INDIAN PHARMACOPOEIA COMMISSION

MINISTRY OF HEALTH & FAMILY WELFARE, GOVERNMENT OF INDIA
SECTOR-23, RAJ NAGAR, GHAZIABAD- 201 002.
Tel No: 0120- 2783392, 2783400, 2783401; Fax: 2783311
E-Mail: ipclab@vsnl.net, Web: www.ipc.gov.in

No. IPC/AR&D/7021/IP-2014/ER-013 **Dated: 20.02.2017**

To,

1. **Drug Controller General (India)/CDSCO, Zonal Offices**
2. **All State Drug Controllers**
3. **Members of Scientific body of the IPC**
4. **Members of Sub-committee of Scientific Body of the IPC**
5. **Government Analysts**
6. **Director of Drug Laboratories**
7. **IDMA/OPPI/BDMA/FSSAI/Small Scale Industry Associations**

ERRATA – 013 for IP-2014

As you are aware that 7th edition of Indian Pharmacopoeia has become official from 1st April, 2014. Based on Scientific inputs, some monographs needed corrections, accordingly an Errata-013 is issued containing minor corrections. This is for notice and immediate compliance.

(Dr. G.N. Singh)
Secretary-cum-Scientific Director

Encl:- ERRATA – 013 for IP-2014

Cc to:- Publication Division to put up on IPC website.

Errata-013 to IP-2014

2.2.10 Microbiological Assay of Antibiotics. Page 50

Table 3, after last line

Insert the following

Vancomycin	B[13]	No	Water	1 mg	7	B2	10 µg	37-39

Table 3, foot note, line 5

Insert the following

13. With *Staphylococcus aureus* ATCC 6538 as test organism.

Table 4, last line

Insert the following

Vancomycin	*Staphylococcus aureus*	6538

Table 5, after line 29

Insert the following

Staphylococcus aureus (6538)	A/1	37-39	24 hr	-	C	As required	Vancomycin

4.5. Volumetric Reagents and Solutions. Page 834

Preparation and Standardisation of Volumetric Solutions. Para 1, last line

Change **from**: 0.2 per cent

to: 0.5 per cent

Aluminium Hydroxide Gel. Page 1021

Add the following as synonym after title

Dried Aluminium Hydroxide Gel.

Add before Assay.

Other tests. Comply with the tests stated under Oral Liquids.

Amoxycillin Sodium. Page 1052

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Amoxycyllin Injection. Page 1053

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Amoxycillin Trihydrate. Page 1054

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Amoxycillin Capsules. Page 1055

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Amoxycillin Dispersible Tablets. Page 1056

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Amoxycillin Oral Suspension. Page 1057

Assay. After Chromatographic system, para 1, lines 1 and 2

Change **from**: Inject the reference solution. The test is not valid unless the capacity factor is between 1.1 and 2.8, the column efficiency is.....

to: Inject the reference solution. The test is not valid unless the column efficiency is.....

Ampicillin Capsules. Page 1063

Assay. After Chromatographic system, para 2, lines 1 to 4

Change **from**: Inject reference solution (a). The capacity factor is not more than 2.5 and the tailing factor is not more than 1.4. The test is not valid unless the relative standard deviation for replicate injections is at most 2.0 per cent.

to: Inject the reference solution (a). The test is not valid unless the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Ampicillin Oral Suspension. Page 1064

Assay. After Chromatographic system, para 2, lines 1 to 4

Change **from**: Inject reference solution (a). The test is not valid unless the capacity factor is not more than 2.5, the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

to: Inject the reference solution (a). The test is not valid unless the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Ampicillin Sodium. Page 1066

Assay. After Chromatographic system, para 2, lines 1 to 4

Change **from**: Inject reference solution (a). The test is not valid unless the capacity factor is not more than 2.5, the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

to: Inject the reference solution (a). The test is not valid unless the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Ampicillin Injection. Page 1068

Assay. After Chromatographic system, para 2, lines 1 to 4

Change **from**: Inject reference solution (a). The test is not valid unless the capacity factor is not more than 2.5, the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

to: Inject the reference solution (a). The test is not valid unless the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Ampicillin Trihydrate. Page 1070

Assay. After Chromatographic system, para 2, lines 1 to 4

Change **from**: Inject reference solution (a). The test is not valid unless the capacity factor is not more than 2.5, the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

to: Inject the reference solution (a). The test is not valid unless the tailing factor is not more than 1.4 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Carboxymethylcellulose Sodium. Page 1281

Storage.

