

# **IRAS e-Tax Guide**

## **Pharmaceutical Manufacturing Industry: Tax Treatment of Research & Development and Intellectual Property-Related Expenditures (Second edition)**



INLAND REVENUE  
AUTHORITY  
OF SINGAPORE

Published by  
Inland Revenue Authority of Singapore

Published on 16 May 2014

First edition on 22 Aug 2011

Disclaimers: IRAS shall not be responsible or held accountable in any way for any damage, loss or expense whatsoever, arising directly or indirectly from any inaccuracy or incompleteness in the Contents of this e-Tax Guide, or errors or omissions in the transmission of the Contents. IRAS shall not be responsible or held accountable in any way for any decision made or action taken by you or any third party in reliance upon the Contents in this e-Tax Guide. The information provided in the guide aims to provide a better understanding of taxpayers' tax obligations and is not intended to comprehensively address all possible tax issues that may arise. While every effort has been made to ensure that this information is consistent with existing law and practice, should there be any changes, IRAS reserves the right to vary our position accordingly.

© Inland Revenue Authority of Singapore

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording without the written permission of the copyright holder, application for which should be addressed to the publisher. Such written permission must also be obtained before any part of this publication is stored in a retrieval system of any nature.

## TABLE OF CONTENTS

<b>1</b>	<b>Aim.....</b>	<b>3</b>
<b>2</b>	<b>At a glance .....</b>	<b>3</b>
<b>3</b>	<b>Overview of the Pharmaceutical Manufacturing Industry in Singapore .....</b>	<b>4</b>
<b>4</b>	<b>Deduction of R&amp;D Expenditure under Sections 14D and 14DA.....</b>	<b>4</b>
<b>5</b>	<b>Writing Down Allowances under Sections 19B.....</b>	<b>8</b>
<b>6</b>	<b>Provision of R&amp;D Services.....</b>	<b>8</b>
<b>7</b>	<b>Deduction of Royalty Payments and Withholding Tax Implications .....</b>	<b>9</b>
<b>8</b>	<b>Contact Information.....</b>	<b>10</b>
<b>9</b>	<b>Updates and Amendments .....</b>	<b>10</b>
	<b>Annex A – Typical Value Chain of a Pharmaceutical Manufacturing Company ....</b>	<b>11</b>
	<b>Annex B – Manner of Set-off for Expenditure Incurred on R&amp;D Activities Relating to Existing Trade or Business.....</b>	<b>12</b>
	<b>Annex C – Flow Chart on Set-off Rules for R&amp;D Expenditure.....</b>	<b>14</b>
	<b>Annex D – Deduction of Royalty Payments and Withholding Tax.....</b>	<b>15</b>

# Pharmaceutical Manufacturing Industry: Tax Treatment of Research & Development and Intellectual Property-Related Expenditures

## 1 Aim

- 1.1 This e-Tax guide provides guidance on tax treatments for the following items common to companies in Singapore which develop, manufacture and market drugs for use as pharmaceuticals (herein referred to as “pharmaceutical manufacturing companies”):
- (a) Deduction of research and development<sup>1</sup> (“R&D”) expenditure under Sections 14D<sup>2</sup> and 14DA<sup>2</sup> of the Singapore Income Tax Act (“SITA”);
  - (b) Writing down allowances under Sections 19B of the SITA;
  - (c) Provision of R&D services;
  - (d) Deduction of royalty payments and withholding tax implications.

## 2 At a glance

- 2.1 A pharmaceutical manufacturing company may claim deductions on R&D expenditure relating to existing trade or business in the year of assessment (“YA”) in which it was incurred. The manner of set-off against income depends on whether the expenditure can be directly identified to specific products. As a matter of principle, the matching of expense and revenue should be observed where feasible.
- 2.2 The company may also claim deductions on R&D expenditure relating to a new trade or business, provided the expenditure is for qualifying R&D activities conducted in Singapore during the basis periods from YA 2009 to YA 2025 under the liberalised R&D tax treatment. To give maximum benefits to the company, such deductions shall be set off against normal income first with the remaining balance available for set off against concessionary income in accordance with Section 37B of the SITA.
- 2.3 When a pharmaceutical manufacturing company undertakes R&D activities on behalf of its affiliates or head office, it should charge an arm’s length service fee. The R&D service fees would be taxed at the normal corporate tax rate unless

---

<sup>1</sup> The definition of “research and development” is provided in Section 2 of the Singapore Income Tax Act. For more guidance, please refer to the IRAS e-Tax guide on “Research and Development Tax Measures”.

