



# **Pharmacy Information System (PhIS) and Clinic Pharmacy System (CPS)**

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## **Pharmacy Based User Manual Radiopharmaceuticals**

<b>Version</b> : 12 <sup>th</sup> Edition <b>Document ID</b> : PB_U.MANUAL_RADIOPHARMACEUTICALS
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*Reference ID : PB\_U. MANUAL\_RADIOPHARMACEUTICALS-12<sup>th</sup> E*

*Application reference: PhIS & CPS v2.5*



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## 1.0 Introduction

### 1.1 Overview of PhIS

Pharmacy Information System or better known as PhIS is a complete and comprehensive system that integrates pharmacy related services that geared toward pharmacy excellence. This implementation would transform most of the current manual process to electronic system would benefit facility end user in the health care sector.

There are 12 modules to assist service delivery by the health care sector which comprises of:

1. Order Management
2. Inpatient Pharmacy
3. Outpatient Pharmacy
4. Medication Counselling
5. Ward Pharmacy
6. Pharmacy Inventory
7. Manufacturing of Cytotoxic Drug Reconstitution (CDR), Parenteral Nutrition (PN), IV Admixture & Eye Drop, Radiopharmaceuticals and Extemporaneous
8. Adverse Drug Reaction & Drug Allergic Card (ADR & DAC)
9. Clinical Pharmacokinetics Services (TDM)
10. Drug Information & Consumer Education (DICE)
11. Medication Therapy Adherence Clinic (MTAC)
12. Data Mining (PhARM)

### 1.2 Purpose and Objectives

This user manual outlines the Radiopharmaceuticals module and its key features and functionalities. The primary objective is to guide users through the process of completing PhIS application process.

User will understand the following activities in details:

- Radiopharmaceuticals Appointment
- Radiopharmaceuticals Oder
- Radiopharmaceuticals Dispensing
- Radiopharmaceuticals Manufacturing

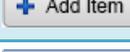
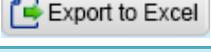
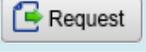
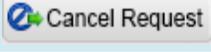
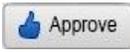
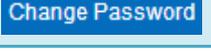
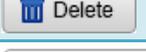
### 1.3 Organised Sections

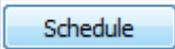
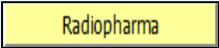
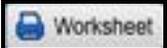
These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Radiopharmaceuticals
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

## 2.0 Application Standard Features

### 2.1 PhIS Legend

Standard Legend			
	Login to PhIS		Logout from PhIS
	Reset Login Screen		Expand Menu
	Display Home Tab		Expand Module
	Close All Open Tabs		Refresh Screen
	Add/Create New Record		Show Help
*	Mandatory Field		Calendar Icon
	Close Window		Radio Button
	Edit Record		Cancel
	Save		Add Item to the list
	Export and Open Report in Excel Format		Automatically Display/Retrieve Box
	Request for Approval		Cancel the Request
	Send for Approval		Approve Transaction
	Change Login Password		Collapse Menu
	Collapse Module		Search Record
	Print		Search Icon
<input type="checkbox"/>	Checkbox		Delete Record
	Delete Item from the list		Empty Text Box
	Dropdown Box		Reject Transaction

Module Legend			
	Schedule button		Confirmation button
	Consent form		Verification
	Preparation		Dispensing
	Submission Approval		Printing/Editing Label
	Radiopharmaceuticals		Calculation Activity Radiopharmaceuticals
	Generate the worksheet		Release Batch

**Note**

To learn more about Login Information, kindly click [Login Information](#) Modules for descriptive step.

### 3.0 Radiopharmaceuticals

#### Overview

This module will be used by the user at the

#### User Group

This module is intended for Doctor, Specialist and Pharmacist (subject to user assigned by the facility).