Change **from** : Store protected from light.
to : Store protected from light and moisture.

Cefotaxime Sodium Injection. Page 1311

Related substances. *Reference solution.*

Change **from** : A 0.001 per cent w/v solution of *cefotaxime acid RS* in the mobile phase.

to : Dilute 1.0 ml of the test solution to 100.0 ml with the mobile phase.

Insert after Storage
Labelling. The label states the strength in terms of the equivalent amount of cefotaxime.

Dexlansoprazole. Page 1531

Molecular Formula.

Change **to**: $C_{16}H_{14}F_3N_3O_2S$
$C_{16}H_{14}F_3N_3O_2S$, 1½ H_2O

Mol. Wt.
Change **to**: 369.4(anhydrous)
396.4(sesquihydrate)

Para 1.

Change **to**: Dexlansoprazole is (+)-2-[[4-(2,2,2-Trifluoroethoxy)-3-methylpyridin-2-yl]methylsulfinyl]-1*H*-benzo[d]imidazole or its sesquihydrate.

Water (2.3.43).

Change **to**: Not more than 1.0 per cent (for the anhydrous form) and 6.0 to 8.0 per cent (for the sesquihydrate form), determined on 0.3 g.

Related substances.

Change **from**: *Test solution*. Dissolve 10 mg of substance under examination in *0.01 M methanolic sodium hydroxide* and diluted to 10.0 ml with *0.01 M methanolic sodium hydroxide* in amber volumetric flask.

to: *Test solution*. Dissolve 10 mg of the substance under examination in *0.01 M methanolic sodium hydroxide* and diluted to 10.0 ml with *0.01 M methanolic sodium hydroxide* in amber coloured volumetric flask.

Change **from**: *Reference solution.* A 0.0001 per cent solution of *dexlansoprazole RS* in *0.01 M methanolic sodium hydroxide*.

to: *Reference solution.* A 0.0001 per cent w/v solution of *dexlansoprazole RS* in *0.01 M methanolic sodium hydroxide* in amber coloured volumetric flask.

Assay.

Change **from**: *Test solution.* Dissolve 0.1 g of the substance under examination in 50 ml of solvent mixture in 100-ml amber colour volumetric flask and dilute to 100 ml with solvent mixture. Dilute 5.0 ml of this solution to 50 ml with solvent mixture.

Change **to**: *Test solution.* Dissolve 0.1 g of the substance under examination in 50 ml of solvent mixture in 100-ml amber coloured volumetric flask and dilute to 100.0 ml with solvent mixture. Dilute 5.0 ml of this solution to 50.0 ml in amber coloured volumetric flask with mobile phase.

Change **from**: *Reference solution.* A 0.01 per cent w/v solution of de *dexlansoprazole RS* in the mobile phase.

to: *Reference solution.* A 0.01 per cent w/v solution of *dexlansoprazole RS* using amber coloured volumetric flask in the mobile phase.

Divalproex Prolonged-release Tablets. Page 1602

Related substances. After chromatographic system. Para 2, line 1.

Change **from**: Inject 1 µl of internal standard solution (a) and test solution (b).

to: Inject 1 µl of internal standard solution (a), test solution (a) and (b).

Esmolol Hydrochloride. Page 1688

Related substances. Under chromatographic system, after gradient programme,

Change **from**: Name — Relative retention time

Esmolol free acid[1]	0.43
Esmolol dimer[2]	0.65
Esmolol aminopentanol analog[3]	0.84
N-ethyl esmolol[4]	0.88
Esmolol	1.0

[1] 3-{4-[2-hydroxy-3-(isopropylamino)propoxy]phenyl}propanoic acid,

[2] methyl 3-{4-[2-hydroxy-3-(3-{4-[2-hydroxy-3-(isopropylamino)propoxy]phenyl}-*N*-isopropylpropanamido) propoxy]phenyl}propanoate,

[3] methyl 3-[4-(5-amino-2-hydroxypentyloxy)phenyl]propanoate,

[4] methyl 3-{4-[3-(ethylamino)-2-hydroxypropoxy]phenyl}propionate.