<sup>2</sup> Prior to YA 2012, a business must obtain approval from the Singapore Economic Development Board to claim writing down allowances on payments made under R&D cost-sharing agreements (CSAs). From YA 2012, the scope of sections 14D and 14DA of the ITA is expanded to include payments made under R&D CSAs.

such services are explicitly covered under the Letter of Offer of Incentives issued by the Economic Development Board (EDB).

- 2.4 As for royalty payments for the use of intellectual property rights (“IPRs”), the deduction rules and the corresponding withholding tax implications will depend on when the liability to pay the royalty crystallises.

### **3 Overview of the Pharmaceutical Manufacturing Industry in Singapore**

- 3.1 The pharmaceutical manufacturing industry develops, produces and markets drugs licensed for use as medications. These drugs are usually covered by patents and are sold with a profit margin sufficient for the patent owner to recover the expenditure on research and development that goes into developing the drug. *Annex A* shows the typical value chain of a pharmaceutical manufacturing company.
- 3.2 Singapore is a choice location for pharmaceutical manufacturing companies to locate their manufacturing hubs. Manufacturing facilities established in Singapore are mainly primary manufacturing plants for Active Pharmaceutical Ingredients (“API”s). Some have started to perform secondary manufacturing in recent years. These manufacturers are no longer mere contract or toll manufacturers. They also undertake more functions such as R&D and headquarter activities in Singapore. Some of them are also entrepreneurs that own the IPRs to produce and market the drugs. The ownership of the IPRs arises from the funding of the R&D costs of developing the drugs or acquiring of the rights through intellectual property (“IP”) licensing from IPR owners which are usually affiliated companies. As such, the risks undertaken by these pharmaceutical manufacturing companies are higher compared to contract or toll manufacturers, resulting in larger share of profits or losses correspondingly.
- 3.3 There are also pharmaceutical manufacturers which locate their regional headquarters in Singapore. Their regional activities typically include marketing support, clinical trial coordination, IP management, procurement, logistics, manufacturing management and R&D services.
- 3.4 The pharmaceutical manufacturing industry may avail itself of tax incentives such as the Pioneer Incentive, Development and Expansion Incentive and the Approved Royalty Incentive. The interplay in applying various tax provisions and the tax incentives has given rise to questions on the appropriate tax treatment. The paragraphs below elaborate on some of these issues and Comptroller’s views on the appropriate treatment.

### **4 Deduction of R&D Expenditure under Sections 14D and 14DA**

- 4.1 Pharmaceutical manufacturing companies typically incur substantial R&D expenditure. The R&D activities may be undertaken directly by the company itself, outsourced to another R&D organization or under a R&D cost sharing agreement (“CSA”).
- 4.2 A person carrying on a trade or business may deduct the following R&D expenditure as and when it is incurred as provided under Section 14D of SITA. The amount of deduction will depend on whether the R&D expenditure is incurred for the person’s existing trade or business, or otherwise.

***For existing trade or business***

- (1)** Expenditure incurred on R&D undertaken directly by him (except capital expenditure on plant, machinery, land, buildings or acquisition of rights)
- (2)** Payment made for R&D activities outsourced to any R&D organisations and conducted locally or overseas<sup>3</sup>
- (3)** Payment made for R&D activities under CSAs from YA 2012 and conducted locally or overseas<sup>3</sup>

***For new trade or business (Years of Assessment 2009 to 2025)***

- (1)** Expenditure incurred on R&D undertaken directly by him (except capital expenditure on plant, machinery, land, buildings or acquisition of rights)
- (2)** Payment made for R&D activities outsourced to R&D organisations and undertaken in Singapore
- (3)** Payment made for R&D activities under CSAs and undertaken in Singapore

- 4.3 In addition to the deduction allowed under Section 14D, enhanced deductions for qualifying R&D expenditure (defined to be staff costs and consumables)<sup>4</sup> incurred are also available under Section 14DA<sup>5</sup> and the Productivity and Innovation Credit Scheme<sup>6</sup>.
- 4.4 Generally, the pharmaceutical manufacturing company can claim deductions on R&D expenditure in the YA relating to the basis period in which the expenditure

<sup>3</sup> For R&D services outsourced to overseas R&D organisations or undertaken under a CSA, the company is required to make self-declarations to IRAS regarding the ownership and commercialisation of the intangible created.

