



تأسس عام 1987
اوپام AUPAM

الاتحاد العربي لمنتجي الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

Established by a resolution of the Arab Economic Unity Council

تأسس بقرار من مجلس الوحدة الاقتصادية

ص. ب : 811520 عمان 11181، المملكة الأردنية الهاشمية P.O Box 811520 Amman H.K . Jordam

نشرة الاتحاد

نشرة علمية إخبارية متنوعة توزع بواسطة البريد الإلكتروني تصدر عن الأمانة العامة للاتحاد
الإشراف العلمي والفني : د. باسل الشاكر عضو مجلس الإدارة

AUPAM Online Bulletin

للاشتراك والمراسلة : onlinebulletin@aupam.com

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عدد : (4) كانون-2 2009

الصفحة الأولى : الافتتاحية

في هذا الظلام الدامس وهذا الظلم القاسي.
نحن نتمسك بالثوابت ولا ننسى قضيتنا.
فلسطين ارض عربية وستبقى أرضا عربية.
أهل فلسطين سيعودون إلى أرضهم وبلادهم.

العدوان الوحشي البربري على غزة وصمود أهلها الأسطوري
وتصميمهم على مقاومة آلة الحرب الصهيونية المجرمة رغم العدد
الهائل من الضحايا وشلال الدم الزكي الذي روى أرض فلسطين
يؤكد من جديد ان نهاية الكيان الصهيوني الغاصب حتمية وقريبة
بإذن الله.

ندعو لشهدائنا بالرحمة وللجرحى بالشفاء العاجل.

الأمين العام
الدكتور عدنان الكيلاني

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الصفحة الثانية : الاتحاد ونشاطاته

1- دورة تدريبية خاصة: ((إعداد ملفات تسجيل المستحضرات الصيدلانية))
دورة تدريبية خاصة في ملفات تسجيل الأدوية اقامها الاتحاد العربي لمنتجي الأدوية
لأعضاء لجنة التسجيل في شركة نينوى لصناعة الأدوية-العراق-الموصل لمدة اسبوعين
للفترة 16-29 كانون الاول 2008 في عمان وتضمن منهاج الدورة بشكل رئيسي :
متطلبات عامة لتسجيل المستحضرات الصيدلانية في العراق
متطلبات عامة لتسجيل المستحضرات الصيدلانية في الأردن
الملف الفني العربي الموحد لتسجيل المستحضرات الصيدلانية
الملف العالمي لتسجيل المستحضرات الصيدلانية CTD
المتطلبات العلمية الأساسية لملفات التسجيل مثل: دراسات الثبوتية والتوافر الحيوي... الخ
لقاء وتدريب في منظمة الغذاء والدواء الأردنية
زيارة عمل إلى قسم التسجيل في الشركة الأردنية لانتاج الادوية (JPM)
ورشة عمل إعداد عدد من ملفات التسجيل لاشكال صيدلانية مختلفة : الاشرية .الحبوب
الكبسول والامبولات .. الخ (المحاضر والمسؤول عن الدورة د.باسل الشاكر)

2- دورة تدريبية في صنعاء

عقد الاتحاد في صنعاء بتاريخ 13-14/8/2008 دورة تدريبية حول دراسات ثبات
المستحضرات الصيدلانية حاضر فيها الدكتور عامر الملخ من الأردن والدكتور ماجد المسوتي
من سوريا .وقد شارك فيها عدد كبير من العاملين في الصناعات الدوائية اليمنية ووزارة الصحة
اليمنية وكليات الصيدلة .

3- إجتماع الاتحادات العربية النوعية المتخصصة

شارك وفد من الاتحاد ضم الدكتور نادر شغليل عضو مجلس الإدارة والدكتور عدنان الكيلاني
في إجتماع الاتحادات العربية المتخصصة الذي عقد في بيروت بتاريخ 2008/10/19.

4- مؤتمر أصدقاء لبنان

شارك وفد من الاتحاد ضم الدكتور نادر شغليل عضو مجلس الإدارة والدكتور عدنان الكيلاني
في اجتماعات مؤتمر أصدقاء لبنان الذي عقد في بيروت بتاريخ 20-21/10/2008.

5- زيارة الخرطوم

قام الأمين العام الدكتور عدنان الكيلاني بزيارة إلى الخرطوم خلال الفترة 2008/8/6-3
وقد اجتمع مع الزملاء القائمين على الصناعات الدوائية في السودان .

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عدد 12 لسنة 2008

الصفحة الثالثة : مصانع الأدوية

الشركة الاردنية لانتاج الادوية (الاردن-عمان) JPM الشركة العامة لصناعة الأدوية والمستلزمات الطبية في نينوى (الموصل-العراق) NDI

ضمن التعاون بين شركات ومصانع انتاج الادوية العربية استضافت الشركة الاردنية لانتاج الادوية يوم الاثنين 22 12 2008 وفدا من الشركة العامة لصناعة الأدوية والمستلزمات الطبية في نينوى (الموصل-العراق) تناول اللقاء اهمية التسجيل الموحد للمستحضرات الصيدلانية وفق الملف الفني العربي الموحد والملف العالمي CTD وشرحا وافيا حول متطلبات التسجيل للمستحضرات الصيدلانية وشركات انتاج الادوية في الاردن والدول الاخرى بالاضافة الى الدراسات المطلوب اعدادها ضمن ملفات التسجيل .

الشهادة العربية في التصنيع الدوائي الجيد

بناء على تقارير لجان التفتيش تقرر منح الشهادة العربية في التصنيع الدوائي الجيد الى كل من :

1- شركة الفارس للصناعات لدوائية دمشق – الجمهورية العربية السورية

2- شرك ديف للصناعات الدوائية القصيم – المملكة العربية السعودية

وسوف يتم تسليمهم الشهادات في مؤتمر الاتحاد القادم.

نموذج الشهادة (الملحق رقم 7) Attachment no. 7



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الصفحة الرابعة: السلطات الصحية

1- مؤسسة الغذاء والدواء في الأردن استقبلت وفدا من الشركة العامة لصناعة الأدوية والمستلزمات الطبية في نينوى (الموصل-العراق) ليومي الخميس 18 والأحد 21 12 2008 تناول اللقاء التدريبي شرحا حول متطلبات تسجيل شركة دوائية وشرح متطلبات تسجيل مستحضر دوائي له مثيل بالإضافة إلى متطلبات دراسات الثبوتية ودراسات التكافؤ الحيوي وأسس التسجيل في الأردن .

2- الاجتماع التنسيقي بهدف الاتفاق على ملف فني موحد للتسجيل الدوائي
بناء على دعوة من الاتحاد عقد في دمشق يوم السبت 2008/8/23 اجتماع تنسيقي بحضور المسؤولين عن التسجيل الدوائي في كل من مصر وسوريا والأردن ودول الخليج العربية وتونس والعراق بهدف الاتفاق على ملف فني موحد للتسجيل الدوائي .
محضر الاجتماع : الملحق رقم 8 – Attachment no. 8

3- تسجيل الأدوية في الأردن

Drug Registration in Jordan

الملحق الثالث مع النشرة (13صفحة)

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الملحق **الرابع** مع هذه النشرة . attachment no 4 (5صفحة)
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الصفحة السادسة : إعلانات



الصناعة الدوائية ركيزة أساسية في الاقتصاد الوطني

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ملحق النشرة الأول

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صناعة الدواء في المملكة العربية السعودية

د. سالم بن احمد بابحير
نائب الرئيس لتطوير الأعمال والتشريعات الدوائية
الشركة السعودية للصناعات الدوائية والمستلزمات الطبية
رئيس لجنة أعضاء مصانع الأدوية المحلية 2007 م

يتناول هذا التقرير عدة محاور:

- 1- صناعة الدواء عالميا
- 2- نبذة عن الصناعة المحلية
- 3- سوق الادوية السعودي
- 4- التحديات التي تواجه الصناعة الدوائية السعودية
- 5- النتائج والتوصيات

سيتم التركيز على الصناعة الدوائية المحلية

اولاً-المساهمة الدولية من إجمالي الطلب المحلي السعودي من الادوية

الدولة	نسبة المساهمة
السعودية	10-15 %
الدول العربية-مصر والامارات والاردن	12 %
اوربا الغربية	65-70 %
الولايات المتحدة الامريكية	8-9 %



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ثانياً—المصانع الدوائية الوطنية

- الشركة السعودية للصناعات الدوائية والمستلزمات الطبية
- شركة تبوك للصناعات الدوائية تافاك
- شركة جلاكسو العربية السعودية المحدودة
- شركة مصنع المحاليل الطبية
- شركة مصنع جمجوم للأدوية المحدودة
- مصنع الحياة للمستحضرات الطبية
- شركة الجزيرة للصناعات الدوائية
- شركة الرياض فارما
- الشركة العربية السعودية اليابانية للمنتجات الدوائية ساجا
- الشركة العربية للمستحضرات الدوائية والحيوية
- شركة ديف للصناعات الدوائية

ثالثاً—الاستثمار في المصانع السعودية المنتجة للأدوية البشرية نهاية ديسمبر 2006 م

المنطقة	عدد المصانع
الرياض	9
جدة	4
الدمام	2
بريدة	1
تبوك	1

الاستثمار	عدد المصانع	مجموع الاستثمار
سعودي بنسبة 100 %	12	
اردني بنسبة 100 %	1	
سعودي-اردني	2	
سعودي 70 %-عربي 30 %	1	
سعودي- اجنبي	1	
المجموع		3.5 مليار ريال سعودي



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رابعاً—منتجات مصانع الادوية السعودية

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2	ادوية الحساسية
3	ادوية علاج البكتريا- المضادات الحيوية
4	ادوية علاج الكحة-السعال
5	فيتامينات مختلفة
6	ادوية علاج القرحة
7	خافضات الحرارة والمسكنات والروماتيزم
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9	ادوية الاسهال وعلاج الفطريات
10	كواشف مخبرية لتحليل الدم والبول
11	مواد حشوات الاسنان
12	ادوية ارتفاع ضغط الدم-ادوية السكر-ادوية فقر الدم
13	ادوية المطهرات الطبية

خامساً—تطور صادرات السعودية من المنتجات الدوائية 2001-2005 م

السنة	القيمة-مليون ريال	معدل الزيادة-مليون ريال	نسبة النمو
2001	79	-	-
2002	79.4	0.4	0.5%
2003	109	39.6	37%
2004	131	22	20%
2005	392	262	199%



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ملحق النشرة الثاني

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General standard for tablets, pills and capsules

TGA Therapeutic

**Goods
Administration
COMMONWEALTH
DEPARTMENT OF
HEALTH AND FAMILY SERVICES**

Therapeutic Goods Order No. 56

Therapeutic Goods Act 1989

Therapeutic Goods Order No. 56

**General standard for
tablets, pills and capsules**

© Commonwealth of Australia 1996

ISBN 0 644 47412 2

First printed September 1996

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Publications and Design (Public Affairs, Parliamentary and Access)