Inject reference solution (b). The test is not valid unless the resolution between the peaks due to esmolol free acid and esmolol is not less than 4.0 and the tailing factor is not more than 2.0.

Inject reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of any peak corresponding to esmolol free acid is not more than 0.3 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.3 per cent), the area of any peak corresponding to esmolol dimer and *N*-ethyl esmolol is not more than 0.15 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.15 per cent). The area of any other secondary peak is not more than 0.1 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.1 per cent). The sum of areas of all the secondary peaks is not more than 0.7 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.7 per cent). Ignore any peak with an area less than 0.05 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.05 per cent).

to: Name

	Relative retention time
Esmolol free acid[1]	0.43
Esmolol dimer[2]	6.5
Esmolol isopropylamide analog[3] (if present)	0.65
N-ethyl esmolol[4]	0.84
Esmolol	1.0

[1] 3-{4-[2-hydroxy-3-(isopropylamino)propoxy]phenyl}propanoic acid,

[2] methyl 3-{4-[2-hydroxy-3-(3-{4-[2-hydroxy-3-(isopropylamino)propoxy]phenyl}-*N*-isopropylpropanamido) propoxy]phenyl}propanoate,

[3] 3-{4-[2-Hydroxy-3-(isopropylamino)propoxy]phenyl}-N-isopropylpropionamide,

[4] methyl 3-{4-[3-(ethylamino)-2-hydroxypropoxy]phenyl}propionate.

Inject reference solution (b). The test is not valid unless the resolution between the peaks due to esmolol free acid and esmolol is not less than 4.0 and the tailing factor is not more than 2.0.

Inject reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of any peak corresponding to esmolol free acid is not more than 0.4 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.4 per cent), the area of any peak corresponding to esmolol dimer is not more than 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.5 per cent), the area of any peak corresponding to esmolol isopropylamide analog is not more than 0.25 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.25 per cent), the area of any peak corresponding to *N*-ethyl esmolol is not more than 0.15 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.15 per cent). The area of any other secondary peak is not more than 0.1 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.1 per cent). The sum of areas of all the secondary peaks is not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (1.0 per cent). Ignore any peak with an area less than 0.05 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.05 per cent).

Finasteride Tablets. Page 1760

Related substance test, under chromatographic system.

Change **from**: Name

	Relative retention time

Finasteride impurity A[1]	0.9
Finasteride (Retention time: about 28 minutes)	1.0
Finasteride impurity B[2]	1.2
Finasteride impurity C[3]	1.4

to:

Name	Relative retention time	Correction factor
Finasteride impurity A[1]	0.9	2.4
Finasteride (Retention time about: 28 minutes)	1.0	---
Finasteride impurity B[2]	1.2	---
Finasteride impurity C[2]	1.3	0.72

Fructose Injection. Page 1833

Bacterial endotoxins (2.2.3).

Change **from**: Not more than 0.5 Endotoxin Unit per ml of fructose.

to: Not more than 0.5 Endotoxin Units per ml.

Isoxsuprine Hydrochloride. Page 2020

Mol. Wt.
Change **from**: 337.9
to: 337.8

Specific optical rotation (2.4.22).

Change **from**: **Specific optical rotation** (2.4.22). – 0.05º to + 0.05º, determined in a 1.0 per cent w/v solution.

to: **Optical rotation** (2.4.22). – 0.05º to + 0.05º, determined in a 1.0 per cent w/v solution, prepared with gentle warming, if necessary.

Isoxsuprine Injection. Page 2021

Bacterial endotoxins (2.2.3).

Change **from**: Not more than 35.7 Endotoxin Units per mg of isoxsuprine.

to: Not more than 35.7 Endotoxin Units per mg of isoxsuprine hydrochloride.