#### Functional Diagram

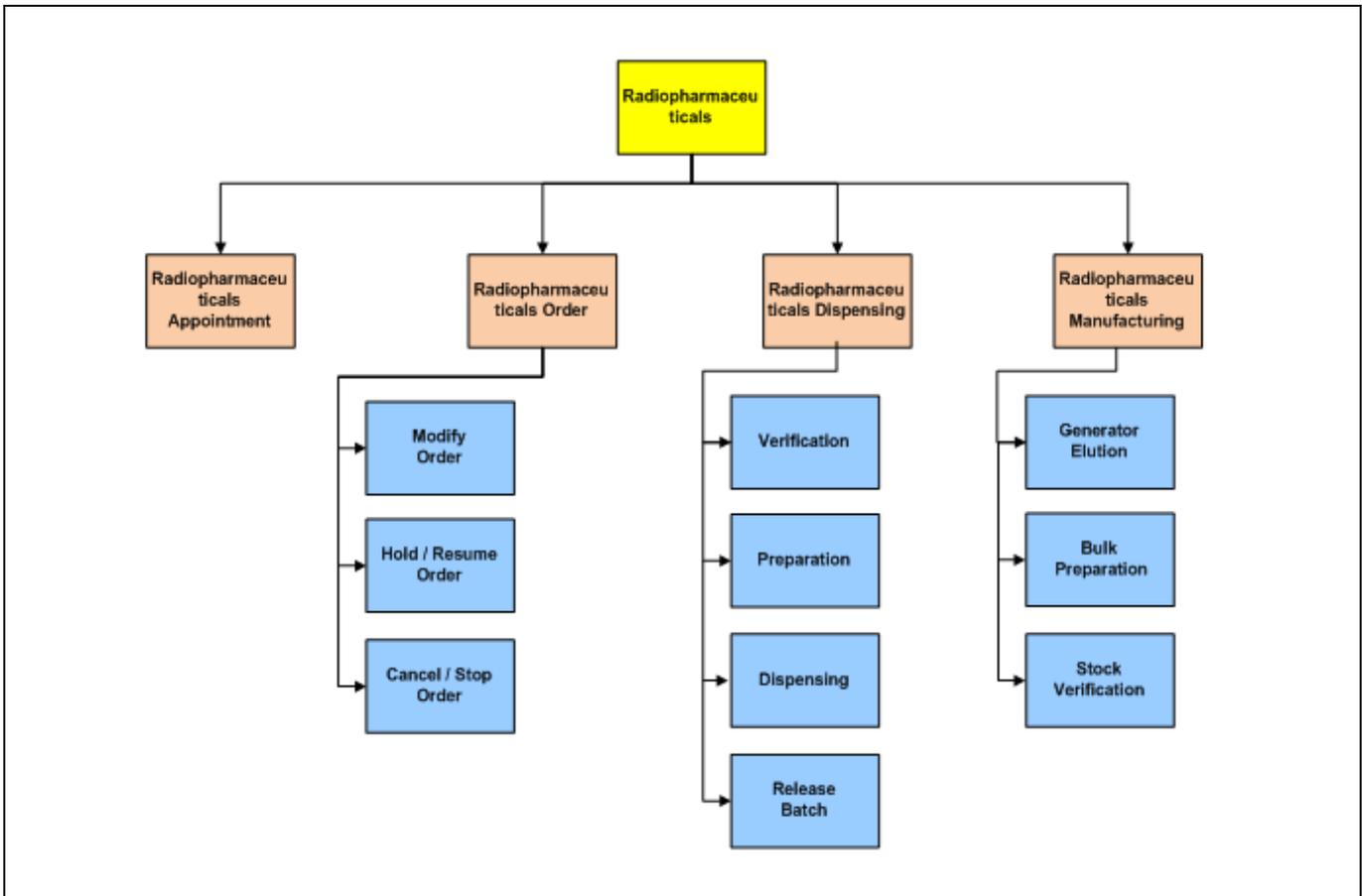


Figure 3.0-1

#### Functional Description

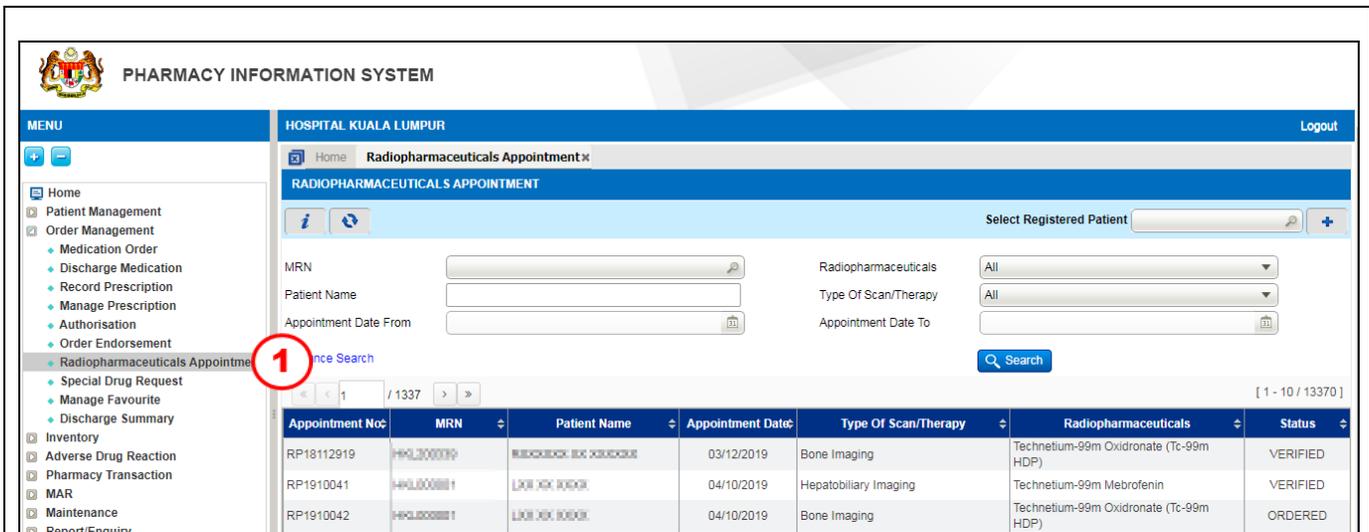
Slow Moving comprises of three (4) main functions:

- **Radiopharmaceuticals Appointment**  
This function allows user to create an Appointment for the patient
- **Radiopharmaceuticals Order**  
This function is used for user to create an order for Radiopharmaceutical
- **Radiopharmaceuticals Dispensing**  
This function allows user to dispense Radiopharmaceutical order
- **Radiopharmaceuticals Manufacturing**

## 3.1 Radiopharmaceuticals

### 3.1.1 Create New Appointment

Radiopharmaceuticals Appointment screen will allow user to create appointment for the purpose of scanning and therapy for patient.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Home Radiopharmaceuticals Appointment

**RADIOPHARMACEUTICALS APPOINTMENT**

Select Registered Patient

MRN:  Radiopharmaceuticals:

Patient Name:  Type Of Scan/Therapy:

Appointment Date From:  Appointment Date To:

[Advanced Search](#)

[ 1 - 10 / 13370 ]

Appointment No	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP18112919	HPL000009	RUDEKOROK, JOK XIBOXOXU	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HPL000001	LUR XOK IODOK	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HPL000001	LUR XOK IODOK	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED

