

CELEBRATING  
COMMERCIALISATION  
YEAR 2014

# iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention  
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& design  
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INNOVATEUR  
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2014

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UNIVERSITI TEKNOLOGI MARA  
MALAYSIA

*Bridging  
the valley of death :  
advancing the  
commercialisation  
of research*

RESEARCH BOOK

# iiindex2014

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innovation  
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## FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

Tan Sri Dato' Sri Sallehuddin Mohamed  
Pro-Chancellor, Universiti Teknologi MARA

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## ASSESSMENT OF THE HALAL STATUS OF RESPIRATORY PHARMACEUTICAL PRODUCTS IN A HOSPITAL

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Muslim communities in Malaysia are concerned with halal issues in their daily lives including medications. Respiratory pharmaceutical products or medications are among the most commonly used products in the community and hospital settings for ailments that include common cold, flu, asthma, chronic obstructive airway disease (COPD), other illness and infections that involve respiratory systems. Issue: References on halal status on specific medications are very limited. This could be a problem for health care professionals and patients to make decisions with regards to the choice of medication. Muslim patients have a right to know the status of their medication. Objective: Thus, the main objective of this study is to evaluate the halal status of respiratory medications in a hospital. Method: Assessment of the Halal Status Data on respiratory medications was conducted at the Drug Information Service (DIS), Department of Pharmacy, after getting the approval from the hospital administrator. Only data extracted from medication leaflets of respiratory medications were used for halal assessment. The information obtained was divided into two categories; active ingredients and excipients or inactive ingredients. An active ingredient is the main substance used to treat an illness, normally only one substance of the active ingredient present in a pharmaceutical product. Many pharmaceutical products have more than five excipients. While excipients are inactive substances that are added to the active ingredient to provide good physical quality such as tablet forming, diluents, flavoring and coloring agents and other Standard references Remington The Science and Practice of Pharmacy, 2005; Sigma Aldrich, updated 2012; British Pharmaceutical Codex, 1973 and British National Formulary, 2011) and others More than one substance was involved in the synthesis of each active ingredient They are considered halal if each of the substance involved does not originate from animal source and the final products do not contain alcohol. Result: Total respiratory pharmaceutical products available in this hospital during the period of the study were 132; out of this, only 11.4 % were halal, followed by 6.8% and 14.0% which were haram and mushbooh respectively. More than half of the products (72.7%) were considered as an unknown status . Haram medications were due to the presence of ethanol or animal origin. Mushbooh castor oil is an inactive ingredient that originates from plant but the preparation of castor oil contains up to 10% fixed oil which originated either from plant or animal or both sources Lactose (inactive ingredient) is a halal substance because it originates from milk but some of the preparation processes involved the use of bones or bone related substances. Fatty substances and insufficient information: Magnesium stearate, propylene glycol, polysorbate, raspberry favour, norflurane, beclomethasone dipropionate betamethasone disodium phosphate and budesonide. Most medications cannot be assessed due to incomplete data for assessment or no information available for the assessment of the halal status. Conclusion: Only small portion of the products were able to be categorized as haram due to incomplete information on ingredients and limited information. In order to ensure Muslims receive halal medications: Health Care professionals and community should be educated and support gained from the government, non-government bodies or associations.