<sup>4</sup> Where sums are payable by a company to an R&D organisation or under a R&D CSA, and the amount of qualifying R&D expenditure cannot be readily identified, 60% of the sums payable are deemed to be the qualifying R&D expenditure.

<sup>5</sup> For more details, please refer to the IRAS e-Tax guide on “Research and Development Tax Measures”.

<sup>6</sup> For more details, please refer to the IRAS e-Tax guide on “Productivity and Innovation Credit”.

was incurred. The R&D undertaken may or may not be identifiable to a specific product line and for which the income may be taxed at prevailing rates or concessionary rates. The manner and order of deduction in such situations are discussed below.

#### **4.5 Manner of set-off for expenditure incurred on R&D activities relating to existing trade or business**

4.5.1 As a matter of principle, the matching of expense and revenue should be observed where feasible. Hence pharmaceutical manufacturing companies need to establish the purpose, products or activities for which R&D has been undertaken.

##### **4.5.2 R&D expenditure directly identifiable to specific existing products**

The R&D expenditure should first be matched against income generated from specific products under the respective tax rate categories. To illustrate, if a pharmaceutical manufacturing company enjoying pioneer incentive undertook non-routine improvements on its pioneer product, the R&D expenditure incurred should be matched and deducted against the income derived from the pioneer product under the tax exempt category.

##### **4.5.3 R&D expenditure not directly identifiable to specific existing products**

R&D expenditure may be incurred on continuous improvements on the manufacturing process of existing products. Where the R&D activities could not be identifiable to specific product lines or activities, the R&D expenditure may be deducted against the company's trade income in the year they are incurred. Where a pharmaceutical manufacturing company has trade income subject to tax under different tax rate categories (tax exempt, concessionary rate or normal rate), the R&D expenditure should be allocated across the various tax rate categories using a reasonable basis<sup>7</sup>.

##### **4.5.4 R&D expenditure relating to new products or processes**

(a) A pharmaceutical manufacturing company may incur R&D expenditure on discovering and developing new drugs or processes. As these R&D activities are to develop new products or processes to support the existing manufacturing trade of the company as a whole, the R&D expenditure may be treated as common expenses and deducted against the company's trade income in the year they are incurred. Where a pharmaceutical manufacturing company has trade income subject to tax under different tax rate categories

---

<sup>7</sup> The acceptable bases of allocation include turnover ratio or any other ratio used for allocating common operating expenses bearing a close nexus to the level of R&D activities undertaken. The basis, once adopted, must be applied consistently, unless there is a change in circumstances.

(tax exempt, concessionary rate or normal rate), the R&D expenditure should be allocated across the various tax rate categories based on a reasonable basis.

- (b) Strict application of the matching principle would require Comptroller to adjust the R&D expenditure to match it against the income subject to tax when the outcome of the R&D is known. The outcome of the R&D activities could be the commercialisation of a new drug or the income from the new discovery is given incentives subsequently. To provide greater tax certainty to companies, Comptroller will not make any retrospective adjustments on the deduction of R&D expenditure allowed in prior years regardless of the outcome from the R&D activities.

4.5.5 *Annex B* shows an example of the manner of set-off of R&D expenditure as described above.

4.6 **Manner of set-off for expenditure incurred on R&D activities not related to existing trade or business (i.e. new trade or business) – applicable for Years of Assessment 2009 to 2025**

4.6.1 With the enhancements to the R&D tax measures effective from YA 2009<sup>8</sup>, pharmaceutical manufacturing companies may claim deduction on expenditure incurred on qualifying R&D activities conducted in Singapore during the basis periods for YA 2009 to YA 2025 (both YAs inclusive) even if the R&D is not related to their existing trade or business. Likewise, expenditure incurred by a pharmaceutical manufacturing company for R&D activities performed outside Singapore and is not related to its existing trade or business, will not qualify for tax deduction.