PA2378 (A70335)

Commonwealth Department of Health and Family Services

Produced by the Australian Government Publishing Service

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Test for uniformity of content

Test for disintegration

Test for dissolution

Packaging requirements

First schedule

Second schedule

Supplementary notes to the general standard for tablets, pills and capsules

Therapeutic Goods Act 1989
Therapeutic Goods Order No. 56

General standard for tablets, pills and capsules

I, JOHN CABLE, delegate of the Minister for Health and Family Services for the purposes of the exercise of the Minister's powers under section 10 of the *Therapeutic Goods Act 1989*, and acting under that section, having consulted with the Therapeutic Goods Committee in accordance with subsection 10(4) of the said Act, by this Order:

- (a) DETERMINE that:
- (i) tablets, pills and capsules to which this Order applies and that are the subject of an application lodged under section 23 of the Act on or after 1 January 1997 must comply with the requirements specified in this Order instead of Therapeutic Goods Order No. 35 (General Standard for Tablets and Pills) or Therapeutic Goods Order No. 36 (General Standard for Capsules);
 - (ii) during the period from 1 January 1997 to 31 December 1998 (both dates inclusive), tablets, pills and capsules (other than tablets, pills and capsules that are the subject of an application under section 23 of the Act on or after 1 January 1997) to which this Order and Therapeutic Goods Order No. 35 (General Standard for Tablets and Pills) or Therapeutic Goods Order No. 36 (General Standard for Capsules), both of which were made on 12 July 1990 and published in the Gazette No. GN 36 dated 12 September 1990, apply, must comply either with the requirements of this Order or with the requirements of Therapeutic Goods Order No. 35 or Therapeutic Goods Order No. 36, as appropriate; and
 - (iii) tablets, pills and capsules to which this Order applies and which are manufactured on or after 1 January 1999 must comply with the requirements of this Order; and
- (b) REVOKE Therapeutic Goods Order No. 35 and Therapeutic Goods Order No. 36 with effect from 1 January 1999.

Application

1. This Order applies to all therapeutic goods, other than radiopharmaceuticals, which are in the form of tablets, pills or capsules intended for oral administration and are for human use.

Interpretation

2. In this Order -

unless otherwise expressly indicated, the word “tablet” is to be read as including a reference to a “pill”.

“active ingredient” means a therapeutically active substance included in a tablet or capsule;

“British Pharmacopoeia” has the same meaning as in subsection 3(1) of the *Therapeutic Goods Act 1989*;

“capsules” means solid preparations with hard or soft shells, of various shapes and capacities, usually containing a single dose of active ingredient and intended for oral administration;

“capsules which are not intended to be swallowed whole” means capsules, the labelling of which includes a direction to ingest the contents of the capsules by a means other than swallowing the capsules whole;

“coated tablets” means tablets, where the coating materials constitute greater than ten (10) per cent of the mass of the tablets and consist of one or more layers of mixtures of various substances such as natural or synthetic resins, polymers, gums, inactive and insoluble fillers, sugars, plasticisers, polyols, waxes, colouring agents and sometimes flavouring substances and active ingredients;

“chewable”, in relation to tablets or capsules, means tablets or capsules which have been formulated to be chewed rather than swallowed whole and for which the label includes a direction to chew the tablet or capsule;

“colouring agent” means a substance included in a tablet or capsule for the sole purpose of imparting colour;

“dispersible tablets” means uncoated tablets that produce a uniform dispersion in water;

“enteric capsules” means hard or soft shelled capsules prepared in such a manner that the capsule shell and/or the contents of the capsule resist the action of the gastric fluid but are attacked by the intestinal fluid to release the contents of the capsule or the active ingredients from the contents of the capsules;

“enteric coated tablets” means tablets where the coating materials consist of one or more layers of coating intended to resist the gastric fluid but permit disintegration in the intestinal fluid;

“film-coated tablets” means tablets with a thin coating that constitutes less than or equal to ten (10) per cent of the mass of the tablets;

“for use in the mouth”, in relation to tablets or capsules, means tablets or capsules that are formulated to produce a slow release or local action of the active ingredient under the tongue or in other parts of the mouth;

“general requirements for precision”, in relation to the microbiological assay of antibiotics, means that the precision of the assay is such that the fiducial limits of error ($P=0.95$) are not less than 95 per cent and not more than 105 per cent of the estimated potency;

“modified release”, in relation to tablets, means tablets, with or without a coating, that:

- (a) contain special auxiliary substances; or
- (b) are prepared by special procedures;

that are designed to modify the rate or place at which the active ingredient is released;

“modified release”, in relation to capsules, means capsules that:

- (a) may contain special auxiliary substances within the capsule shell or within the contents of the capsule; or
- (b) are prepared by special procedures;

that are designed to modify the rate or place at which the active ingredient is released;

“pill” means a spherical or ovoid preparation with or without a coating which is intended for ingestion and is formed from a pliable mass of such consistency that it retains its shape on storage;

“Poisons Standard” has the same meaning as in regulation 2 of the Therapeutic Goods Regulations;

“soluble tablets” means uncoated tablets that dissolve in water. The solution may be slightly opalescent due to added substances used in the manufacture of the tablets;

“stated content”, in relation to tablets or capsules, means the quantity of the active ingredient that is stated on the label to be present in the tablets or capsules;

“tablets” means solid preparations intended for oral administration each containing a single dose of one or more active ingredients and obtained by compressing uniform volumes of particles;

“uncoated”, in relation to tablets, means tablets including single layer dosage forms resulting from a single compression of particles and multi-layer dosage forms consisting of concentric or parallel layers obtained by successive compression of particles of different composition, where the substances used are not specifically intended to modify the release of the active ingredient in the digestive fluids; and

“United States Pharmacopoeia” means the current edition of the book of that name, published by authority of the United States Pharmacopoeial Convention Incorporated, or, if that edition has been added to or amended by one or more Supplements, that edition as affected by such Supplements published as at the date of commencement of this Order.

Colouring agents

3. If tablets or capsules contain a colouring agent, it shall be a colouring included in the list of Colorings for Use in Pharmaceuticals for Ingestion recommended and adopted by the National Health and Medical Research Council in November 1986.

Content of active ingredient

4. (1) Where therapeutic goods in the form of tablets or capsules are the subject of a specific monograph of the British Pharmacopoeia, the tablets, or capsules shall be deemed to comply with the standard for content of active ingredient, if the estimated content of active ingredient in each tablet or capsule is within the limits specified in the monograph.
- (2) Where therapeutic goods in the form of tablets or capsules are not the subject of a specific monograph of the British Pharmacopoeia, the tablets or capsules shall be deemed to comply with the standard for content of active ingredient, when determined in accordance with the test for content of active ingredient in each tablet or capsule specified in clause 10, where -
 - (a) the estimated content of active ingredient in each tablet or capsule is not less than 92.5 per cent and not more than 107.5 per cent of the stated content; or
 - (b) if the active ingredient is an antibiotic and a microbiological method of assay is used in the test, the upper fiducial limit of error of the estimated content of active ingredient in each tablet or capsule

($P=0.95$) is not less than 97.0 per cent of the stated content and the lower fiducial limit of error of the estimated content of active ingredient in each tablet or capsule ($P=0.95$) is not more than 115.0 per cent of the stated content; or

- (c) if the active ingredient is an antibiotic and a microbiological assay is not used, the estimated content of active ingredient in each tablet or capsule is not less than 92.5 per cent and not more than 110.0 per cent of the stated content; or
- (d) if the active ingredient is included in the First Schedule to this Order and the tablets or capsules contain one or more other active ingredient in the First Schedule, the estimated content of each active ingredient in the tablets or capsules is not less than the percentage of the stated content specified in the second column of the First Schedule and not more than the percentage specified in the third column of the First Schedule in relation to that active ingredient.

- (3) Where the tablets or capsules contain homoeopathic preparation or herbal ingredients, the standard for content of active ingredient does not apply to these preparations or ingredients.

Uniformity or weight

- 5. All tablets and capsules shall be deemed to comply with the standard for uniformity of weight, if they comply with the requirements for uniformity of weight specified in the general monograph for Tablets or in the general monograph for Capsules, respectively, of the British Pharmacopoeia.

Uniformity of content

- 6. Except in the circumstances described in paragraphs (a) to (c) inclusive in this clause, tablets and capsules shall be deemed to comply with the standard for uniformity of content, if they comply with the requirements for uniformity of content specified in the general monograph for Tablets or in the general monograph for Capsules, respectively, of the British Pharmacopoeia.

Where:

- (a) the active ingredient is present in a homoeopathic dose; or
- (b) the active ingredient is a herbal substance not included in a Schedule of the Poisons Standard; or
- (c) the active ingredient is included in a multivitamin tablet or capsule or in a multivitamin and mineral tablet or capsule;

then the standard for uniformity of content does not apply.

Disintegration

7. Tablets and capsules shall be deemed to comply with the standard for disintegration if, subject to paragraphs (a) to (e) inclusive in this clause, they comply with the relevant requirements for maximum disintegration time specified in the general monograph for Tablets or in the general monograph for Capsules, respectively, of the British Pharmacopoeia.

Where:

- (a) the tablets or capsules are the subject of a specific monograph of the British Pharmacopoeia, which specifies a different maximum disintegration time then that requirement shall apply; or
- (b) the tablets or capsules are the subject of a specific monograph of the British Pharmacopoeia, which specifies that the requirement for Disintegration does not apply to these tablets or capsules, then no requirement for disintegration shall apply; or
- (c) tablets contain one or more herbal active ingredients or contain one or more herbal active ingredients and one or more active ingredients which are nutritional supplements, then the maximum disintegration time for the tablets, using the Disintegration Test for Tablets and Capsules of the British Pharmacopoeia, shall be:
 - (i) for uncoated tablets - 30 minutes
 - (ii) for film-coated tablets - 30 minutes;
 - (iii) for coated tablets - 60 minutes;
- (d) the tablets are soluble tablets that are not the subject of a specific monograph of the British Pharmacopoeia or are dispersible tablets that are not the subject of a specific monograph of the British Pharmacopoeia, then the maximum disintegration time shall be three minutes when tested by the Disintegration Test for Tablets and Capsules of the British Pharmacopoeia, using water at 19°C to 21°C without discs in the baskets; or
- (e) the tablets or capsules are required to comply with the standard for dissolution or they are chewable, or for use in the mouth or are for modified release, then the test for disintegration can be omitted.

Uniformity of dispersion

8. Where tablets are dispersible tablets that are not the subject of a specific monograph of the British Pharmacopoeia, the tablets shall be deemed to comply with the standard for uniformity of dispersion, if, when two tablets are placed in 100 mL of water and stirred completely dispersed, a smooth dispersion is

produced, which passes through a sieve with a normal mesh aperture of 710 micrometres.