Latanoprost. Page 4207

Assay. Chromatographic system, mobile phase,

Change **from**: a mixture of 94 volumes of *hexane* and 6 volumes of *ethanol (95 per cent)*,
to: a mixture of 94 volumes of *hexane* and 6 volumes of *ethanol*,

Levofloxacin Infusion. Page 2086

Usual strength.

Change **from**: 500 mg.

to: 5 mg per ml.

Storage.

Change **from** : Store protected from light and moisture.

to : store protected from light.

Levofloxacin Injection. Page 2087

Change **from**: Store protected from light and moisture, at a temperature not exceeding 30°.

to: Store protected from light, at a temperature not exceeding 30°.

\

Methoxamine Hydrochloride. Page 2195

Assay. Lines 2 and 3.
Change **from** : ...15 ml of *mercuric acetate solution* and 5 ml of *acetic anhydride*, warming....
to : ... 15 ml of *mercuric acetate solution*, warming....

Methyldopa. Page 2199

Heavy metals. Last line.
Change **from** : Method B
to : Method A.

Metronidazole Benzoate Oral Suspension. Page 2217

Storage.

Change **from** : Store protected from light and moisture.
to : store protected from light.

Paracetamol Infusion. Page 2430

Bacterial endotoxins (2.2.3).

Change **from**: Not more than 2.0 Endotoxin Units per ml of paracetamol.

to: Not more than 2.0 Endotoxin Units per ml.

Paroxetine Hydrochloride. Page 2439, 3915

Add After Related substances

Impurity D *(For Paroxetine Hydrochloride Hemihydrate)*. Determine by liquid chromatography (2.4.14).

Test solution. Dissolve 0.1000 g of the substance under examination in 20 ml of *methanol* and dilute to 100.0 ml with the mobile phase.

Reference solution (a). Dilute 1.0 ml of the test solution to 100.0 ml with the mobile phase. Further dilute 1.0 ml of this solution to 10.0 ml with the same solvent.

Reference solution (b). Dissolve 5 mg of *paroxetine impurity D RS ((3R,4S)-3-[(1,3-benzodioxol-5-yloxy)methyl]-4-(4-fluorophenyl)piperidine ((+)-trans-paroxetine) RS)* and 5 mg of *paroxetine hydrochloride hemihydrate RS* in 2 ml of *methanol* and dilute to 100.0 ml with the mobile phase.

Reference solution (c). Dissolve 10 mg of *paroxetine hydrochloride hemihydrate RS* in 2 ml of methanol and dilute to 10.0 ml with the mobile phase.

Chromatographic system

- a stainless steel column 10 cm x 4.0 mm packed with silica gel a-1 acid glycoprotein for chiral chromatography (5 µm),
- mobile phase: a mixture of 80 volumes of a buffer solution prepared by dissolving 5.8 g of *sodium chloride* in 1000 ml of *water* and 20 volumes of *methanol*,
- flow rate: 0.5 ml per minute,
- spectrophotometer set at 295 nm,
- injection volume: 10 µl.

Inject reference solution (b). The test is not valid unless the resolution between the peaks corresponding to impurity D and paroxetine is not less than 2.2.

Inject the reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of any secondary peak is not more than twice the area of the principal peak in the chromatogram obtained with reference solution (a) (0.2 per cent).

Ranitidine Oral Solution. Page 3924

Assay. Last para.

Change **from**: Determine the weight per ml of the oral solution (2.4.29) and calculate the content of $C_{13}H_{22}N_4O_3S$.

to : Calculate the content of $C_{13}H_{22}N_4O_3S$.

Ritonavir. Page 2677

Description. Add the following at the end.

It shows polymorphism (2.5.11).

Tacrolimus. Page 4244

Specific optical rotation (2.4.22).

Change **from**: -110.0˚ to -115.0˚, determined in a 1.0 per cent w/v solution in *dimethylformamide.*

to: -110.0˚ to -115.0˚, calculated on is as basis and determined in a 1.0 per cent w/v solution in *dimethylformamide.*

Related substances A. Insert the following after related substances A.

NOTE. If the related substance test other than A is used the label states the article complies with related substance test B.