4.6.2 Where a pharmaceutical manufacturing company derives both income subject to tax at the prevailing corporate tax rate (“normal income”) and income subject to tax at concessionary rate(s) (“concessionary income”), the qualifying R&D expenditure should first be deducted against its normal income. Any remaining balance of R&D expenditure will be treated as part of normal unabsorbed loss and is available for set off against concessionary income in accordance with Section 37B of the SITA. This will give maximum benefits to companies embarking on R&D in a completely new trade or business in Singapore.

4.7 *Annex C* provides a diagrammatic representation of the set-off rules for R&D expenditure.

---

<sup>8</sup> Please refer to IRAS e-Tax Guide on “Research and Development Tax Measures” for more details.



## **5 Writing Down Allowances under Sections 19B**

- 5.1 Pharmaceutical manufacturing companies may claim writing down allowances (“WDA”) under Sections 19B of the SITA for IPRs acquired. They may also claim enhanced allowances on costs incurred to acquire IPRs for use in a company’s trade or business under the Productivity and Innovation Credit Scheme<sup>9</sup>.
- 5.2 The manner of set-off shall follow the principles set out in Paragraph 4.5. Where feasible, companies should observe the matching of expense and revenue.
- (a) If the expenditure can be directly identifiable to specific existing products, the WDA should first be matched against income generated from specific products under the respective tax rate categories. Otherwise, the WDA may be allocated across the various tax categories using a reasonable basis.
- (b) If the expenditure relates to new products or processes within the company’s same trade or business, the WDA may be allocated across the various tax categories using a reasonable basis. Comptroller will not make any retrospective adjustments on the WDA allowed in prior years regardless of the outcome of the R&D activities.

## **6 Provision of R&D Services**

- 6.1 Some pharmaceutical manufacturing companies may undertake R&D activities on behalf of their affiliates or head office within the company’s manufacturing facility. Any IPRs arising from the R&D activities are usually owned by the affiliate or head office and not the Singapore company carrying out the R&D activities. In this regard, the Singapore company should charge an arm’s length fee for the provision of R&D services.
- 6.2 The R&D service fees would be taxed at the normal corporate tax rate unless such services are explicitly covered by incentives. Comptroller will rely strictly on the Letter of Offer of Incentives issued by the EDB to determine the appropriate tax treatment. Where such service income is not explicitly covered in the letter, Comptroller will assess the income to tax under the normal tax rate category.

---

<sup>9</sup> For more details, please refer to the IRAS e-Tax guide on “Productivity and Innovation Credit”.

## 7 Deduction of Royalty Payments and Withholding Tax Implications

- 7.1 Pharmaceutical manufacturers often pay royalties to their head office for the use of rights to manufacture drugs. There are two common bases typically used by pharmaceutical manufacturing companies when computing royalty payments. They are:

Basis	Description
(a) Ex-factory	Royalties are payable when the company sells its manufactured intermediate product to an intermediary (usually an affiliate) who then engages a toll manufacturer to formulate the intermediate product into the final drugs
(b) In-market	Royalties are payable only when the intermediary sells the finished drugs to end-customers

- 7.2 The deduction rules and the corresponding withholding tax implications will depend on when the liability to pay the royalty crystallises.
- 7.3 In the case of (a) above, royalty accruals and income from sale of intermediate product are recognised in the accounts when the sales take place. Under Section 14(1) of the SITA, a deduction is allowed if the expenditure has been “incurred” i.e. the liability to pay is crystallised. In this instance, since royalty payments are due and payable upon the sale of the intermediate product, the royalty payments will be deductible at this point. Similarly, royalty payments to non-residents will be subject to withholding tax when the intermediate product is sold.
- 7.4 In the case of (b) above, a company may make a provision for royalties under FRS 37<sup>10</sup> at the point of sales of intermediate product to the intermediary. This is to better match royalty expense and income derived and yet recognises that inventories are still held by the intermediary, pending sales to end-customers.
- 7.5 Although the company has created an accounting obligation in its accounts at the point of sales of intermediate product, its legal obligation only crystallises upon the sale of the product to end-customers. As such, the expenditure has not been considered to be “incurred” for tax purposes. Hence, the royalty payment is deductible only upon the sale of the final product to end-customers. As a corollary, the recipient will only be taxed on his royalty income when his legal

---

<sup>10</sup> FRS 37: Provisions, Contingent Liabilities and Contingent Assets

entitlement to the royalty income has crystallised, i.e., upon the sale of the final product to end-customers. If the recipient is a non-resident, tax should be withheld on the payment at this point.

