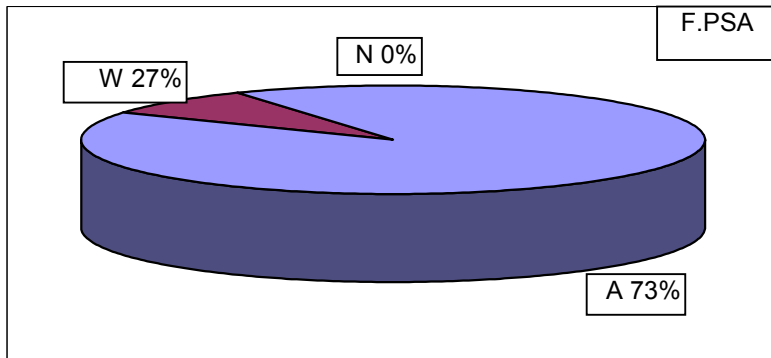
[8] HZ-011 . - - 1998.

[9] HZ-009 . - 1997.

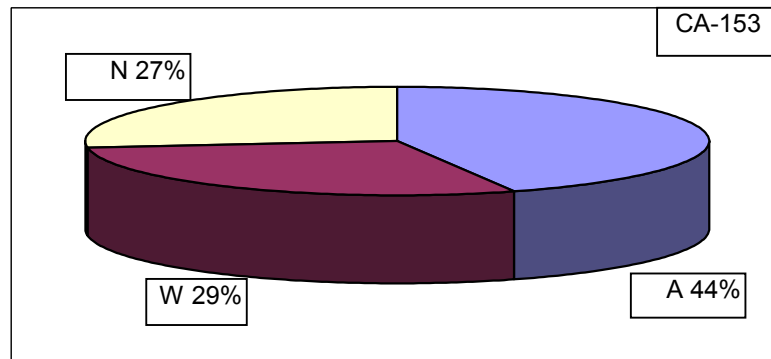
توزيع العلامات وفق معايير التقييم لكل معايرة