Dissolution

9. When tested as specified in clause 14 of this Order, tablets or capsules that contain an active ingredient included in the Second Schedule to this Order shall comply with the relevant dissolution requirements of the United States Pharmacopoeia, except where the active ingredient is included in tablets or capsules which are the subject of a dissolution requirement of the British Pharmacopoeia, in which case the tablets or capsules shall comply with the relevant dissolution requirement of the British Pharmacopoeia.

Test for content of active ingredient

10. (1) Unless the tablets or capsules are the subject of a specific monograph of the British Pharmacopoeia, or unless the active ingredient is an antibiotic with a prescribed microbiological method or assay, the test for content of active ingredient shall be carried out by -
- (a) for tablets, determining the weight, W, of 20 tablets, or, for capsules, pooling the contents of 20 capsules and determining the weight, W, of the pooled contents; and
 - (b) for tablets, pulverising the 20 tablets and thoroughly mixing the resulting powder, or, for capsules, mixing the pooled contents thoroughly; and
 - (c) determining the quantity, Q, of the active ingredient in a suitable portion of weight, w, of the mixed powder or pooled contents, using a method of assay acceptable to the Secretary; and
 - (d) calculating the determined quantity, E, of the active ingredient in each tablet or capsule, where -
$$E = QW/20w$$

and
 - (e) calculating the determined percentage, P, of the stated content, L, of the active ingredient in the tablets or capsules, where -
$$P = 100E/L$$
- (2) Where the active ingredient is an antibiotic with a prescribed microbiological method of assay and the tablet or capsule is not the subject of a specific monograph of the British Pharmacopoeia, the test for content of active ingredient shall be carried out in the sequence as specified in paragraphs (1)(a) and (1)(b) and then by -

- (a) determining the quantity, Q, of active ingredient in a suitable portion of the pulverised tablets or of the pooled contents of the capsules, of weigh, w, using the potency estimate from only those statistically valid assay results which also meet the general requirements for precision of antibiotic assays; and
- (b) repeating the calculation to obtain, respectively, the values Q_U and Q_L corresponding to the upper and lower fiducial limits of error of the estimated quantity, Q; and
- (c) using, in turn, the values Q, Q_U and Q_L , calculating the corresponding determined quantities, E, E_U and E_L , of the active ingredient per average tablet or capsule and then expressing the result as a percentage, P, P_U and P_L , of the stated content, L, as follows -

$$E = QW/20w$$

and

$$P = 100E/L$$

where E is expressed in micrograms per milligram or Units per milligram and L is expressed in milligrams or Units; and similarly

$$E_{U,L} = Q_{U,L} W/20w$$

and

$$P_{U,L} = 100E_{U,L}/L$$

and

- (d) determining whether the estimates, P_U and P_L , meet the requirements specified in paragraph 4(2)(b).

Test for uniformity of weight

- 11. The test for uniformity of weight for tablets and capsules shall be carried out as specified in the British Pharmacopoeia.

Test for uniformity of content

- 12. Where required, the test for uniformity of content for tablets and capsules shall be carried out as specified in the British Pharmacopoeia.

Test for disintegration

13. The test for disintegration for tablets and capsules shall be carried out as specified in the British Pharmacopoeia.

Test for dissolution

14. The test for dissolution for tablets and capsules shall be carried out -
- (a) where the tablets or capsules are the subject of a dissolution requirement in the British Pharmacopoeia, by using the apparatus and test method described in the British Pharmacopoeia; or
 - (b) in any other case, where the tablets or capsules contain an active ingredient included in the Second Schedule to this Order, by following the recommendations contained in “D5. Guidelines for Dissolution Testing” in Appendix D “Guidelines for Laboratory Instrumentation” (dated November 1991) of the “Australian Code of Good Manufacturing Practice for Therapeutic Goods - Medicinal Products”, published by the Therapeutic Goods Administration.

Packaging requirements

15. Tablets and capsules shall be packaged in a manner which affords protection of the tablets or capsules against breakage or crushing, access of moisture, contamination and deterioration due to air and light.

Dated this nineteenth day of September 1996

JOHN CABLE
Director
Conformity Assessment Branch
Therapeutic Goods Administration
(Delegate of the Minister for Health and Family Services)

FIRST SCHEDULE

Content limits for vitamins in multivitamin or multivitamin and mineral tablets and capsules

Vitamin	Not Less Than (per cent)	Not More Than (per cent)
Thiamine hydrochloride	85	150
Thiamine nitrate	85	150
Riboflavine	85	150
Riboflavine sodium phosphate	85	150
Nicotinamide	85	150
Nicotinamide ascorbate	85	150
Nicotinic acid	85	150
Pyridoxine hydrochloride	85	150
Ascorbic acid	85	150
Sodium ascorbate	85	150
Calcium ascorbate	85	150
Magnesium ascorbate	85	150
d-alpha-Tocopherol	85	150
dl-alpha-Tocopherol	85	150
d-alpha-Tocopheryl acetate	85	150
dl-alpha-Tocopheryl acetate	85	150
d-alpha-Tocopheryl acid succinate	85	150
dl-alpha-Tocopheryl acid succinate	85	150
Phytomenadione	85	150
Menadione	85	150
Acetomenaphthone	85	150
Cyanocobalamin	85	150
Biotin	85	150
Panthenol	85	150

Ergocalciferol 25 micrograms (1000 I.U.) or less per dosage unit	85	150
Ergocalciferol More than 25 micrograms (1000 I.U.) per dosage unit	85	115
Cholecalciferol 25 micrograms (1000 I.U.) or less per dosage unit	85	150
Cholecalciferol More than 25 micrograms (1000 I.U.) per dosage unit	85	115
Vitamine A (synthetic or derived from natural sources) 5000 I.U. or less per dosage unit	85	165
Vitamine A (synthetic or derived from natural sources) More than 5000 I.U. per dosage unit	85	115
Retinyl acetate 5000 I.U. or less per dosage unit	85	165
Retinyl acetate More than 5000 I.U. per dosage unit	85	115
Retinyl palmitate 5000 I.U. or less per dosage unit	85	165
Retinyl palmitate More than 5000 I.U. per dosage unit	85	115
Folic Acid 500 micrograms or less per dosage unit	85	125
Folic Acid More than 500 micrograms per dosage unit	85	115
Betacarotene	85	180
Pantothenic Acid	85	175
Sodium Pantothenate	85	175
Calcium Pantothenate	85	175

SECOND SCHEDULE

- Acetazolamide
- * Acetohexamide
- Allopurinol
- Aminophylline
- Aminosalicyclic Acid
- Amoxicillin Trihydrate
- Ampicillin
- Amylobarbitone
- Azathioprine
- Bendrofluazide
- Betamethasone
- Biperiden Hydrochloride
- Bromocriptine Mesylate
- Carbamazepine
- Carbarsone
- Carbidopa
- * Chloramphenicol
- Chlordiazepoxide
- Chlordiazepoxide Hydrochloride
- * Chloroquine Phosphate
- * Chloroquine Sulphate
- Chlorothiazide
- Chlorpromazine Hydrochloride
- * Chlorpropamide
- Chlorprothixene
- * Chlortetracycline Hydrochloride
- Chlorthalidone
- Chlorzoxazone
- Clomiphene Citrate
- Clonazepam
- Clonidine Hydrochloride
- Cortisone Acetate
- Cyclopentiazide
- Cyproheptadine Hydrochloride
- Danazol
- * Dapsone
- Dexamethasone
- Dextropropoxyphene Hydrochloride
- Dextropropoxyphene Napsylate
- Diazepam
- Dichlorphenamide
- Dicoumarol
- Diethylcarbamazine Citrate
- Diflunisal
- Digitoxin
- * Digoxin
- Dipyridamole

Dydrogesterone
* Ergotamine Tartrate
Erythromycin
Erythromycin Ethylsuccinate
Erythromycin Stearate
Ethacrynic Acid
Ethambutol Hydrochloride
Ethinamate
Ethopropazine Hydrochloride
Ethosuximide
Fenoprofen Calcium
Flucytosine
Fludrocortisone Acetate
Fluoxymesterone
Fluphenazine Hydrochloride
Frusemide
Glutethimide
Griseofulvin - Ultramicrosize
Guanethidine Monosulphate
Haloperidol
Hetacillin
Hetacillin Potassium
Hexobarbitone
Hydrochlorothiazide
Hydroxyzine Hydrochloride
Hydroxyzine Embonate
Ibuprofen
Imipramine Hydrochloride
Indomethacin
Isocarboxazid
* Isoniazid
Isosorbide Dinitrate
Isoxsuprine Hydrochloride
Levodopa
Levpropoxyphene Napsylate
Lithium Carbonate
Meclozine Hydrochloride
Medroxyprogesterone Acetate
Megestrol Acetate
* Metformin Hydrochloride
Methaqualone Hydrochloride
Metharbital
Methotrexate
Methsuximide
Methylclothiazide
* Methylprednisolone
Methyltestosterone
* Methysergide Maleate
Minoxidil

Nalidixic Acid
Naproxen
Nitrofurantoin
Norethisterone Acetate
Oxazepam
Oxycodon Hydrochloride
Oxyphenbutazone
* Oxytetracycline Hydrochloride
Pargyline Hydrochloride
Penicillamine
Perphenazine
Phenacemide
Phenindione
Phenobarbitone
* Phenoxymethylpenicillin Potassium
Phenprocoumon
Phensuximide
* Phenylbutazone
Phenytoin Sodium
Polythiazide
* Prednisolone
* Prednisone
Primidone
Probenecid
Procainamide Hydrochloride
Procarbazine Hydrochloride
Pyomethazine Hydrochloride
Prymethamine
* Quinidine Bisulphate
* Quinine Sulphate
Reserpine
Secbutobarbitone Sodium
Spironolactone
Stanozolol
Sulfamerazine
Sulindac
Sulphadiazine
Sulphamethoxazole
Sulphapyridine
Sulphasalazine
Sulphinpyrazone
Tamoxifen Citrate
* Tetracycline Hydrochloride
Theophylline
Thiabendazole
Thioguanine
Thiothixene
Timolol Maleate
Tolazamide

- * Tolbutamide
- Tranlycypromine Sulphate
- Triamcinolone
- Trichlormethiazide
- Triflupromazine Hydrochloride
- Trimeprazine Tartrate
- Trimethoprim
- Trioxysalen
- Trisulfapyrimidines
- * Warfarin Sodium
- * *Active ingredients marked with an asterisk are the subject of a dissolution requirement of the British Pharmacopoeia.*

Supplementary notes to the general standard for tablets, pills and capsules

1. This standard applies to all therapeutic goods that are tablets, pills or capsules intended for ingestion by humans, other than radiopharmaceuticals. Homoeopathic or herbal tablets, pills or capsules are only required to comply with the requirements for uniformity of weight and disintegration.
2. The main purpose of the standard is to provide a set of specifications with which the product must comply throughout its claimed shelf life. To ensure compliance with the standard, a prudent manufacturer will apply release specifications that are more exacting than those included in the standard.
3. The standard also specifies the testing procedures that will be used by an official testing laboratory to assess the quality of any sample from any batch of a product.
4. The requirement to carry out the tests and methodology as specified in this standard is only obligatory where a manufacturer may wish to contest the test results of the official testing laboratory. Manufacturers should be aware that products of acceptable quality can be produced by following in-house, in-process controls and ensuring compliance with the Code of Good Manufacturing Practice.
5. Under section 14 of the *Therapeutic Goods Act 1989*, therapeutic goods imported into Australia, supplied in Australia or exported from Australia are required to comply with a standard applicable to the goods. However, a mechanism exists under this section of the Act for the Secretary of the Department to give his/her consent to an exemption from a standard or a particular aspect of a standard, if the manufacturer can provide adequate justification for the exemption.
6. In the absence of an official pharmacopoeial method, assay methods acceptable to the Secretary of the Department are those which have been approved by the Department as being of adequate selectivity to assure product quality for the parameter being assessed.
7. Dissolution testing of tablets and capsules provides a means of monitoring possible changes in drug release rate between samples of the same batch and also between batches which may in turn give rise to varying bioavailability of the drug. Causes of changes in drug release rate can include variations in the formulation or in the manufacturing process.