7.6 *Annex D* shows an example of the above tax treatments for royalty payments.

## **8 Contact Information**

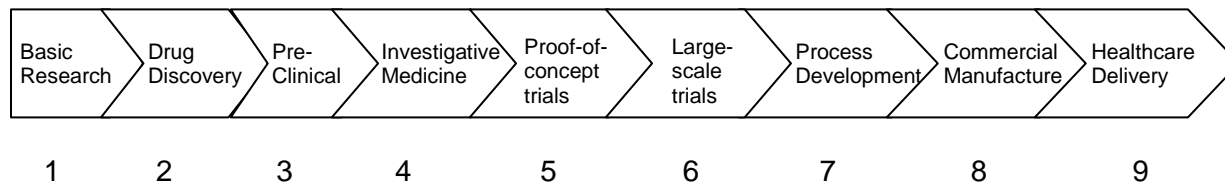
8.1 If you have any enquiries or need clarification on this Guide, please call the Corporate Tax helpline at 1800-3568622.

## **9 Updates and Amendments**

	<b>Date of amendment</b>	<b>Amendments made</b>
1	16 May 2014	<p>The amendments reflect changes to R&amp;D since the first edition of this guide was published on 22 Aug 2011. The major changes are:</p> <ul style="list-style-type: none"><li>• The extension of the R&amp;D scheme from YA 2015 to YA 2025</li><li>• The expansion of Sections 14D and 14DA to include payments made under R&amp;D cost-sharing agreements with effect from YA 2012.</li><li>• The removal of writing down allowances claim under S19C for approved R&amp;D cost sharing agreements</li></ul>

## Annex A – Typical Value Chain of a Pharmaceutical Manufacturing Company

Typically, the value chain of a pharmaceutical manufacturing company comprises the following stages:



- Stages 1 to 3 are the initial experimental stages of research and development (R&D). Stages 4 to 6, also known as clinical development, are the stages to establish the properties, effects and safety of the new compound or drug before its commercial production. Stages 1 to 6 make up the full R&D cycle of about 10 to 15 years.
- Process development at stage 7 refers to R&D carried out to optimise and improve manufacturing processes. It is carried out before commercial production can start and is usually a continuous process straddling over the production life cycle of the drug.
- Under commercial manufacture (stage 8), there are two major stages.
  - The first stage, which is known as primary manufacturing, is the production of the active pharmaceutical ingredients (“API”s). API is a simple organic compound that is synthesised chemically before it is formulated into a final drug.
  - The second stage, called secondary manufacturing, is the formulation of the API into the final drug.

The 2 stages are usually carried out in different plants which can also be located in different countries, typically for commercial reasons. Such commercial reasons for choosing the location of primary manufacturing plants include existence of good protection and enforcement of Intellectual Property rights, skilled workforce and good infrastructure. The main commercial reason of locating of secondary manufacturing plant is usually to be near the end consumer market to avoid stiff import tariffs on finished goods as opposed to raw materials (API).
- Stage 9 at the end of the value chain, is the marketing and delivery of drugs to end consumers.

## Annex B – Manner of Set-off for Expenditure Incurred on R&D Activities Relating to Existing Trade or Business

Co A undertakes in-house R&D activities that are related to its drug manufacturing business. One of the manufactured drugs, X, was awarded the Pioneer (Manufacturing) Incentive.

In the financial year ended 31 December 20x1, Co A derived both pioneer exempt and normal income. Co A incurred the following R&D expenditure:

Deduction / allowance under SITA	Purpose	Amount (\$)
Section 14D deduction	- Non-routine improvements on existing pioneer product X	20,000
	- Continuous improvements on manufacturing process of existing products	30,000
	- Developing new drug Y	60,000
Section 19B writing down allowance	- Acquiring IPR for new drugs	60,000

The new drug, Y, was successfully commercialised in March 20x2 and was awarded the Pioneer (Manufacturing) Incentive subsequently.