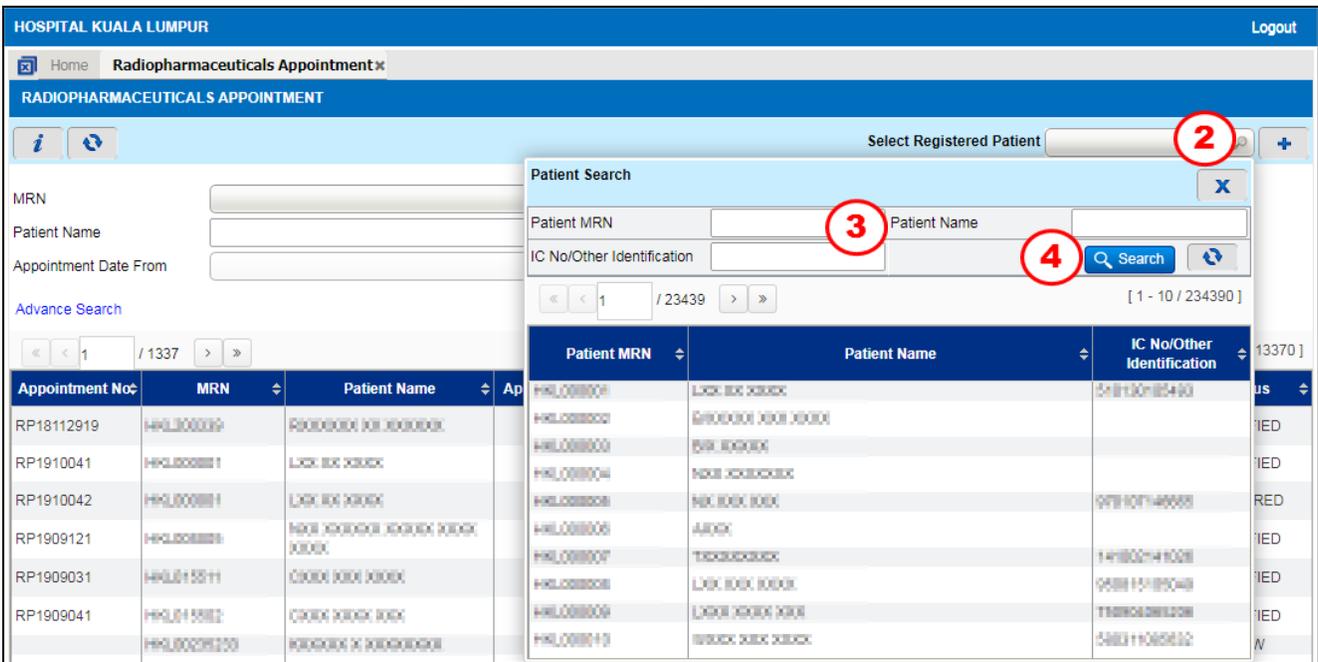
Figure 3.1-1 Radiopharmaceuticals Appointment Listing Page

#### STEP 1

Click on 'Order Management' and select 'Radiopharmaceuticals Appointment' sub-menu as per Figure 3.1-1

#### Note

- User have the options to view existing appointment records by clicking the check box :-
  - Show All
- Various search criteria is provided as below:
  - MRN
  - Radiopharmaceuticals
  - Patient Name
  - Appointment no
  - Status
  - Appointment Date From
  - Appointment Date To
- By default list of existing appointments will be displayed based on current system date
- Click on the [Advanced Search](#) hyperlink for advance search.



HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment x

RADIOPHARMACEUTICALS APPOINTMENT

Select Registered Patient 2

MRN

Patient Name

Appointment Date From

Advance Search

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Patient Search X

Patient MRN  3 Patient Name

IC No/Other Identification  4 Search

1 / 23439 [ 1 - 10 / 234390 ]

Patient MRN	Patient Name	IC No/Other Identification
HKL000001	LOK JAY XXXXX	5-8130-185493
HKL000002	SHOUDUN JAY XXXXX	
HKL000003	SH XXXXX	
HKL000004	NOE XXXXXXXX	
HKL000005	SH XXXXX	978107146008
HKL000006	ARXX	
HKL000007	TXXXXXXXXX	1-41802141028
HKL000008	LOK JAY XXXXX	958815185048
HKL000009	LOK JAY XXXXX	118804288208
HKL000010	SHOXX XXX XXXXX	588311088812

Figure 3.1.1-2 Radiopharmaceuticals Appointment

**STEP 2**

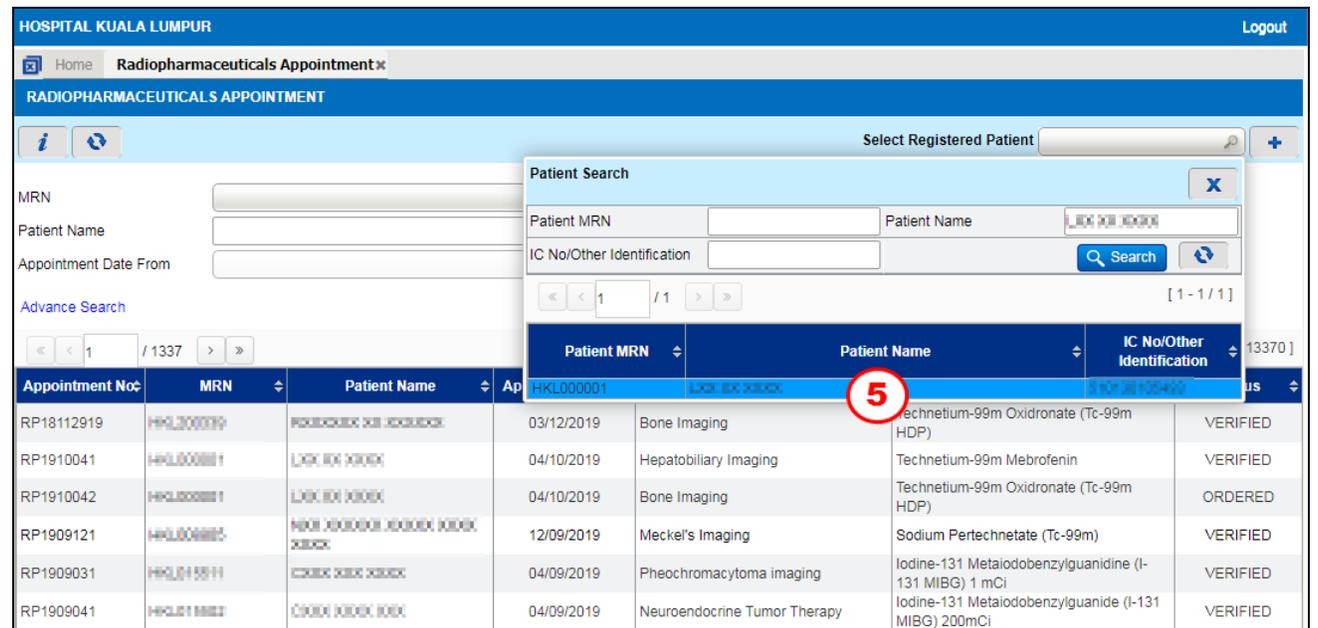
Click on the  button to search for registered patient and system will be displayed as per Figure 3.1.1-2