Assay

After chromatographic system, Para 3

Change **from**: Calculate the content of $C_{44}H_{69}NO_{12.}$

to: Calculate the content of tacrolimus $C_{44}H_{69}NO_{12}$ in the portion of tacrolimus taken by the formula

(rU/rS)X(CS/CU)x100

in which *rU* is the sum of the peak responses of tacrolimus and tacrolimus 19-epimer from the test solution, *rS* is the sum of the peak responses of tacrolimus and tacrolimus 19-epimer from the reference solution and *CS* and *CU* are the concentration of reference solution and test solution respectively.

Tacrolimus Capsules. Page 4247

Dissolution. (2.5.2)

Change **from**: *Allow the solution to stand for 3 hour at ambient temperature before use. Protect the solution from light by using low-actinic glassware.*

to: *Allow reference solution (b) to stand for 3 hour at ambient temperature before use. Protect the solution from light by using low-actinic glassware.*

Apparatus No. 1 (Use sinkers, if required),

Change **from**: *Allow the solution to stand for 3 hour at ambient temperature before use. Protect the solution from light by using low-actinic glassware.*

to: *Allow reference solution (b) to stand for 3 hour at ambient temperature before use. Protect the solution from light by using low-actinic glassware.*

Reference solution (b).

Change **from**: Dilute reference solution (a) to obtain a 0.00005 per cent w/v solution of *tacrolimus RS* in the dissolution medium.

to: Dilute reference solution (a) to obtain a 0.0005 per cent w/v solution of *tacrolimus RS* in the dissolution medium. Dilute further with dissolution medium, if necessary.

After chromatographic system.

The relative retention time for tacrolimus 19 epimer and tacrolimus are about 0.67 and 1.0 respectively.

Inject reference solution (b). The test is not valid unless the tailing factor is not more than 2 and the relative standard deviation for replicate injections is not more than 5.0 per cent for the sum of the areas of tacrolimus and tacrolimus 19-epimer.

Related substance A. *Test solution*

Change **from**: Transfer the mixed contents of the capsule containing about 10 mg of Tacrolimus to a centrifuge tube. Add 1.5 ml of a mixture of 60 volumes of *n-butyl chloride* and 40 volumes of *acetonitrile*, mix with the aid of ultrasound add 3.5 ml of *n-hexane*, mix. Centrifuge this solution, and collect the supernatant or pass the solution through a 0.5-µm membrane filter.

to: Transfer the mixed contents of the capsules containing about 10 mg of Tacrolimus (5 mg, in case of capsules having label claim of 0.5 mg) to a.....;.....

Under chromatographic system. Lines 1 to 3

Change **from**: a stainless steel column 25 cm x 4.6 mm, packed with dihydoxypropane groups bonded to porous silica (5 µm),

to: two stainless steel column 25 cm x 4.6 mm, packed with dihydoxypropane groups bonded to porous silica (5 µm),

Insert the following after related substances A.

NOTE. If the related substance test other than A is used the label states the article complies with related substance test B.

B. *Test solution*

Change **from**: Disperse a quantity of the mixed content containing 15 mg of tacrolimus in the solvent mixture and dilute it to 100.0 ml with the solvent mixture. Dilute 1.0 ml of the resulting solution to 10.0 ml with the solvent mixture.

to: Disperse a quantity of the mixed content of capsules containing 15 mg of Tacrolimus in the solvent mixture with the aid of ultrasound, and dilute to 10.0 ml.

After chromatographic system.

Change **to**:

Name	Relative retention time
Tacrolimus hydroxyl acid[1]	0.18
Tacrolimus open ring[2]	0.49
Ascomycin 19-epimer[3]	0.52
Tacrolimus 19-epimer[4]	0.62
Ascomycin[5]	0.84
Desmethyl Tacrolimus[6]	0.91
Tacrolimus	1.0
Tacrolimus 8-epimer[7]	1.28
Tacrolimus 8-propyl analog[8]	1.3

Para 2, lines 1 to 5.