Co A's R&D expenditure should be reflected in its income tax computation for YA 20x2 as follows:

### Tax Computation

	\$'000 Pioneer Exempt	YA 20x2 \$'000 Normal Tax	\$'000 Total
Sales Income	800	400	1,200
Less: Trade-related R&D deductions			
- Pioneer product X (Note 1)	20	-	20
- Continuous improvements on manufacturing process (Note 2)	20	10	30
- Developing new drug (Note 2)	40	20	60
Other deductible expenses	220	120	340
Adjusted profit	500	250	750
Less: Capital allowances			
- Trade-related Plant & Machinery	250	100	350
- S19B writing down allowance (Note 3)	8	4	12
Exempt income / Chargeable income before exempt amount	242	146	388

Note 1: Directly identifiable R&D expenses are matched against income generated from pioneer product X.

Note 2: These R&D expenses are treated as common expenses. They are allocated across the various tax categories using a reasonable basis such as turnover. For example, the computation for expenses on continuous improvements on manufacturing process is as follows:

$$\begin{aligned}\text{Exempt income} &= \$30,000 \times \$800,000 / \$1,200,000 \\ &= \$20,000\end{aligned}$$

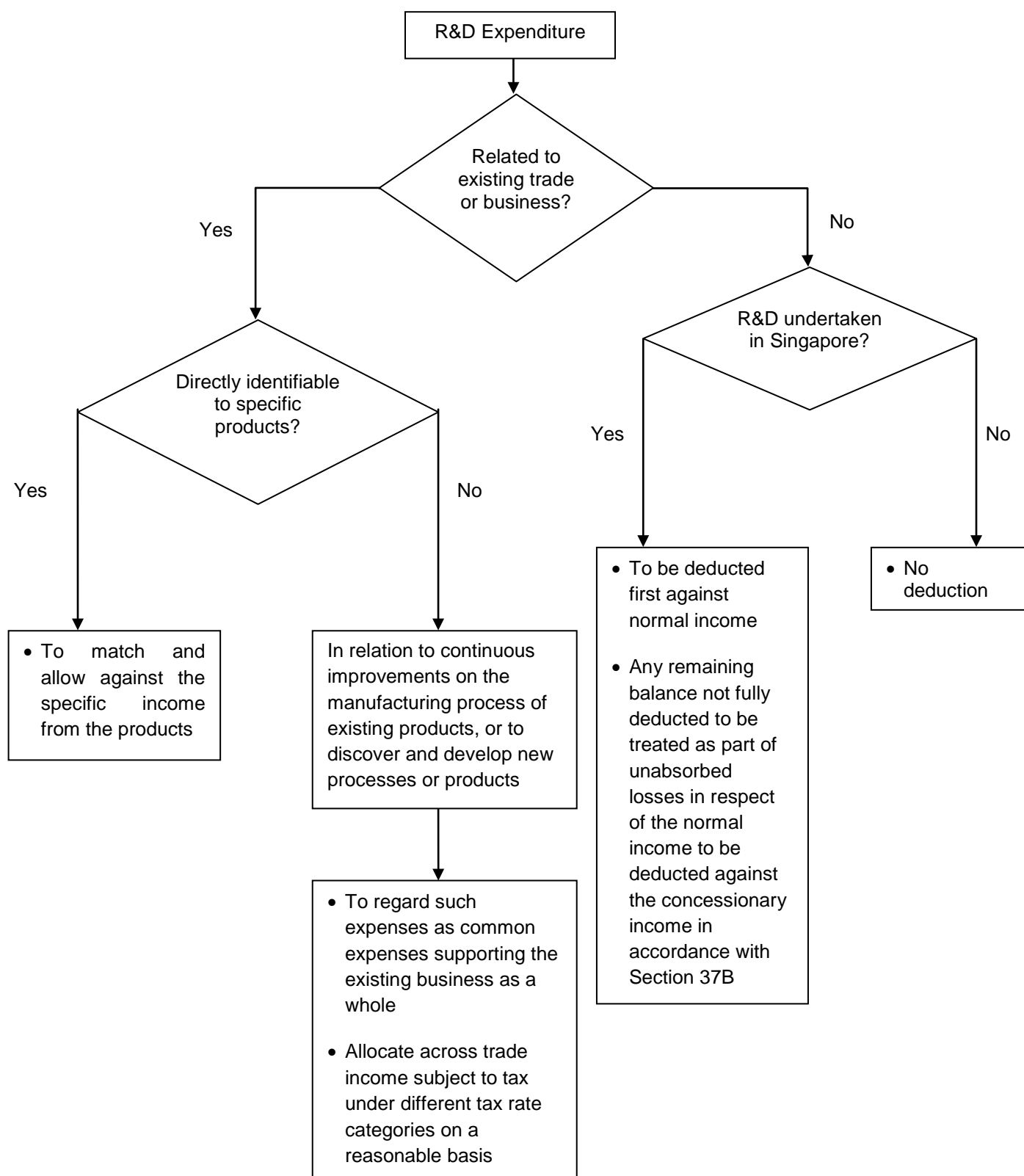
$$\begin{aligned}\text{Normal income} &= \$30,000 \times \$400,000 / \$1,200,000 \\ &= \$10,000\end{aligned}$$