**STEP 3**

Enter patient name at 'Patient name' field

**STEP 4**

Click on Search button to search patient name and system will be displayed as per Figure 3.1.1-2



HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment x

RADIOPHARMACEUTICALS APPOINTMENT

Select Registered Patient +

MRN

Patient Name

Appointment Date From

Advance Search

1 / 1337

Patient Search X

Patient MRN  Patient Name

IC No/Other Identification  Search

1 / 1 [ 1 - 1 / 1 ]

Patient MRN	Patient Name	IC No/Other Identification
HKL000001	LOK JAY XXXXX	5-8130-185493

Appointment No	MRN	Patient Name	Ap	IC No/Other Identification	Status	
RP18112919	HKL000009	SHOUDUN JAY XXXXXXXX	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HKL000001	LOK JAY XXXXX	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HKL000001	LOK JAY XXXXX	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED
RP1909121	HKL000005	SHOUDUN JAY XXXXXXXX	12/09/2019	Meckel's Imaging	Sodium Pertechnetate (Tc-99m)	VERIFIED
RP1909031	HKL015511	LOK JAY XXXXX	04/09/2019	Pheochromacytoma imaging	Iodine-131 Metaiodobenzylguanidine (I-131 MIBG) 1 mCi	VERIFIED
RP1909041	HKL015502	LOK JAY XXXXX	04/09/2019	Neuroendocrine Tumor Therapy	Iodine-131 Metaiodobenzylguanide (I-131 MIBG) 200mCi	VERIFIED

Figure 3.1.1-3 Radiopharmaceuticals Appointment

**STEP 5**

Double click on the patient name and system will be displayed as per Figure 3.1.1-3

**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment x

**RADIOPHARMACEUTICALS APPOINTMENT** 6

Select Registered Patient: HKL000001

MRN:  Radiopharmaceuticals: All

Patient Name:  Type Of Scan/Therapy: All

Appointment Date From:  Appointment Date To:

Advance Search

[ 1 - 10 / 13370 ]

Appointment No.	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP18112919	HKL000006	XXXXXXXXXXXXXXXXXXXX	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HKL000001	LIXX XII XXXXX	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HKL000001	LIXX XII XXXXX	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED
RP1909121	HKL000001	XXXXXXXXXXXXXXXXXXXX	12/09/2019	Meckel's Imaging	Sodium Pertechnetate (Tc-99m)	VERIFIED

**Figure 3.1.1-4 Radiopharmaceuticals Appointment**

**STEP 6**

Click on  button to create new radiopharma appointment record and system will be displayed as per Figure 3.1.1-4

**RADIOPHARMACEUTICALS APPOINTMENT**

Mykad: XXXXXXXXXXXXXXXX Age: 68 Years 08 Months 09 Days Gender: Male MRN: HKL000001

Address:  Phone And Email:  Diagnosis:  Known Allergies:

Upload Photo

Type Of Scan/Therapy: **7** Bone Imaging

Radiopharmaceuticals: Technetium-99m Oxidronate (Tc-99m HDP)

Appointment Date: 09/10/2019

Patient Require Counselling:

Ordered By:  Dispense Location:

Ordered Date/Time: 08/10/2019 3:58 PM

Appointment No.:  Dosage: 17 mCi

Appointment Time: 14:15

Remarks:

**Figure 3.1.1-5 Radiopharmaceuticals Appointment**

**STEP 7**

Select **Type Of Scan/Therapy** from the drop down box and system will be displayed as per Figure 3.1.1-5

Type Of Scan/Therapy: **9** Bone Imaging

Radiopharmaceuticals: **9** Technetium-99m Oxidronate (Tc-99m HDP)

Appointment Date: 09/10/2019  **10**

Patient Require Counselling:  **11**

Ordered By:  Dispense Location:

Ordered Date/Time: 08/10/2019 3:58 PM

Appointment No.:  Dosage: 17 mCi **8**

Appointment Time: **12** 14:15

Remarks:

**Figure 3.1.1-6 Radiopharmaceuticals Appointment**

**Note**

After enter **Type of Scan/Therapy** field, **Radiopharmaceuticals** field will be automatically displayed as per Figure 3.1.1-6.