The criteria adopted in deciding which active ingredients should be included in the Second Schedule to the Order were -

where there is a dissolution requirement in a specific monograph of the British Pharmacopoeia;

where the active ingredient has a solubility of less than 1 per cent in water at 25°C;

- where there is a documented low therapeutic index;
 - where there are documented or potential bioavailability problems; or
 - where the product is a modified release tablet or capsule (refer Supplementary Note No.9 below).
8. Some manufacturers may prefer to specify a dissolution requirement rather than a disintegration requirement for a product. This is permissible if the dissolution test has been authorised during the product registration process.
9. "Modified release" is an expression used to describe those tablets and capsules the labelling of which includes the words "prolonged release", "sustained release", "extended release", "delayed release", "time release" or any other words that indicate that the release of the active ingredient is intended to be delayed, intermittent or prolonged.

The reasons for including a dissolution requirement for modified release tablets or capsules are to assure batch to batch uniformity, dose to dose repeatability and absence of "dose dumping" over the extended time claimed on the label and to confirm that the product demonstrates modified release of the active ingredient from the tablet or capsule matrix.

Dissolution specifications for modified release tablets are not intended to be used to distinguish between products or to categorise expected performance.

New modified release formulations of existing drug products are regarded by the Department as new drugs requiring evidence of safety and efficacy.



تأسس عام 1987
AUPAM اوبام

الاتحاد العربي لمنتجيين الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

Established by a resolution of the Arab Economic Unity Council

تأسس بقرار من مجلس الوحدة الاقتصادية

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نشرة علمية إخبارية متنوعة توزع بواسطة البريد الالكتروني تصدر عن الأمانة العامة للاتحاد
الإشراف العلمي والفني : د. باسل الشاكر عضو مجلس الإدارة

AUPAM Online Bulletin

ملحق النشرة الثالث

عدد : (4) كانون-2-2009

Drug Registration in Jordan

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Drug Registration Department
Drug Directorate
Jordan Food and Drug Administration (JFDA)

Jordan Food & Drug Administration (JFDA)

JFDA has been created in 2003 as the sole national competent authority for drug safety, efficacy and pricing in addition to food safety and quality. Other important items regulated by JFDA include medical devices and clinical consumables. Moreover, Jordan is one of the signatory countries in the WTO and also signed the Jordan-USA FTA.

! There are many working committees in the drug directorate that involve all the sectors, their main responsibility is to take the right decision concerning different issues like:

- Registration of new/generic drugs, medical plants & herbs, sera & vaccines, Cosmetics, vitamins, and medical devices.
- Re-registration of registered drug products.
- Pricing & re-pricing of the drugs.
- Accreditation of pharmaceutical sites.
- Bioequivalence studies committee.
- Clinical studies.

Criteria of Registration

! It is prohibited to market the drug except after its registration, pricing and the issuance of a registration number for it.

Considerations to be taken before submission of a Drug Product registration application

1. The Drug Product should have been actually marketed in the country of origin for at least one year, if not, the reasons behind that should be demonstrated & a free sale certificate from any of the approved countries by the Drug Directorate should be submitted.

! **The Approved Countries at JFDA:**

The United States of America, Britain, Canada, Germany, France, Belgium, Switzerland, The Netherlands, Sweden, Austria, Japan, Australia, Finland, Spain

2. The data protection period of an originator drug product is 5 years calculated from the date of its registration. A generic drug product application can be submitted only during the last year of data protection.

üNote: JFDA is committed to give data protection for new chemical entity (NCE) according to Article 39.3 of TRIPS agreement since 2000 when Jordan became a WTO member.

üReference: Jordan Unfair competition & trade secrets law (2000).

3. A generic drug product application can not be submitted before taking the approval for its bioequivalence study or the bio-waiver request from the Bioequivalence studies Committee.

4. The manufacturing site should be approved by JFDA or applied for accreditation.

2- Requirements of the Drug Product Registration File

First Part: Organizational and Administrative Information

1-a Numbered Index of Contents.

1-b Other Information about:

✓Name of Drug Store.

✓Name of the responsible pharmacist.

✓Name and address of the Marketing Authorization Holder (MAH).

✓Name and address of the manufacturing site(s).

✓Registration application form issued and signed from the manufacturing company.

Second Part: Certificates, Information and Administrative documents about the product:

2-a Free Sale Certificate from the Country of Origin issued by the competent parties duly legalized & containing the following:

- The trade name of the drug in the Country of Origin (if trade name differs, a clarification from the official competent parties is requested).
- Number and date of registration or permission of marketing in the Country of Origin.
- Names of the active and inactive substance(s) and their concentrations.
- A statement that the product is actually being sold in the Country of origin with the same composition.
- Name and address of the MAH, names & addresses of manufacturing sites & their role in the manufacturing process.

2-b JFDA letter of accreditation of manufacturing site or its submission.

2-c A list prepared by the manufacturing company showing the registration status in different countries: permitted marketing, submitted, rejected (and reasons behind that).

2-d List of substances of human or animal origin entering in the composition of the product and its source and the related certificates thereto.

2-e Pricing certificates of the product.

2-f The insert leaflet approved in the Country of Origin in English, legalized by the competent parties.

üNote: In case of generic drug products, the leaflet should comply with the originator drug product leaflet, unless there is a new indication protection for the originator drug product, (Jordan-USA FTA, footnote 10), Jordan is committed to give 3 years protection for the new indication in the originator leaflet.

Third Part: The Technical File shall be Classified and Indexed containing the following, in addition to an electronic copy thereof:

- 3-a Formula and the major steps in the method of manufacturing.
 - 3-b Specifications and methods of analyzing the raw active substance.
 - 3-c Certificate of analysis of the raw active substance from the source of its import and from the company utilizing it.
 - 3-d Copy of certificate of suitability (COS) for the raw active ingredient OR a copy of GMP of active raw ingredient manufacturing site that is legalized from any official department (notary or chamber of commerce, or...)
 - 3-e Specifications and methods of analyzing the inactive substances.
 - 3-f Specifications of the finished product.
 - 3-g Certificate of analysis of the finished product.
 - 3-h Methods of analyzing the finished product.
 - 3-i Validation studies of the routine methods of analyzing the product
 - 3-j Validation studies of stability indicating methods & degradation products methods of analysis, with the related chromatograms if the method is HPLC.
(If the method is in-house method, then full validation studies are required. But if the method is pharmacopeal, then verification is required "reduced validation")
 - 3-k Specifications of the primary and secondary package.
 - 3-l: Stability studies for 3 batches that are at least 2 pilot scales & one lab scale, with related chromatograms.
 - Accelerated stability studies (6 months), and Real stability studies of the drug product (at least 12 months), with a conclusion showing shelf life, primary packaging type and storage conditions in accordance with the instructions issued for such purpose.
 - A commitment to provide an annual report containing the results of long-term stability studies whereby it covers the shelf life of the product.
 - 3-m A commitment to provide stability studies for production batches
- Note: It is not permitted that the Generic Product Shelf Life exceed that of the Originator.

3-n Batch Record for three consecutive production batches showing the production method and the tests that were conducted and its results for serums and vaccines products and biological products.

3-o Two specimens of the primary and secondary packages and the insert leaflet.

3-p Plasma Master File for products containing plasma products regardless of its percentage in the finished product.

Fourth Part: Clinical Studies

4.a New Drugs

- Bio-availability study according to the instructions issued for this purpose. Serums and vaccines products and biological products are excluded.
- Clinical Studies.
- Scientific Studies published in global scientific journals.
- Periodic Safety Update Report from the manufacturing company (PSUR).

4.b Generic Drugs

Need a prior approval from bioequivalence studies committee (Bioequivalence or clinical studies), PSUR requirement is under consideration by JFDA and circulars will follow.

Important note:

Different pharmaceutical forms, different concentrations.....need separate registration application file

I Needed Attachments:

- ØInsert leaflet copies.
- ØSamples of finished product.

I Drug Control Lab:

- ØCopy of technical file.
- ØSamples of finished product for analysis purposes.
- ØAn adequate quantity for analysis of raw active substance(s) of reference & degradation products.

Third part: Registration File Evaluation

- The committee is concerned with the potency, safety, and quality of the drug product.
- The Committee decides on any application for registration within a maximum period of 180 days from date of submission of completed documents application.
- If the originator drug product is still data protected, the Committee decides on any generic application of completed documents within maximum period of (180) days before the expiry of the protection, provided that the resolution for registration is issued on the next day of the expiry of protection.
- Objection is allowed within 30 days of decision notification, and the objection is reviewed by committee within 30 days of its submission, after that the decision is final.
- The Administration shall inform the concerned parties of the registered drugs such as the Association of Pharmacists, Doctors and others about every drug that has been registered.

Prohibiting imports, discontinuing distribution, discontinuing sale, prohibiting marketing, suspending or revoking the registration or recalling the drug product

- With due observance to achieve the drug safety, the Director General, through a recommendation from the Committee, has the right to take any or all of the above measures in any of the following cases:
 - If drug's toxicity or inferior quality becomes evident to the Committee or if it lacks potency or its potency is less than required based on a report from WHO, the manufacturing company or from any other party approved by the Committee.
 - If it becomes evident that it is not permissible to market or its marketing is discontinued after it has been marketed in the country which was relied on for registration to obtain a Free Sale Certificate.
 - If it becomes evident that its price to the public in the Country of Origin has been reduced without reflecting such reduction on the selling price to the Jordanian Public and the Committee was not advised of this within four months from the date of the reduction.
 - If the registration was done on the basis of false information.