Note 3: The WDAs in respect of expenditure incurred in acquiring IPR for new drugs are allocated across the various tax categories using a reasonable basis such as turnover. The computation of WDAs is as follows:

$$\begin{aligned}\text{Exempt income} &= (\$60,000 / 5) \times \$800,000 / \$1,200,000 \\ &= \$8,000\end{aligned}$$

$$\begin{aligned}\text{Normal income} &= (\$60,000 / 5) \times \$400,000 / \$1,200,000 \\ &= \$4,000\end{aligned}$$

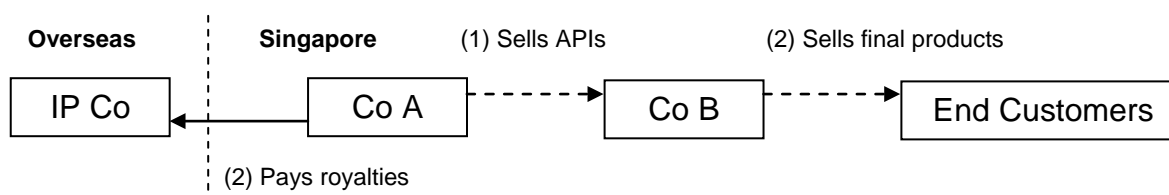
## Annex C – Flow Chart on Set-off Rules for R&D Expenditure



## Annex D – Deduction of Royalty Payments and Withholding Tax

Co A, Co B and IP Co are members of the same Group. Co A is a pharmaceutical company in Singapore which manufactures active pharmaceutical ingredients (“API”s). Its financial year end is 31 December. Co B is a secondary manufacturer which helps Co A formulate the APIs into final products for sale to end customers.

IP Co is an overseas entity which owns and manages the intellectual property rights for the Group. Co A has an agreement with IP Co whereby royalties are computed based on in-market sales of final products to end customers.



Date	Event
(1) 30 Nov 2010	Co A sells APIs to Co B and recognises the sales in its accounts when the APIs are shipped to Co B. At the same time, Co A recognises a specific provision for royalties payable to IP Co based on some reasonable estimates of the final sales by Co B to end customers.
(2) 31 Jan 2011	Co B sells the final products to end customers and recognises the sales in its books. At the same time, Co A's liability to pay royalties to IP Co crystallises. Co A pays royalties to IP Co and reverses the specific provision recognised in its books on 30 Nov 2010.

The relevant tax treatments for Co A are as follows:

- The specific provision for royalties payable to IP Co is **not** a deductible expense for YA 2011 because Co A has not incurred the expenditure. It has merely recognised an accounting obligation. Correspondingly, withholding tax is not applicable.
- The actual royalty payment to IP Co is deductible in YA 2012 as the amount has been incurred. Withholding tax must be made to IRAS by the 15th of the following month from the date of payment to IP Co. The reversal of specific provision is not taxable.