**STEP 8**

Enter **Amount** MBq field. The UOM displayed will be based on the Radiopharmaceuticals SKU in Drug Master

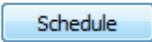
**STEP 9**

Select **Date** field for appointment

**Note**

**Date** field is mandatory field

**STEP 10**

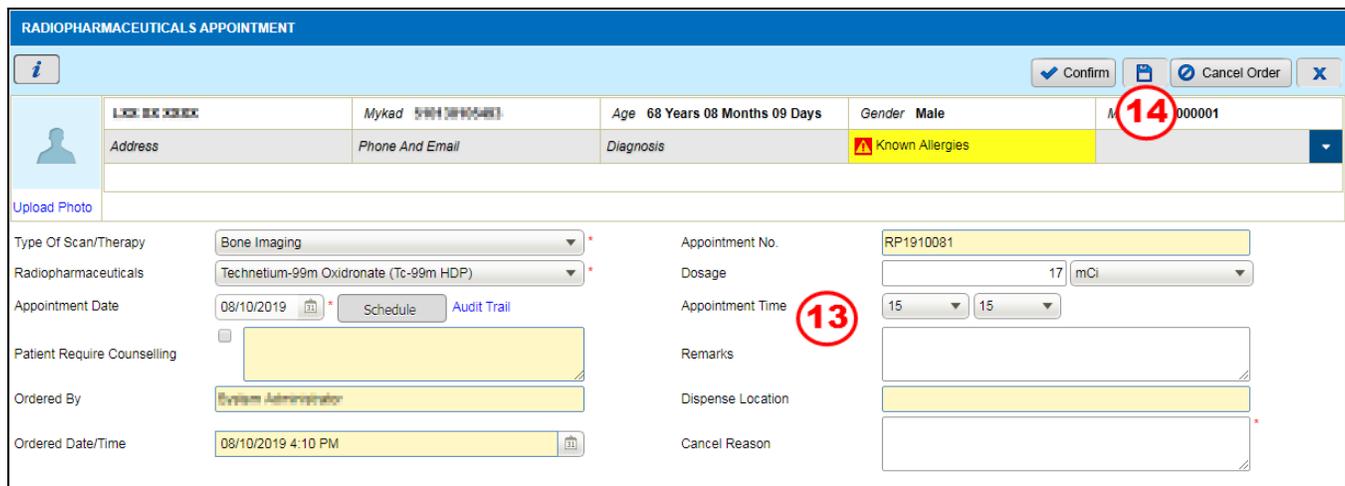
Click on the  button to check for available date for appointment

**STEP 11**

Check on the  **Counseling Indicator** checkbox if applicable

**STEP 12**

Select **Appointment Time** for appointment (hours and minutes) from the drop down box



**Figure 3.1.1-7 Radiopharmaceuticals Appointment**

**STEP 13**

Enter **Remarks** if applicable

**Note**

- **Ordered By** and **Ordered Date/Time** will automatically generate by system.
- **Dispense Location** will only be automatically generated in Medication Order Radiopharmaceuticals screen. Not in Radiopharmaceuticals screen.

**STEP 14**

Click on the save  button to save record and alert message will be displayed as per Figure 3.1.1-7

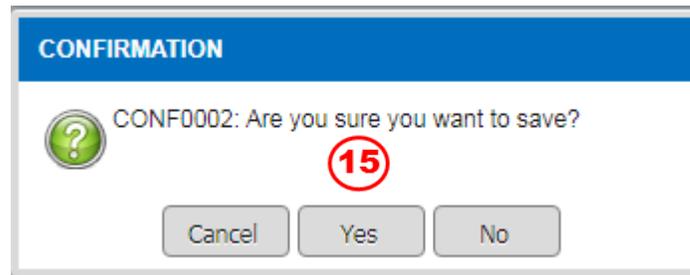
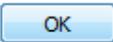


Figure 3.1.1-8 Save Record Alert Message

**STEP 15**

Click on the  button to generate number for scan appointment and alert message will be displayed as per Figure 3.1.1-8

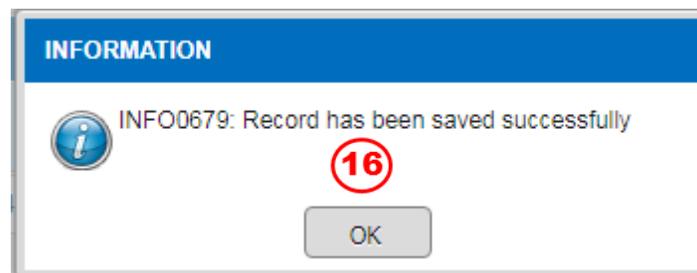
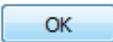


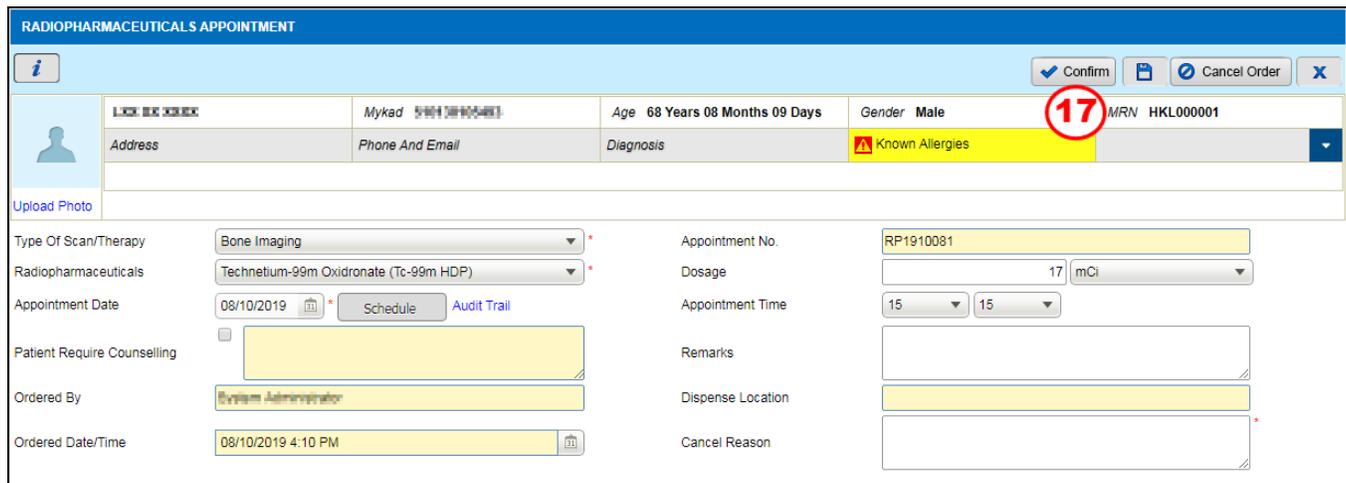
Figure 3.1.1-9 Save Record Alert Message

**STEP 16**

Click on the  button to save and update Radiopharmaceuticals Appointment order

**Note**

Record status is updated to Draft.