Change **from**: Inject reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of peak due to tacrolimus 21-carboxylic acid and tacrolimus 8-epimer is not more than the area of the peak in the chromatogram obtained with reference solution (a) (0.5 per cent)…….

to: Inject reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of peak due to tacrolimus hydroxyl acid multiplied by correction factor 0.67 and tacrolimus 8-epimer is not more than the area of the peak in the chromatogram obtained with reference solution (a) (0.5 per cent),.....

Assay. *Test solution*

Change **to**: Weigh and mix content of 20 capsules. Disperse a quantity of the mixed content containing 5 mg of tacrolimus in solution B and dilute it to 100.0 ml with the solution B.

Reference solution.

Change **to**: A 0.005 per cent w/v solution of tacrolimus in solution B.

After chromatographic system, Para 3

Change **from**: Calculate the content of $C_{44}H_{69}NO_{12}$ in the capsules.

to: Calculate the content of tacrolimus $C_{44}H_{69}NO_{12}$ in the portion of capsules taken by the formula

$$(rU/rS)X(CS/CU)x100$$

in which *rU* is the sum of the peak responses of tacrolimus and tacrolimus 19-epimer from the test solution, *rS* is the sum of the peak responses of tacrolimus and tacrolimus 19-epimer from the reference solution and *CS* and *CU* are the concentration of reference solution and test solution respectively.

Tamsulosin Hydrochloride Prolonged-release Capsules. Page 3936

Para 2, line 2

Change **from**: 95.0 per cent and not more than 105.0 per cent of the stated

to: 90.0 per cent and not more than 110.0 per cent of the stated

Thiopentone Sodium. Page 2863

Related substances.

Change **to**: Determine by liquid chromatography (2.4.14)

Test solution. Dissolve 20.0 mg of the substance under examination in the mobile phase and dilute to 20.0 ml with the mobile phase.

Reference solution. Dilute 1.0 ml of the test solution to 100.0 ml with the mobile phase. Dilute 5.0 ml of this solution to 10.0 ml with the mobile phase

Chromatographic system

- a stainless steel column 15 cm x 4.6 mm, packed with end-capped octadecylsilane bonded to porous silica (5 µm)
- mobile phase: a mixture of 65 volumes of 0.1 per cent w/v solution of *phosphoric acid* and 35 volumes of *acetonitrile*,
- flow rate: 1 ml per minute,

- spectrophotometer set at 225 nm,
- injection volume: 10 µl.

Allow the chromatography to proceed for twice the retention time of thiopental.

Name	Relative retention time	Correction factor (about)
Thiopental impurity A[1]	0.3	-
Thiopental impurity B[2]	0.4	1.5
Thiopental impurity C[3]	0.9	-
Thiopental (retention time about 20 minutes)	1.0	-
Thiopental impurity D[4]	1.3	-

[1]5-[(1*RS*)-1-methylbutyl]-2-thioxo-2,3-dihydropyrimidine-4,6(1*H*,5*H*)-dione,
[2]5-ethyl-5-[(1*RS*)-1-methylbutyl]pyrimidine-2,4,6(1*H*,3*H*,5*H*)-trione,
[3]5-ethyl-5-(1-ethylpropyl)-2-thioxo-2,3-dihydropyrimidine-4,6(1*H*,5*H*)-dione,
[4]mixture of (2*RS*,3*RS*)-2-(carbamothioylcarbamoyl)-2-ethyl-3-methylhexanoic acid and (2*RS*,3*SR*)-2-(carbamothioylcarbamoyl)-2-ethyl-3-methylhexanoic acid.

Inject the reference solution. The test is not valid unless the column efficiency is not less than 2000 theoretical plates and the tailing factor is not more than 2.0.

Inject the reference solution and the test solution. In the chromatogram obtained with test solution the area of any peak corresponding to thiopental impurity C is not more than 6 times the area of the principal peak in the chromatogram obtained with reference solution (3.0 per cent), the area of any peak corresponding to thiopental impurity B is not more than twice the area of the principal peak in the chromatogram obtained with reference solution (1.0 per cent), the area of any peak corresponding to thiopental impurity D is not more than 0.6 times the area of the principal peak in the chromatogram obtained with reference solution (0.3 per cent), the area of any other secondary peak is not more than 0.2 times the area of the principal peak in the chromatogram obtained with reference solution (0.1 per cent), the sum of the areas of any secondary peaks is not more than 10 times the area of the principal peak in the chromatogram obtained with reference solution (5.0 per cent). Ignore any peak with an area less than 0.1 times the area of the principal peak in the chromatogram obtained with reference solution (0.05 per cent).