- If the applicant does not register the drug as new upon conducting any alternation on the active pharmaceutical ingredient (API) or the pharmaceutical form.
- If the applicant does not obtain the approval upon carrying out any post approval change.
- The concerned party shall notify the applicant of the Director General's decision referred to above together with the period granted to him, through the recommendation of the Committee, to rectify the situation.
- Objection is allowed within 30 days of notification and reviewed within 30 days of submission.

Registration of drugs that are Manufactured Contractually

1. Determination of the major steps for the manufacturing process and the site where each step is done (each manufacturing site should be accredited by JFDA , the Marketing Authorization holder has to be a manufacturing site or an office owned by a manufacturing site that is accredited by JFDA).
2. A copy of the technical contract signed from the Principal and the Contractor.
3. A letter from the Principal advising his responsibility for drug.
4. A commitment to advise the Administration about any change in the information mentioned in items 1 and 2 before initiating the change.

Registration of Drugs manufactured under licence.

FIRST

- If the licensor is not registered in Jordan, the technical file should contain a part designated to information about such company by completing a form related thereto.
- A letter from the manufacturer granting the license to the concerned company.
- An official letter from the licensor's agent advising that the product intended to be manufactured under license shall not be imported under the same Trade Name.

SECOND

ı The bio-availability and bio-equivalence studies are accepted from Licensor as long as the product has been manufactured with the same composition and by similar machinery with compliance with the instructions issued for such, provided that the documents confirming this are attached. Serums and vaccines products and biological products are excluded.

ALTERATIONS ON THE REGISTERED DRUG (PAC)

•Upon conducting any alteration on the API or the pharmaceutical form, a new registration application is needed.

•The following PAC must obtain the committee approval before implementation (process takes 90 days, transitional period is allowed):

- Country of Origin.
- Site of manufacturing.
- The major steps of the manufacturing method.
- The inactive substances in the drug's composition.
- Primary packing materials.
- Shelf life.
- The Information mentioned in the insert leaflet.
- The information mentioned on the internal and external container which is connected with the insert leaflet.
- The drug product's specifications and its analysis methods.
- The Drug product's trade name.
- The name and/or address of the manufacturing company.
- Any amendment of the numbering system or the amendment of information in the production files and the quality control of the products of serums, vaccines and the biological products.
- Other PAC than mentioned above, should obtain the approval of the directorate (30 days from submission of completed documents).

RENEWAL OF REGISTRATON

- A renewal request should be filed every 5 years.
- Director General issues a decision whether to renew the registration or not, based on a decision from the re-registration committee demonstrating the reasons behind such decision.
- Objection is allowed within 30 days from notification of the decision. The objection is reviewed within 30 days of submission. After that, the decision is final.

Requirements of registration renewal:

FIRST: Certificates, Information and Administrative Documents about the product.

- 1-a) Comparison table between registration and re-registration files ([F11/RDS/9/2006](#)).
- 1-b) Form number ([F10/RDS/9/2006](#)): re-registration and pricing committee decision forms.
- 1-c) Worldwide registration status of the drug finished product.
- 1-d) List of ingredients of the finished product that are of human or animal origin, and all certificates related.
- 1-e) Pricing certificates of the product in accordance with the determined pricing Criteria.
- 1-f) Free Sale Certificate from the Country of Origin / approved countries list duly legalized
- 1-g) All alteration requests approved by the Directorate or the competent Committee from the registration date or from the date of the last renewal of registration in chronological order.
- 1-h) Submission of any amendments in technical contract (contract manufacturing)

SECOND: Technical File:

- 2-a) Composition of drug product (numbered, dated and signed), declaration of any change.
- 2-b) Manufacturing process (declaration of any change).
- 2-c) Specifications of the raw active ingredients.
- 2-d) Certificates of analysis of raw active ingredients from manufacturer and suppliers.
- 2-e) Packaging specifications including: outer packs, primary package, insert leaflet.
- 2-f) specifications of excipients

2-g) Release and Shelf-life Specifications of the finished drug product (numbered, dated and signed).

2-h) Certificate of Analysis of the finished product.

2-i) Tests on finished product including: method of analysis of the active ingredients and related substances.

2-j) Validation of analytical methods used for testing the finished product, especially validation of analytical methods used to test active ingredients and related substances and its chromatograms.

2-k) Stability:

- Full real stability study covering the shelf-life and its related chromatograms.
- Ongoing stability study for a new batch and its related chromatograms.
- Stability conclusion.

2-l) If the product contains plasma products, a Plasma Master File must be submitted or an admission from manufacturing company that no change in the approved plasma source

2-m) Complete the specimen form relating to serums, vaccines and biological products approved by the Principal or the contactor with the seal and signature of the responsible person on each page

I THIRD: CLINICAL STUDIES

Most recent PSUR (information about the drug's side effects from the date of its registration or its renewal and based thereon, any suggested alteration on the approved drug's insert leaflet).

I FOURTH:

□A separate update copy of the technical file shall be submitted to the Drug Control Laboratory in an electronic manner.

I JFDA website www.jfda.jo contains the following clear information, available in the public domain:

- Pricing and registration criteria and policies.
- List of the registered medicines and their prices as determined by JFDA.
- List of drugs submitted for registration.
- Jordan Rational Drug List.
- Jordan National Drug Formulary.
- The Bar Code Project (Drug Information & Prices).
- Latest JFDA safety drug information received by Jordan pharmacovigilance center in the JFDA.

Contact Information

E-mail: hala.abushamat@jfda.jo



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ملحق النشرة الرابع

عدد : (4) كانون-2 2009

Dosage Forms described by USP 27 & NF 22 (Electronic version)

Letter D monographs

Arranged by: Dr. BASIL ALSHAKIR

No.	NAME OF MATERIALS	SOLID CAPSULE TABLETS (EXTENDED Or DELAYED RELEASE)	INJECTABLE SOLUTION POWDER SUSPENSION I.V.	TOPICAL CREAM OINT. GEL EYE	ORAL SOLUTION SYRUP SUSPENSION ELXIR	OTHERS SUPPOSITORY POWDER EFFERVESCENT OTHER
1.	DECABARZINE	--	538 POW	--	--	--
2.	DACTINOMYCIN	--	540 POW	--	--	--
3.	DANAZOL	541 C	--	--	--	--
4.	DAPSONE	542 T	--	--	--	--
5.	DAUNORUBICIN HCL	--	543 POW	--	--	--
6.	DEFEROXAMINE MESYLATE	--	545 POW	--	--	--
7.	DEHYDROCHOLIC ACID	546 T	--	--	--	--
8.	DEMECARIUM BROMIDE	--	--	--	--	546 OT
9.	DEMECLOCYCLINE	--	--	--	547 SU	--
		548 C	--	--	--	--
10.	DEMECLOCYCLINE HCL	549 T	--	--	--	--
11.	DESIPRAMINE HCL	551 T	--	--	--	--
12.	DESLANOSIDE	--	552	--	--	--
		--	--	553 C	--	--
		--	--	554 OI	--	--
		--	--	554 G	--	--
13.	DESOXIMETASONE	--	--	--	--	--
	DESOXYCORTICOSTERONE	--	--	--	--	--
14.	ACETATE	--	555	--	--	555 OT
	DESOXYCORTICOSTERONE	--	--	--	--	--
15.	PIVALATE	--	556 SUS	--	--	--
16.	DEXAMETHASONE	560 T	559	558 G	558 XIR 560 SO	557 OT 559 OT
17.	& NEOMYCIN	--	--	1302 OIE	--	1303 OT

	TYPE1				
	& MULTIPLE ELECTROLYTES				
46.	TYPE2		691		
	& MULTIPLE ELECTROLYTES				
47.	TYPE3		693		
	& MULTIPLE ELECTROLYTES				
48.	TYPE4		693		
49.	& LACTATED RINGER,S		1658		
50.	& SODIUM CHLORIDE	1702 T	582		
51.	DIATRIZOATE MULGOMINE		583		
52.	& DIATRIZOATE SODIUM		584		
53.	DIATRIZOATE SODIUM		586		586 OT
		588 C			
		588 C ER			
54.	DIAZEPAM	589 T	589		
55.	DIAZOXIDE	590 C	591		591 SU
				592 C	
56.	DIBUCAINE			592 OI	
57.	DIBUCAINE HCL		593		
	DICHLORALPHENASONE				
	ISOMETHEPTENE MUCATE				
58.	ACETAMINOPHEN	1033 C			
59.	DICHLORPHENAMIDE	595 T			
60.	DICLOFENAC SODIUM	596 T DR			
61.	DICLOXACILLIN SODIUM	597 C			598 SU
		598 C			POW
62.	DICYCLOMINE HCL	600 T	599		599 SO
					600 SY
63.	DIENESTROL			601 C	
	DIETHYLCARBAMAZINE				
64.	CITRATE	602 T			
65.	DIETHYLPROPION HCL	604 T			
66.	DIETHYLSTILBESTEROL	605 T	605		
	DIETHYLSTILBESTEROL				
67.	DIPHOSPHATE		606		
68.	DIETHYLTOLUAMIDE				507 OT
				608 C	
69.	DIFLORASONE DIACETATE			608 OI	
70.	DIFLUNISAL	609 T			
		611 C			
71.	DIGITALIS	612 T			611 POW
72.	DIGITOXINE	613 T	612		
					616 SO
73.	DIGOXIN	616 T	615		615 XIR
	DIHYDROCODEINE				
	BITARTRATE				
	ASPIRIN				
74.	CAFFEINE	179 C			
	DIHYDROCRGATAMINE				
75.	MESYLATE		618		
76.	DIHYDROSTREPTOMYCIN		619		
	DIHYDROSTREPTOMYCIN				
77.	SULFATE				619 OT
78.	&PENICILLIN G PROCAINE		1425 SUS		