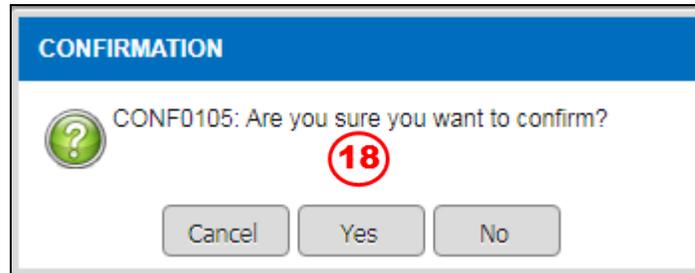


RADIOPHARMACEUTICALS APPOINTMENT					
<input type="button" value="i"/> <span style="float: right;"> <input type="button" value="Confirm"/> <input type="button" value="Save"/> <input type="button" value="Cancel Order"/> <input type="button" value="X"/> </span>					
	<input type="text" value="Mykad 5104 0800401"/>	Age 68 Years 08 Months 09 Days	Gender Male	<input type="text" value="MRN HKL000001"/>	<input type="button" value="17"/>
<input type="text" value="Address"/>	<input type="text" value="Phone And Email"/>	<input type="text" value="Diagnosis"/>	<input type="text" value="Known Allergies"/>	<input type="button" value="v"/>	
<input type="button" value="Upload Photo"/>					
Type Of Scan/Therapy	Bone Imaging *	Appointment No.	RP1910081		
Radiopharmaceuticals	Technetium-99m Oxidronate (Tc-99m HDP) *	Dosage	17 mCi		
Appointment Date	08/10/2019 * <input type="button" value="Schedule"/> <input type="button" value="Audit Trail"/>	Appointment Time	15 : 15		
Patient Require Counselling	<input type="checkbox"/>	Remarks	<input type="text"/>		
Ordered By	<input type="text" value="System Administrator"/>	Dispense Location	<input type="text"/>		
Ordered Date/Time	08/10/2019 4:10 PM <input type="button" value="i"/>	Cancel Reason	<input type="text"/>		

Figure 3.1.1-10 Radiopharmaceuticals Appointment

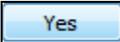
**STEP 17**

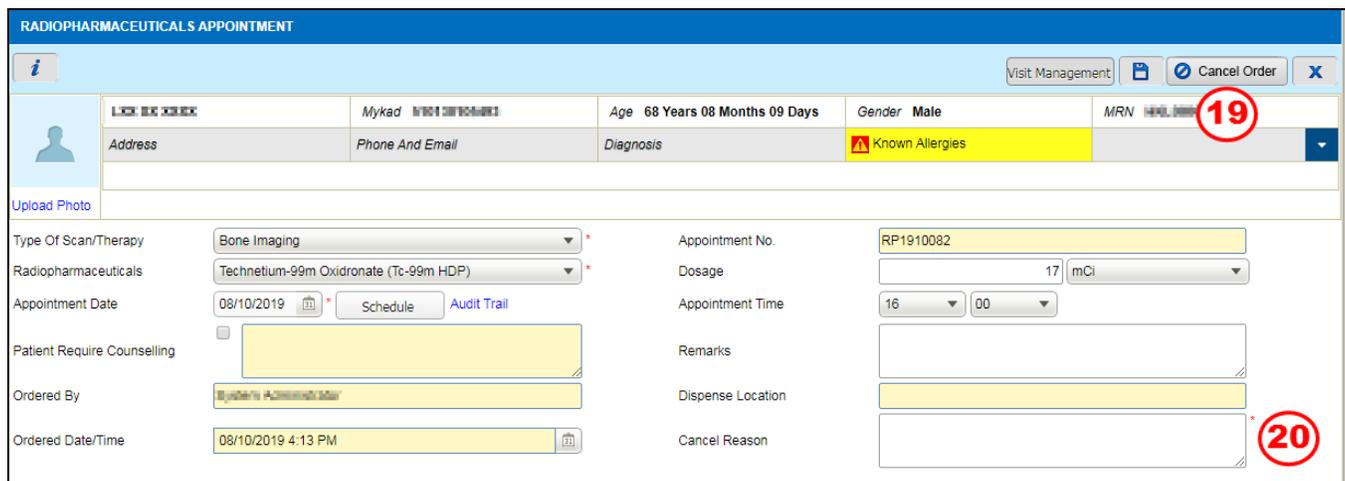
Click on the  button and system will display alert message as per Figure 3.1.1-11



**Figure 3.1.1-11 Confirm Order Alert Message**

**STEP 18**

Click on the  button to confirm order



The screenshot shows the "RADIOPHARMACEUTICALS APPOINTMENT" form. At the top right, there are buttons for "Visit Management", "Cancel Order", and a close button. The patient information section includes fields for "Mykad", "Age 68 Years 08 Months 09 Days", "Gender Male", and "MRN" (with a red circle and "19" next to it). Below this is a table with columns for "Address", "Phone And Email", "Diagnosis", and "Known Allergies". The main form area contains several fields: "Type Of Scan/Therapy" (Bone Imaging), "Radiopharmaceuticals" (Technetium-99m Oxidronate (Tc-99m HDP)), "Appointment Date" (08/10/2019), "Appointment No." (RP1910082), "Dosage" (17 mCi), "Appointment Time" (16:00), "Patient Require Counselling" (checkbox), "Remarks", "Ordered By" (System Administrator), "Dispense Location", "Ordered Date/Time" (08/10/2019 4:13 PM), and "Cancel Reason" (with a red circle and "20" next to it).