Vancomycin Hydrochloride. Page 2955

Assay.

Change **from**: Determine by the microbiological assay of antibiotics, Method B (2.2.10) using *vancomycin hydrochloride RS.*

to: Determine by the microbiological assay of antibiotics, Method A or Method B (2.2.10) using *vancomycin hydrochloride RS.*

Vancomycin Hydrochloride for Intravenous Infusion. Page 2957

Assay. Para 2

Change **from**: Determine on the mixed contents of ten containers by microbiological assay of antibiotics, Method B (2.2.10).

to: Determine on the mixed contents of ten containers by microbiological assay of antibiotics, Method A or Method B (2.2.10).

Herbs and Herbal Products.

Ginkgo Dry Extract. Page 4290

Assay. *Test solution*.

Change **from**: Dissolve about 200 mg of the extract under examination in 20 ml *methanol*, add 20 ml *1.5 N hydrochloric acid* and sonicate for 10 minutes and dilute to 50.0 ml with *methanol* and filter through 0.45µ filter.

to: Reflux accurately about 300 mg of extract under examination with 100 ml of extraction solvent containing 25 volumes of *methanol*, 3 volumes of conc. *hydrochloric acid* and 12 volumes of *water* in a water bath for 135 minutes. Allow to cool at room temperature and make final volume up to 100.0 ml with *methanol*.

(Note- *The solution will turn deep red. The colour of the solution is not a definitive indication of reaction completeness*.)

Reference solution.

Change **from**: Dissolve about 10 mg of the *quercetin RS* under examination in 20 ml *methanol*, add 20 ml *1.5M hydrochloric acid* and sonicate for 10 minutes and dilute to 50.0 ml with *methanol* and filter through 0.45µ filter.

to: Dissolve about 1.25 mg *quercetin RS*, 1.25 mg of *kaempferol RS* and 0.3 mg of *isorhamnetin RS* in 5.0 ml *methanol* and sonicate for 10 minutes, dilute to 10 ml with *methanol* and filter.

Ginkgo Tablet. Page 4291

Assay. *Test solution*.

Change **from**: Weigh and powder 20 tablets. Weigh accurately a quantity of powder containing about 120 mg of flavones in a 50 ml volumetric flask. Add 20 ml of *methanol* and then add 20 ml *1.5 N hydrochloric acid* and sonicate for 10 minutes and make up the volume with *methanol*. Heat on water bath for 25 minutes, allow to cool about 20 minutes and centrifuge for 10 minutes and take supernatant liquid, filter through 0.45µ filter.

to: Weigh and powder 20 tablets. Weigh accurately a quantity of powder equivalent to about 50mg of flavones glycosides in a 50 ml volumetric flask. Add 20 ml of *methanol*, and sonicate for 3 minutes. Add 20 ml *1.5M hydrochloric acid* and sonicate again for 10minutes. Allow to cool at room temperature and make final volume upto 50ml with *methanol*.Centrifuge for 10 minutes and transfer the clear supernatant in a amber colored glass container, heat in a water bath for 25 minutes and allow to cool at room temperature.

(Note- *The solution wil turn deep red. The colour of the solution is not a definitive indication of reaction completeness.*)

Reference solution.

Change **from**: Dissolve 3 different amounts 5 mg, 10 mg, 15 mg of *quercetin RS* in 50 ml volumetric flask, add 20 ml of methanol then add 20 ml *1.5 M hydrochloric acid* and sonicate for 10 minutes and makeup the volume with *methanol* and filter through 0.45µ filter filter.

to: Dissolve accurately about 2.0 mg *quercetin RS*, 2.0 mg of *kaempferol RS* and 0.5 mg of *isorhamnetin RS* in 5.0 ml *methanol* and sonicate for 10 minutes, dilute to 10.0 ml with *methanol* and filter.