	CHLORPHENIRAMINE MALEATE DEXAMETHASONE		1425 SUS 1425 IV		
79.	&PENICILLIN G PROCAINE &PENICILLIN G PROCAIN				
80.	PREDNISOLONE		1427 SUS		
81.	DIHYDROTACHYSTEROL DIHYDROXYALUMINUM	620 C 621 T			621 SO
82.	SODIUM CARBONATE	624 T			
83.	DILTIAZEM HCL	625 C ER 628 T			
84.	DIMENHYDRINATE	630 T	629		629 SO 630 SY
85.	DIMERCAPROL		632		
86.	DIMETHYL SULFOXIDE DIOXYBENZONE			633 G	633 OT 633 OT
87.	OXYBENZONE DIPHENHYDRAMINE CITRATE			636 C	
88.	ACETAMINOPHEN	37			
89.	DIPHENHYDRAMINE HCL & ACETAMINOPHEN	638 C	638		638 XIR 639 SO
90.	PSEUDOEPHEDRINE HCL	38 T			
91.	& PSEUDOEPHEDRINE DIPHENOXYLATE HCL	639 C			
92.	ATROPIN SULFATE	641 T			641 SO
93.	DIPIVEFRIN HCL				643 OT
94.	DIPYRIDAMOLE	645 T	644		
95.	DIRITHROMYCIN	646 T DR 648 C			
96.	DISOPYRAMIDE PHOSPHATE	648 CDR			
97.	DISULFIRAM	649 T			
98.	DIVALPROEX SODIUM	650 T DR			
99.	DOBUTAMINE DOBUTAMINE		651 652 POW		
100.	DEXTROSE		652		
101.	DOCUSATE CALCIUM	654 C			
102.	DOCUSATE POTASSIUM	655 C 656 C			
103.	DOCUSATE SODIUM DOCUSATE SODIUM	657 T			657 SY 657 OT
104.	FERROUS FUMARSTE	788 T ER			
105.	DOLASETRON MESYLATE	659 T	659		
106.	DOPAMINE HCL DOPAMINE HCL		660		
107.	DEXTROSE		661		
108.	DOXAPRAM HCL		663		
109.	DOXEPIN HCL	664			665 SO
110.	DOXORUBICIN HCL		666 667 POW		
111.	DOXYCYCLINE	668 C	671 POW		668 SU POW

112 DOXYCYCLINE CALCIUM				669 SU POW
	670 C			
	670 C DR			
113 DOXYCYCLINE HYCLATE	671 T			
114 DOXYLAMINE SUCCINATE	673 T			672 SO 673 SY
DOXYLAMINE SUCCINATE				
ACETAMINOPHEN				
DEXTROMETHORPHAN HBr				
115 PSEUDOEPHEDRINE HCL				36 SO
116 DRONABINOL	674 C			
117 DROPERIDOL		675		
118 DYCLONINE HCL			677 G	677 OT
119 DYDROGESTERONE	678 T			
120 DYPHYLLINE	680 T	680		679 XIR 680 SO
DYPHYLLINE				681 XIR
121 GUAIFENECINE	682 T			681 SO

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ملحق النشرة الخامس

عدد : (4) كانون-2 2009

Epigenomics drugs: Azacitidine and decitabine

Dr. Mohammed Al-Obaide
Royal Scientific Society / Amman / Jordan

Introduction

The success of the human genome sequencing project has created wide-spread interest in exploring the human epigenome in order to elucidate how the genome executes the information it holds. Although all human's nucleated cells effectively contain the same genome, they contain very different epigenomes depending upon cell type, developmental stage, sex, age and various other parameters. This complexity makes it intrinsically difficult to precisely define the epigenome (figure 1). However epigenomics, is at the epicenter of modern pharmaceutical biotechnology because it can help to explain the relationship between an individual's genetic background, the environment, aging, and disease. It can do so because the epigenetic state varies among tissues and during a lifetime, whereas the DNA sequence remains essentially the same. As cells adapt to a changing internal and external environment, epigenetic mechanisms can remember these changes in the normal programming and reprogramming of gene activity. The common disease genetic and epigenetic model provides an epidemiologic framework that can incorporate epigenomic with genetic variation in the context of age-related susceptibility to disease and epigenomic drug therapy. It is worth to mention that the epigenomic program can modify the effects of deleterious genes or may be influenced by an adverse environment. Thus, including epigenomics into epidemiologic studies of human disease and pharmacogenomic aspects of gene therapy may help in explaining the relationship between the genome and the genome therapy, and may provide new clues to modifying these effects in disease prevention and to develop new drugs for therapy. One

of the most important aspects of epigenomics is DNA methylation of human genome, which is involved in addition of methyl group to cytosine next to guanine in the DNA sequence. Hypomethylation and hypermethylation cause genomic's malfunctions, and several diseases for example, cancer, heart diseases, diabetics and others are associated with this genomic abnormality . In this respect, targeting aberrant DNA methylation to treat cancer is based on the idea that normal cells have tumor suppressor genes that can be turned "on" or "off" (i.e., silenced). Silencing of tumor suppressor genes is usually associated with hypermethylation in the promoter regions of cells, which results in loss of expression and subsequent tumorigenesis. This article explains the known mechanisms of DNA methylation and describes therapeutic approaches to reversing aberrant gene silencing in myelodysplasia .

Myelodysplasia

Myelodysplastic syndrome (MDS, myelodysplasia) is a group of disorders in which the bone marrow functions abnormally and insufficient numbers of mature blood cells are produced. Bone marrow failure can result, with transformation to acute leukemia in up to 40% of patients depending on their subtype. MDS is characterised by anaemia, abnormally low white blood cell count, a tendency to infection and bleeding problems. There are five subtypes of MDS with prognosis highly dependent on classification and associated diseases. Patients with refractory anaemia subtype are less likely to progress to more aggressive forms of the disorder. The median survival is 20 months. MDS is mainly a disorder of those aged over 50 years of age. Exposure to benzene and radiation are thought to be risk factors. Recent study revealed that the incidence of MDS in England and Wales is uncertain, but due to a rising elderly population, the incidence is thought to be increasing. The overall incidence is thought to be about 4 per 100,000 population. However, expert's opinion suggests the incidence is higher as it is a relatively new disease and often goes undiagnosed. The disease often presents as a primary problem in the elderly, and as a secondary complication of treatment for malignant disease in younger patients.

Current treatment for MDS is unsatisfactory and is primarily aimed at preventing or relieving symptoms, with platelet and red blood cell transfusions given as required and antibiotics to treat infection. Cytokine therapy involving growth factors such as erythropoietin to increase haemoglobin, granulocyte colony-stimulating factor to increase white blood cells and thrombopoietin for severe thrombocytopenia are given as indicated. Patients with low-risk MDS may respond to immunosuppressive treatment and patients under 65 with good performance status may be considered for allogeneic haemopoietic stem cell transplantation.

Methylation inhibitors

Two methylation inhibitors, azacitidine and decitabine , have generated much interest as cancer therapies. Azacitidine (figure 2) is a ribonucleic acid (RNA) precursor, whereas

decitabine (figure 3) is a DNA precursor. Chemically, azacitidine differs from decitabine in structure only slightly by having a hydroxyl group that is lacking in decitabine. Azacitidine is phosphorylated by the enzyme uridine-cytidine kinase and is then incorporated into RNA. It is incorporated into DNA by conversion to a deoxyribose form by the enzyme ribonucleotide reductase, which converts ribose to deoxyribose. Decitabine is phosphorylated by deoxycytidine kinase and then incorporated into DNA. Both drugs are prodrugs to 5-azadeoxycytidine triphosphate; however, their biochemical differences may allow one to work in a patient when the other does not. Ribonucleotide reductase, which is necessary for incorporation of azacitidine into DNA, can be inhibited by hydroxyurea. This is important information for clinicians because hydroxyurea is commonly used to control white blood cell counts in patients with leukemia and to manage symptoms of sickle cell disease. Seven Studies of the effects

of hydroxyurea on methylation when used alone or with azacitidine or decitabine demonstrate that hydroxyurea alone has no effect on DNA viewed as a signal or a target that attracts methyl binding proteins and histone-modifying proteins. Together these elements comprise the field of “epigenomics,” which is loosely defined as heritable information that is not coded for in the DNA sequence itself. Histone modifications such as acetylation, methylation, and phosphorylation affect several biologic processes, including gene regulation. This led to increasing clinical interest in combining DNA methylation inhibitors with drugs that can modify histones, such as histone deacetylase inhibitors. Current research on effectiveness of DNA methylation inhibitors revealed encouraging results for therapy of MDS.

Azacitidine treatment of MDS

A randomised controlled phase III trial was carried out in 191 patients with MDS comparing azacitidine (99 patients) with supportive care (92 patients). The majority of patients were elderly (median age 68 years) and male (69%). Both trial groups received transfusion and antibiotics as required, and patients in the supportive arm whose condition worsened were able to cross over to azacitidine. Azacitidine was administered subcutaneously 75mg/day for 7 days every 28 days. Patients were assessed after their fourth cycle; those who achieved complete response (CR) continued to have 3 more cycles and those with partial response (PR) or improvement continued until either CR or relapse occurred. Responses were observed in 60% of patients on azacitidine (7% CR, 16% PR, and 37% improved) compared with 5% improved in those receiving supportive care ($p < 0.001$). Median time to leukaemic transformation or death was 21 months for the azacitidine arm and 13 months for supportive care ($p = 0.007$). Transformation to acute myelogenous leukaemia occurred as the first event in 15% of those who received azacitidine compared with 38% receiving supportive care ($p = 0.001$). Analysis after 6 months showed a median survival of an additional 18 months for azacitidine and 11 months for supportive care ($p = 0.03$). Quality of life was significantly improved with

azacitidine including symptoms of fatigue, dyspnoea, physical functioning, and psychological distress.

Decitabine treatments of MDS

Interim results have been reported from a multi-centre phase II trial of decitabine administered at 45mg/day for 3 days every 6 weeks for a maximum of 6 cycles in 66 patients. Overall response rate was 49% with a 64% response rate in high-risk patients. Median response duration was 31 weeks, with response duration of 39 weeks and 36 weeks for patients who reached a PR or CR respectively. Median survival from diagnosis was 22 months and from the start of therapy 15 months. Data for 169 patients revealed a response rate of 49%. Platelet count increased in 42% of the patients after one cycle. 63% of patients who received at least 2 cycles showed platelet increase. The median survival was 15 months .

A further unpublished phase II study, conducted in Europe on 125 patients with advanced MDS, demonstrated positive results. Of 121 patients, a response rate of 49% was observed, and an additional 16% of the patients experienced stable disease. The average duration of remission was 9 months with a median survival rate of 22 months. A trial evaluating cytogenetic response in MDS following administration on decitabine has been published. Of 115 successfully karyotyped patients, 61 (53%) had clonal chromosomal abnormalities prior to treatment. Major cytogenetic responses were observed in 19 patients (31% of those with abnormal cytogenetics, 17% of all patients) after a median of 3 courses. Median responses were 7.5 months (range 3-15). There were three out of five cytogenetic responses in the 'low-risk' karyotype group, 6 out of 30 with 'intermediate risk' and 10 out of 26 in the 'high risk' group. Median survival in these cytogenetic subgroups was 30, 8 and 13 months respectively. This study suggests that repeated courses of low-dose decitabine induces cytogenetic remissions in a substantial number of patients with MDS and pre-existing chromosomal abnormalities; response being associated with improved survival compared with patients in whom the cytogenetically abnormal clone persists. Patients with 'high-risk' chromosomal abnormalities may particularly benefit from this treatment.