**Figure 3.1-12 Radiopharmaceuticals Appointment**

**STEP 19**

Click on the  button to cancel Radiopharmaceuticals Appointment

**STEP 20**

Enter cancel reason


PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR
Logout

**MENU**

- Home
- Patient Management
- Order Management
  - Medication Order
  - Discharge Medication
  - Record Prescription
  - Manage Prescription
  - Authorisation
  - Order Endorsement
- Radiopharmaceuticals
- Appointment
  - Special Drug Request
  - Manage Favourite
  - Discharge Summary
- Inventory
- Adverse Drug Reaction

Home Radiopharmaceuticals Appointment

**RADIOPHARMACEUTICALS APPOINTMENT**

MRN

Patient Name

Appointment Date From

Radiopharmaceuticals

Type Of Scan/Therapy

Appointment Date To

Select Registered Patient

Advance Search

[ 1 - 2 / 2 ]

Appointment No	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP1910081	HKL000001	LX08 XX 0000X	08/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	DRAFT
RP1910082	HKL000001	LX08 XX 0000X	08/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	NEW

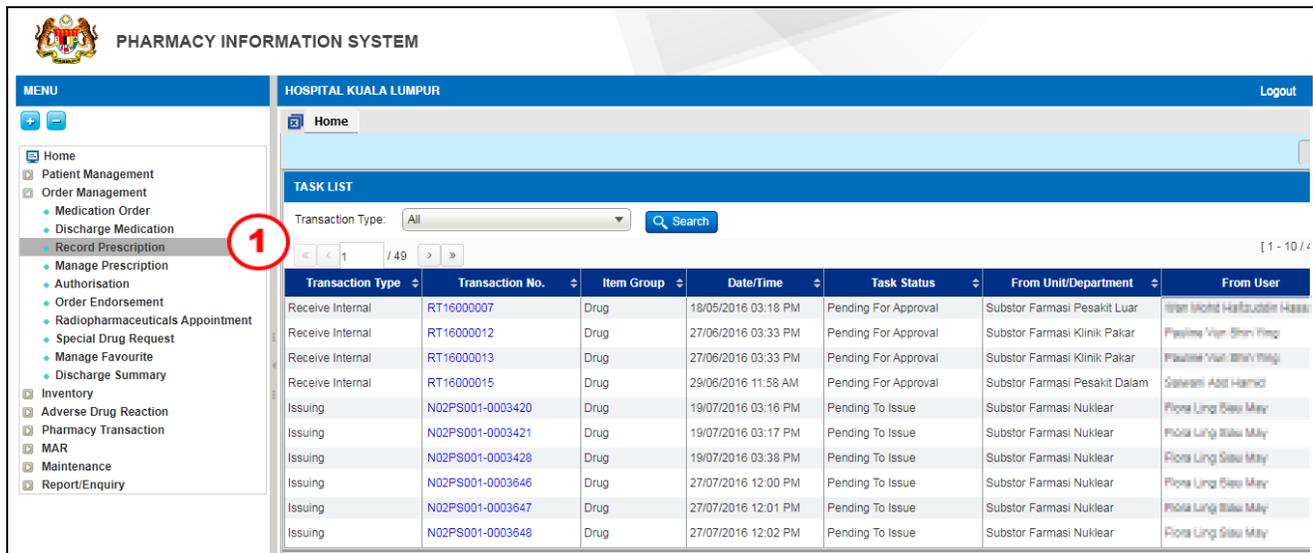
**Figure 3.1.1-13 Radiopharmaceuticals Appointment**

**Note**

Record status is updated to New as per Figure 3.1.1-13.

### 3.2 Search Registered Patient

To view an existing patient record, please perform the steps below.



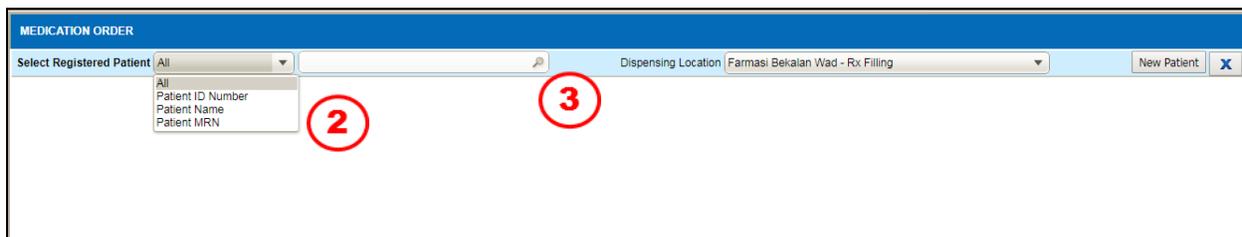
The screenshot shows the PhIS Home page for Hospital Kuala Lumpur. On the left is a 'MENU' sidebar with 'Record Prescription' highlighted and circled in red with a '1'. The main area shows a 'TASK LIST' table with columns: Transaction Type, Transaction No., Item Group, Date/Time, Task Status, From Unit/Department, and From User. The table contains several rows of transaction data.

Figure 3.2-1 PhIS Home page

This page is used to search for a registered patient

#### STEP 1

Click on 'Order Management' menu followed by 'Record Prescription' and screen will be displayed as per Figure 3.1-1



The screenshot shows the 'MEDICATION ORDER' form. The 'Select Registered Patient' dropdown is set to 'All' and is circled in red with a '2'. The search button (magnifying glass icon) is circled in red with a '3'. The 'Dispensing Location' is set to 'Farmasi Bekalan Wad - Rx Filling'.

Figure 3.2-2 Medication Order

#### STEP 2

Select registration type from dropdown box

#### STEP 3

Click on the  button to search for a registered patient based on the type selected

#### Note

If the patient is not registered, click on the  button and the 'Patient Registration' screen will be displayed.