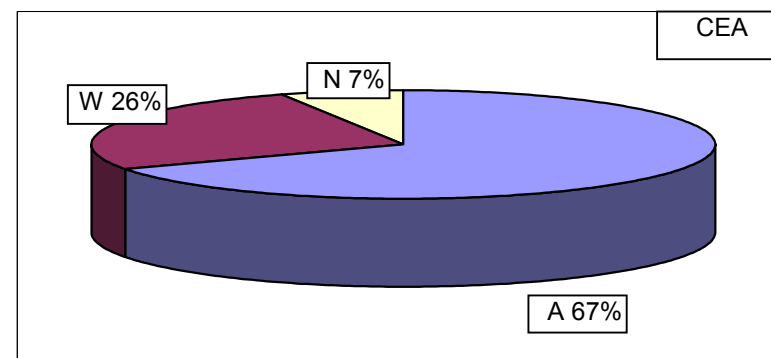
46 A  
8 W  
0 N



22 A  
2 W  
0 N



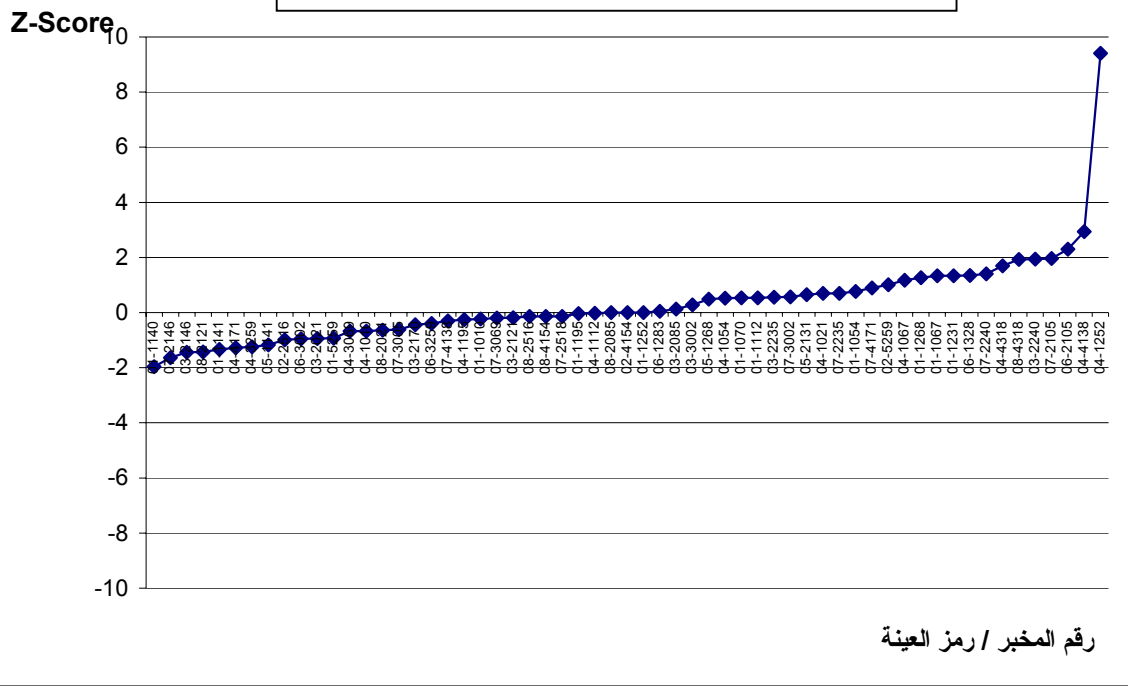
18 A  
12 W  
11 N



31 A  
12 W  
3 N

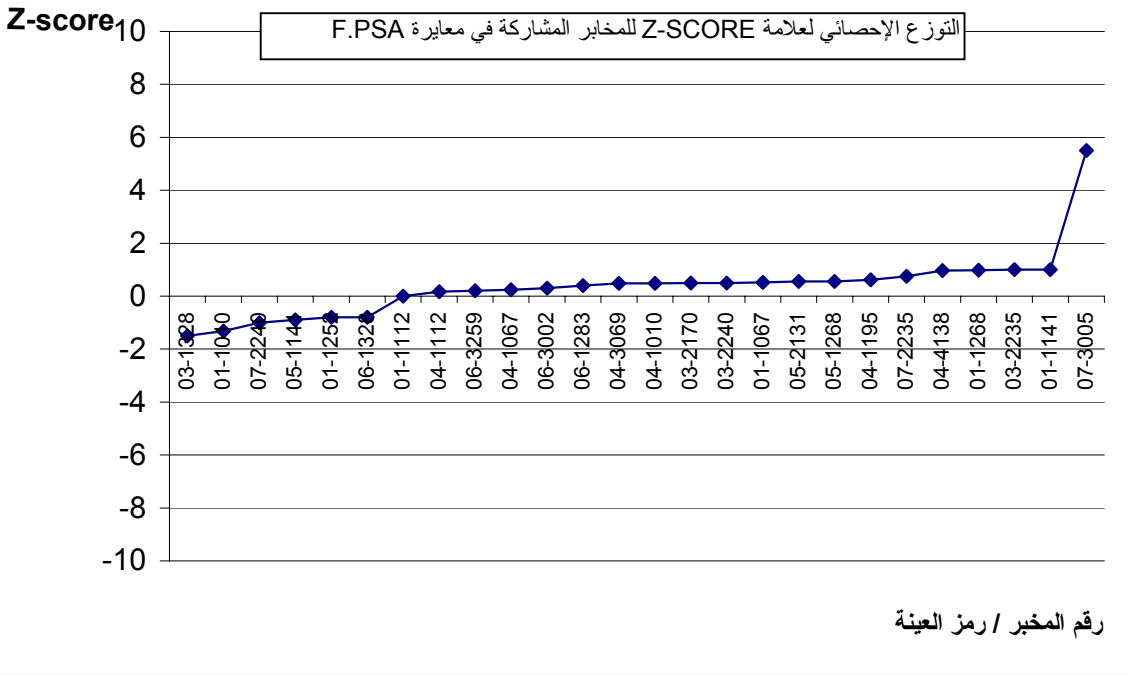
٥-٥- عرض النتائج في بطاقات إحصائية

التوزيع الإحصائي لعلامة Z-SCORE للمخابر المشاركة في معايرة T.PSA