Conclusions

The DNA methylation inhibitors, azacitidine and decitabine, are already clinically available, these two drugs are first generation of epigenomic drugs. Additional drugs are in development or are being tested for new clinical indications. These include zebularine, 5-fluorodeoxycytidine, mitoxantrone, procainamide, MG98, ECGC, and RG108. In addition, there are several agents that work synergistically with methylation inhibitors, including the histone deacetylase inhibitors trichostatin, phenylbutyrate, MG103, and SAHA. Although the mechanisms for some of these drugs are not yet known, epigenetic therapy is a very promising biologic model for cancer therapy. The biology of DNA methylation is well understood, and the tools to study epigenomic changes are available. It is expected to see an increase in the number of epigenomic therapies to become

clinically available as a better understanding of the association between cancer and epigenomics is developed.

References

- 1- Allis, D. (2008). Epigenetics. Publisher: CSH, New York.
- 2- Esteller, M. and Baylin, S. (2002) Proceedings of cancer epigenetics. Madrid
- 3- Baylin, S. (2007). The Promise of Epigenetics Therapy. Publisher: CME, Baltimore.
- 4- Robin Holliday, R. (2006). Epigenetics: A Historical Overview. Epigenetics,1(2): 77-80
- 5- [Feinberg, A.](#) (2008). Epigenetics at the Epicenter of Modern Medicine . JAMA, 299 (11): 1345-1350

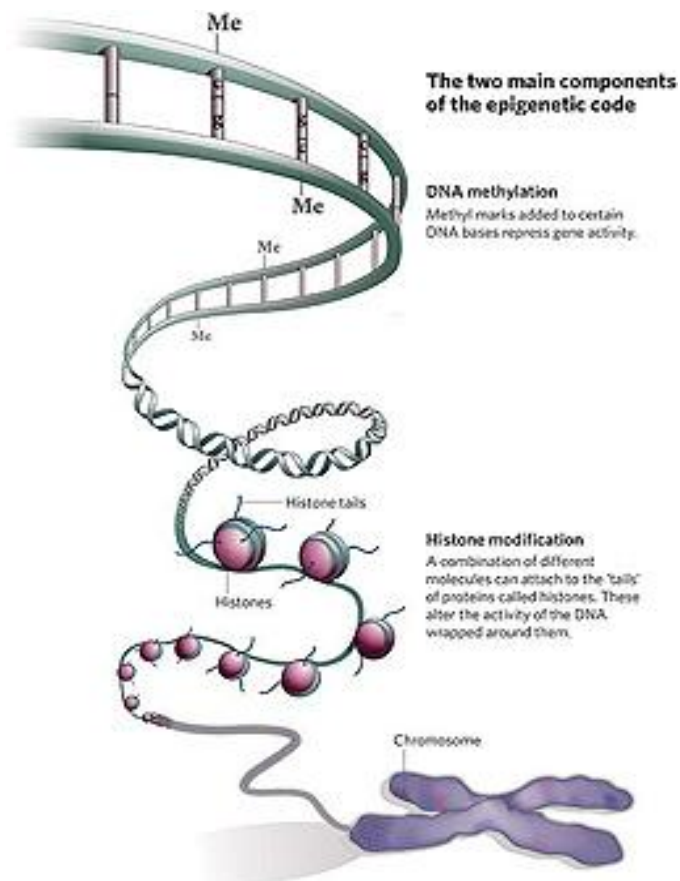


Figure (1). The mechanisms of epigenomics

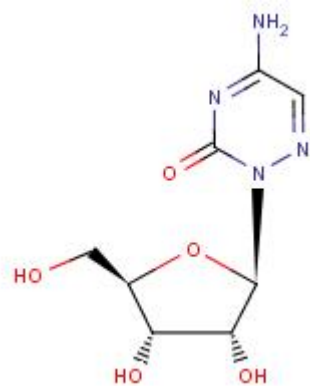


Figure (2). Azacytinde

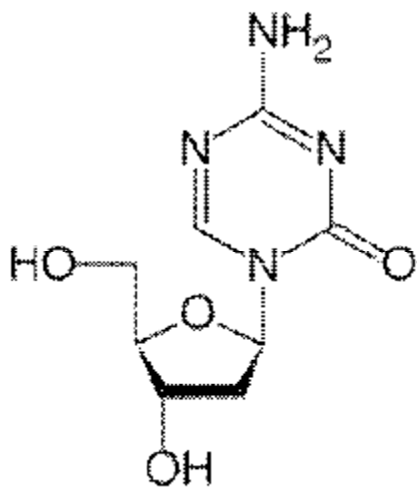


Figure (3). Decitabine



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List of International Exhibitions and Conferences

<http://www.pharmaceutical-technology.com/exhibitions/>

February 2009

- 2 Feb - 3 Feb** **Process Manufacturing Congress 2009**
Palace Hotel, Berlin, Germany.
Organisers: Oxford Global
Email: marketing@oxfordglobal.co.uk
URL: www.processmanufacturing-congress.com
- 5 Feb - 6 Feb** **Effective Document Management for the
Pharmaceutical, Biotech & Medical Device Industries**
Malvern, PA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 9 Feb - 10 Feb** **FDA Inspections of Clinical Data Systems**
Malvern, PA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com

- 9 Feb - 10 Feb Practical Methods for Project Management**
Costa Mesa, CA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 9 Feb - 11 Feb Good Clinical Practices (GCPs)**
Malvern, PA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 11 Feb - 13 Feb QA/QC Strategy for Biologics and Biopharmaceuticals**
Malvern, PA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 12 Feb - 12 Feb The Pharma Summit**
Renaissance Chancery Court, London, United Kingdom.
Organisers: Economist Conferences
Email: rsvpclare@economist.com
URL:
guest.cvent.com/EVENTS/Info/Summary.aspx?i=e95fcc24-c3d3-4461-bf89-8cf362f61e8f
- 12 Feb - 16 Feb Chemtech + Pharma World Expo 2009**
NSE Complex(Bombay Exhibition Centre), Mumbai,
Maharashtra, India.
Organisers: CHEMTECH Secretariat
Email: a_afganullah@jasubhai.com
URL: www.chemtech-online.com
- 13 Feb - 16 Feb The 19th Conference of the APASL - APASL 2009 Hong Kong**
Hong Kong Convention & Exhibition Centre, Hong Kong,
Hong Kong.
Organisers: APASL 2009 Hong Kong Organizing
Committee (Secretariat: Cosoman Limited)
Email: info@apasl2009hongkong.org
URL: www.apasl2009hongkong.org

23 Feb - 24 Feb Writing Effective Standard Operating Procedures and Other Process Documents

Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

23 Feb - 24 Feb Pharmaceutical Production Batch Record Review

Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

23 Feb - 24 Feb Advances & Progress in Drug Design

Copthorne Tara Hotel, London, United Kingdom.

Organisers: SMi Group Ltd

Email: zphilbey@smi-online.co.uk

URL: www.smi-online.co.uk

23 Feb - 25 Feb 21st Annual DIA Conference on Marketing Pharmaceuticals in a Time of Change

New York Marriott Marquis Hotel, NY, USA.

Organisers: Drug Information Association

Email: dia@diahome.org

URL: www.diahome.org

March 2009

Mar. 02 & 03, 2009

Stability Programs for Product Shelf Life – From Development to Approval

<http://www.cfpie.com/showitem.aspx?productid=072>

Mar. 12 & 13, 2009

European Filing & Registration Procedures

<http://www.cfpie.com/showitem.aspx?productid=031>

2 Mar - 3 Mar

**Analytical Method Validation for
Pharmaceutical, Biopharmaceutical,
and Biologics Quality Control**

Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

2 Mar - 4 Mar

Biostatistics for Non-Statisticians

Berlin, Germany.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

3 Mar - 4 Mar

FDA Inspections: What To Expect And How To Prepare

Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

4 Mar - 5 Mar

Stability Testing of Proteins, Peptides & Other Biomolecules

Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

5 Mar - 6 Mar

Introduction to Statistical Analysis of Laboratory Data

Berlin, Germany.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

11 Mar - 12 Mar

Electronic Data in Clinical Trials

Hyatt Regency, Miami, FL, USA.

Organisers: Cambridge Healthtech Institute

Email: jprudhomme@healthtech.com

URL:

www.healthtech.com/EDC/overview.aspx

11 Mar - 12 Mar

Polymorphism & Crystallisation 2009

Thistle Marble Arch, , London, , United Kingdom.

Organisers: PharmaIQ

Email: enquire@iqpc.co.uk

URL: www.iqpc.com/uk/poly

11 Mar - 13 Mar

The CTD/eCTD: Building the Marketing Application Throughout Clinical Development
Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

12 Mar - 13 Mar

European Filing & Registration Procedures
Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

16 Mar - 17 Mar

Cleanroom Microbiology for the Non-Microbiologist
Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

16 Mar - 17 Mar

Validation of Computer Systems
Berlin, Germany.

Organisers: CfPIE

Email: info@cfpie.com

URL: www.cfpie.com

18 Mar - 19 Mar

Pharma Packaging & Labeling USA Conference
Philadelphia, USA.

Organisers: VIBEvents

Email: events@vibevents.com

URL: www.pharmapackaging-events.com/usa

18 Mar - 19 Mar

Sterilization Procedures: Technology, Equipment and Validation
Malvern, PA, USA.

Organisers: CfPIE

Email: info@cfpie.com

- URL: www.cfpie.com
- 23 Mar - 24 Mar** **Aseptic Processing in the Manufacture of Biotech and Pharmaceutical Products**
Costa Mesa, CA, USA.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 25 Mar - 27 Mar** **Good Clinical Practices (GCPs)**
Dublin, Republic of Ireland.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 29 Mar - 31 Mar** **DUPHAT - Dubai International Pharmaceuticals & Technologies Conference & Exhibition**
Dubai International Convention & Exhibition Centre, Dubai, United Arab Emirates.
Organisers: Index Holding
Email: pratibha.menon@index.ae
URL: www.duphat.ae
- 30 Mar - 31 Mar** **Effective Quality Assurance Auditing for FDA Regulated Industries**
Dublin, Republic of Ireland.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com
- 30 Mar - 1 Apr** **The Drug Development Process - From Discovery to Commercialization**
Dublin, Republic of Ireland.
Organisers: CfPIE
Email: info@cfpie.com
URL: www.cfpie.com

April 2009

Apr. 02 & 03, 2009 >

Drug Master Files (DMFs) - Understanding and Meeting Your Regulatory and Processing Responsibilities

<http://www.cfpie.com/showitem.aspx?productid=026>

21 Apr - 23 Apr

LogiPharma Europe 2009

Intercontinental Hotel, Geneva, -, Switzerland.

Organisers: WBR

Email: logipharma@wbr.co.uk

URL: www.logipharmaeurope.com

29 Apr - 30 Apr

Drug Development Summit 2009

Radisson SAS, London, United Kingdom.