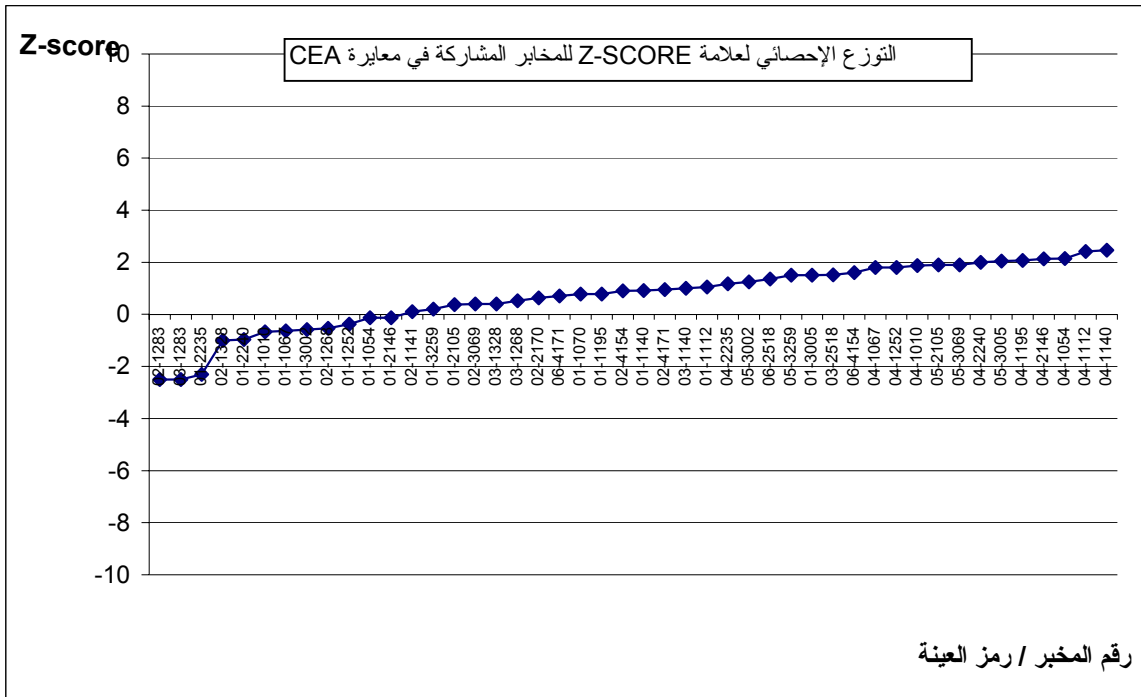
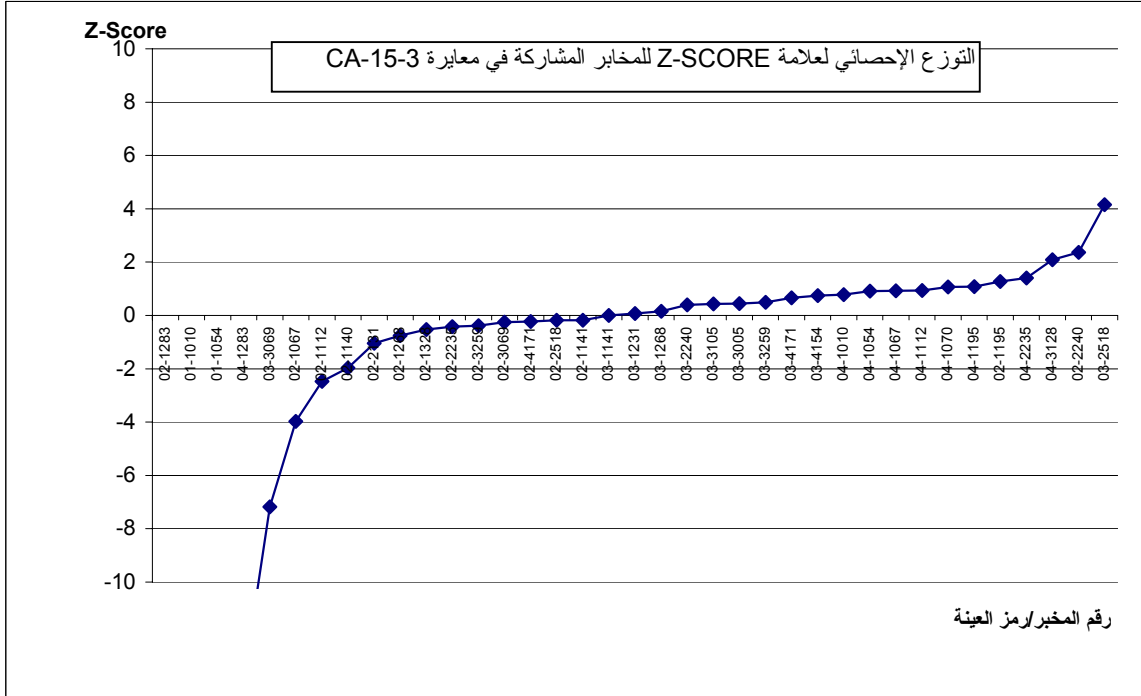


رقم المخبر / رمز العينة

التوزيع الإحصائي لعلامة Z-SCORE للمخابر المشاركة في معايرة F.PSA



رقم المخبر / رمز العينة



عدد المخابر المشاركة في معايرة كل واسم

- T.PSA
- F.PSA
- CA-15-3
- CEA