Organisers: Oxford Global

Email: c.roberts@oxfordglobal.co.uk

URL: www.drugdevelopment-summit.com

May 2009

11 May - 14 May

9th Annual Shared Services and Outsourcing Week

Novotel World Congress Centre,
Budapest, Budapest, Hungary.

Organisers: SSON

Email: enquire@SSoWeek.com

URL: www.iqpc.com/hu/SSOW/ediary

18 May - 21 May

Cancer Immunotherapy & Immunomonitoring

TBA, Kiev, -, Ukraine.

Organisers: GTCbio

Email: shurinmr@upmc.edu

URL: www.gtcbio.com

- **Water Interactions with Pharmaceutical Solids**

May 4-6, 2009

Pyle Center, 702 Langdon Street, Madison, WI

<http://ce.pharmacy.wisc.edu/courseinfo/2009Water>

- **Principles of Solid Dosage Forms**

May 4-8, 2009

Pyle Center, 702 Langdon Street

Madison, WI

http://ce.pharmacy.wisc.edu/theme/Clouds/pix/uw/course_info_base_03.jpg

- **Preformulation and Stabilization of Pharmaceuticals**

May 4-8, 2009

Pyle Center, 702 Langdon Street, Madison, W

<http://ce.pharmacy.wisc.edu/courseinfo/2009Preform>

- **Introduction to the Regulatory Process for Drug Development**

May 11-14, 2009

Lowell Center, 610 Langdon Street

Madison, WI

<http://ce.pharmacy.wisc.edu/courseinfo/2009Regulatory>

- **Introduction to Drug Metabolism and Transporters**

May 11-14, 2009

Lowell Center, 610 Langdon Street

Madison, WI

<http://ce.pharmacy.wisc.edu/courseinfo/2009DrugMetab>

- **Nanoparticles: Applications in Drug Formulation and Delivery**

May 18-20, 2009

Lowell Center, 610 Langdon Street

Madison, WI

<http://ce.pharmacy.wisc.edu/courseinfo/2009Nanoparticles>

- **Pharmacokinetics, Bioavailability and Bioequivalence**

May 18-22, 2009

Lowell Center, 610 Langdon Street

Madison, WI

<http://ce.pharmacy.wisc.edu/courseinfo/2009PKBABE>

Process Validation for Drugs and Biologics

May 14 & 15, 2009

<http://www.cfpie.com/showitem.aspx?productid=049>

Sterilization Procedures: Technology, Equipment and Validation

May 28 & 29, 2009

<http://www.cfpie.com/showitem.aspx?productid=075>

AUPAM Online Bulletin : <http://www.aupam.com/aupamonline.php>



تأسس عام 1981
AUPAM أوبام

الاتحاد العربي لمنتجي الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

Established by a resolution of the Arab Economic Unity Council

تأسس بقرار من مجلس الوحدة الاقتصادية

ص. ب : 811520 عمان 11181 المملكة الاردنية الهاشمية P.O Box 811520 Amman H.K . Jordam

نشرة الاتحاد

نشرة علمية إخبارية متنوعة توزع بواسطة البريد الالكتروني تصدر عن الأمانة العامة للاتحاد
الإشراف العلمي والفني : د. باسل الشاكر عضو مجلس الإدارة

AUPAM Online Bulletin

ملحق النشرة السابع

عدد : (4) كانون-2-2009



الاتحاد العربي لمنتجي الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

الشهادة العربية في ممارسة التصنيع الصيدلاني الجيد Arab certificate on Good manufacturing practice of Pharmaceutical products

DEEF Pharmaceutical Industry Co.
(Kingdom of Saudi Arabia -AL-Qassim)

On 17/7/2008

Has been Vountarily inspected.
It is considered that it complies with the
Arab guidelines On Good manufacturing
practices for Pharmaceutical products-GMP
(updated 2007)

Accordingly this certificate was issued
valid for three years

شركة ديف للصناعات الدوائية
(المملكة العربية السعودية - القصيم)

بتاريخ ٢٠٠٨/٧/١٧

تم التفتيش عليها اختياريًا ووجدت متطابقة مع متطلبات
المدونة العربية في مبادئ الممارسة الجيدة
لتصنيع المستحضرات الصيدلانية
(نسخة 2007)

وبناء على ذلك منحت هذه الشهادة
صالحة لمدة ثلاث سنوات

الرئيس Chairman

الأمين العام Secretary General



تأسس عام 1981
AUPAM أوبام

الاتحاد العربي لمنتجات الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

Established by a resolution of the Arab Economic Unity Council

تأسس بقرار من مجلس الوحدة الاقتصادية

ص.ب : 811520 عمان 11181، المملكة الأردنية الهاشمية P.O Box 811520 Amman H.K . Jordam

نشرة الاتحاد

نشرة علمية إخبارية متنوعة توزع بواسطة البريد الإلكتروني تصدر عن الأمانة العامة للاتحاد
الإشراف العلمي والفني : د. باسل الشاكر عضو مجلس الإدارة

AUPAM Online Bulletin

ملحق النشرة السابع

عدد : (4) كانون-2 2009



الاتحاد العربي لمنتجات الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

الشهادة العربية في ممارسة التصنيع الصيدلاني الجيد
Arab certificate on Good manufacturing practice of Pharmaceutical products

ALFARES Pharmaceutical Co.
(Syrian Arab Republic - Dumuscus)

شركة الفارس للصناعات الدوائية
(الجمهورية العربية السورية - دمشق)

On 17/7/2008

بتاريخ ٢٠٠٨/٧/١٧

Has been Vountarily inspected.
It is considered that it complies with the
Arab guidelines On Good manufacturing
practices for Pharmaceutical products-GMP
(updated 2007)

تم التفتيش عليها اختياريًا ووجدت متطابقة مع متطلبات
المذونة العربية في مبادئ الممارسة الجيدة
لتصنيع المستحضرات الصيدلانية
(نص ٢٠٠٧)

Accordingly this certificate was issued
valid for three years

وبناء على ذلك منحت هذه الشهادة
صالحة لمدة ثلاث سنوات

الرئيس Chairman

الأمين العام Secretary General



تأسس عام 1981
AUPAM أوبام

الاتحاد العربي لمنتجي الأدوية والمستلزمات الطبية Arab Union of The Manufacturers of Pharmaceuticals and Medical Appliances

Established by a resolution of the Arab Economic Unity Council

تأسس بقرار من مجلس الوحدة الاقتصادية

ص. ب : 811520 عمان 11181، المملكة الاردنية الهاشمية P.O Box 811520 Amman H.K . Jordam

نشرة الاتحاد

نشرة علمية إخبارية متنوعة توزع بواسطة البريد الالكتروني تصدر عن الأمانة العامة للاتحاد
الإشراف العلمي والفني : د. باسل الشاكر عضو مجلس الإدارة
AUPAM Online Bulletin

ملحق النشرة الثامن

عدد : (4) كانون-2 2009

توصيات الاجتماع التنسيقى الذي تم انعقاده في دمشق بتاريخ 2008/8/23 حول العمل على توحيد معايير التسجيل الدوائي فى الدول العربية

تم افتتاح الجلسة برعاية الدكتورة ميسون نصري معاون وزير الصحة السوري والدكتور
عدنان الكيلانى أمين عام الإتحاد العربي لمنتجي الأدوية و المستلزمات الطبية وحضور ممثلي
الدول الآتية :

الأردن- العراق - تونس - سوريا - مصر و نائب رئيس المكتب التنفيذي لمجلس وزراء
الصحة بدول مجلس التعاون الخليجي ، حيث تم مناقشة كيفية التنسيق لتوحيد المعايير الخاصة
بالتسجيل الدوائي بين الدول العربية و تدليل الصعوبات التى تواجه ذلك
وقد تم الاتفاق على اعتماد الملف الفنى العالمى للتسجيل الدوائي الصادر عن منظمة ICH و
المعروف باسم

CTD (Common technical document) كأساس لمف التسجيل الموحد بين الدول العربية

وذلك مواكبة للنظم العالمية الحديثة

وقد ارتكزت توصيات الاجتماع على كيفية إعداد خطة زمنية من اجل تطبيق هذا المشروع و
التي شملت عدة مراحل منها:

المرحلة الأولى:

1- يتم تشكيل لجان فنية تشمل نخبة من الأساتذة المتخصصين في مجالات دراسات الثبات ، التكافؤ الحيوي ، التركيبات و الفارماكولوجي وذلك لوضع الهيكل العام للعمل ولدراسة مفردات *CTD*

2- رفع توصية إلى مجلس وزراء الصحة العرب في اجتماعه المنعقد في مارس 2009 متضمنة ما تم انجازه من خطوات مع وضع برنامج زمني بحيث يتم الانتهاء من الدراسة خلال عامين من الاعتماد من المكتب التنفيذي للمجلس

3- إرسال خطاب للدول العربية - بما فيهم الدول التي شاركت في الاجتماع التنسيقى بدمشق - متضمناً توصيات الجلسة مع طلب بإعداد قائمة بأسماء المرشحين من كل دولة لعضوية اللجان الفنية الموصى بتشكيلها

4- إجراء فعاليتين احدهما في تونس و ذلك قبل نهاية عام 2008 و الثانية في دمشق خلال عام 2009 بحيث تكون متلازمة مع اجتماع مجلس وزراء الصحة العرب وذلك من أجل تفعيل التوصيات و تحفيز جميع الأطراف المعنية على تطبيق نظام *CTD*

المرحلة الثانية:

- 1- بعد الانتهاء من الاتفاق على وضع معايير *CTD* الموحد بين الدول العربية سوف يتم تقييم مرحلي للتجربة
- 2- على كل دولة أن تقوم كل فيما يخصها البدء بإعداد خطة للتعديل في الأنظمة و التشريعات لكي تتناسب مع هذا النظام عند تطبيقه
- 3- تتولى كل من السلطات الصحية و قطاع الصناعة الدوائية في كل دولة بتدريب العاملين لديها حول كيفية تطبيق نظام *CTD* كأساس لملف التسجيل هذا على أن يقوم الاتحاد العربي لمنتجات الأدوية و المستلزمات الطبية بالتعاون مع قطاع الصناعة الدوائية بتدعيم القطاع الدوائي الحكومي و القطاع الخاص .
- 4- يتم تشكيل لجنة لتقييم كفاءة المعامل الرقابية بكل دولة طبقاً للمعايير العالمية المعمول بها للتأكد من إمكانية تمشيهاها مع متطلبات التحليل في التسجيل بنظام *CTD*

و في النهاية اجمع الحضور على أن تطبيق نظام (*CTD* Common technical document) كأساس لملف التسجيل الموحد بين الدول العربية سوف يكون له دور اساسى في تسهيل عملية تسجيل الأدوية في كل الدول العربية بالإضافة إمكانية التصدير إلى الدول الأجنبية