**MEDICATION ORDER**

Select Registered Patient: All | Dispensing Location: Farmasi Klinik Pakar | New Patient X

Patient Search [1 - 10 / 234394]

MRN	ID Number	Patient Name
HKL1798229	888423728328	888423728328
HKL228475	551826025073	551826025073
HKL2018237	178215140208	8881211895728
HKL254362	888900710888	888900710888
HKL088421	681132182068	681132182068
HKL281088	731124008935	731124008935
HKL157549	731227138288	731227138288
HKL154319	798100138115	798100138115
HKL188432	848325148251	848325148251
HKL213873	888800881118	888800881118

Figure 3.2-3 Search Patient

**STEP 4**

Double-click on the selected patient and the details will be displayed as per Figure 3.1-4

**Note**

- Click on the 'Renew Visit' hyperlink to renew a visit for the same location.
- Select the 'Visit Type' and 'Location' to create a new visit.
- Click on the  button to access to 'Visit Management' screen.

**MEDICATION ORDER**

Select Registered Patient: All | HKL00001 | Dispensing Location: Farmasi Klinik Pakar | New Patient X

Mykad:  Age: 65 Years 08 Months 11 Days | Gender: Male | MRN: HKL00001

Address:  | Phone And Email:  | Diagnosis:  | Known Allergies:

Height: 150 cm | Weight: 65 kg | BMI/BSA: 20.1 / 1.8 m<sup>2</sup> | GSPD:  | Update (Last Updated: 19/12/2018) | Nationality: Warganegara

Medication Profile | VAS History | Counseling history | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

**VISIT/ADMISSION**

Encounter No:  | Visit Type: Outpatient | Location:  | Department:  | Clear | Save | Visit Management | Patient Label | Patient sticker

Full Paying Patient

Encounter No	Visit/Admission Date	Visit Type	Renew Visit	Visit Location	Department	Discharge Date
0002	10/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0004	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0010	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	

**PARTIAL SUPPLY**

Order Date	Order Location	Visit Type	Department	Prescription No.	Original Prescription No.	Next Collection Date	Next Collection Mode	Dispense Location
No Records Found!								

Figure 3.2-4 Medication Order Screen

**MEDICATION ORDER**

Select Registered Patient: All | HKL000001 | Dispensing Location: Farmasi Klinik Pakar | [View Patient]

MyKad: [MyKad] | Age: 68 Years 08 Months 11 Days | Gender: Male | I/RN: HKL000001  
 Address: [Address] | Phone And Email: [Phone And Email] | Diagnosis: [Diagnosis] | Known Allergies: [Known Allergies]  
 Height: 150 cm | Weight: 65 kg | BMI/BSA: 20.1 / 1.8 m<sup>2</sup> | GSPD: [GSPD] | Update (Last Updated: 18/12/2018) | Nationality: Warganegara

Medication Profile | VAS History | Counseling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

**VISIT/ADMISSION**

Encounter No: [Encounter No] | Visit Type: Outpatient | Location: [Location] | Department: [Department] | [Clear] [Save] [Visit Management] [Patient Label] [Patient Sticker]

Full Paying Patient

Encounter No	Visit/Admission Date	Visit Type	Renew Visit	Visit Location	Department	Discharge Date
0002	10/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0004	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0010	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	

**PARTIAL SUPPLY**

Order Date	Order Location	Visit Type	Department	Prescription No.	Original Prescription No.	Next Collection Date	Next Collection Mode	Dispense Location
No Records Found!								

Figure 3.2-5 Visit/Admission Detail

**STEP 5**

Double-click on the selected visit and the details will be displayed as per Figure 3.1-6

**MEDICATION ORDER**

Select Registered Patient: All | HKL00232255 | Dispensing Location: Farmasi Klinik Pakar | [View Patient]

MyKad: [MyKad] | Age: 32 Years 25 Days | Gender: Male | I/RN: HKL00232255  
 Address: [Address] | Phone And Email: [Phone And Email] | Diagnosis: [Diagnosis] | No known Allergies  
 Height: [Height] cm | Weight: [Weight] kg | BMI/BSA: 0.0 m<sup>2</sup> | GSPD: [GSPD] | Update (Last Updated: ) | Nationality: Warganegara

Medication Profile | VAS History | Counseling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

**VISIT/ADMISSION**

Encounter No: 0004 | Visit Type: Outpatient | Location: Klinik Dermatologi | Department: Dermatology | [Clear] [Visit Management] [Patient Label] [Patient Sticker]

**VISIT RECORD**

Queue Series: Normal | Queue No: [Queue No] | Original Prescription Serial Number: [Original Prescription Serial Number] | Clinic TCA: [Clinic TCA]

**NORMAL ORDER - DRUG DETAILS**

Patient Diagnosis: [Patient Diagnosis]  
 Allergy: [Allergy]  
 Adverse Drug Reaction: [Adverse Drug Reaction]  
 Nutritional Assessment: [Nutritional Assessment]  
 Normal Order: [Normal Order]  
 Infusion Order: [Infusion Order]  
 Parenteral Nutrition: [Parenteral Nutrition]  
 Outbreak Drug Reconciliation: [Outbreak Drug Reconciliation]  
 Therapeutic Drug Monitoring: [Therapeutic Drug Monitoring]  
 Radiopharmaceuticals: [Radiopharmaceuticals]

Original Prescriber Name: [Original Prescriber Name]  
 Drug: [Drug]  
 Doseage: [Doseage]  
 Admin Route: [Admin Route]  
 Frequency: [Frequency] | Doseage Schedule: [Doseage Schedule]  
 Duration: [Duration]  
 Start Date / Time: 10/10/2019 11:20 AM  
 End Date / Time: 10/10/2019 11:20 AM  
 Order Quantity: [Order Quantity]  
 Drug Indication: [Drug Indication]  
 Drug Remarks: [Drug Remarks]  
 Available Qty: [Available Qty]

Advanced Search: [Advanced Search]  
 Own Medication  
 Ward Stock  
 Patient Require Counseling

Total Price: RM 0.00

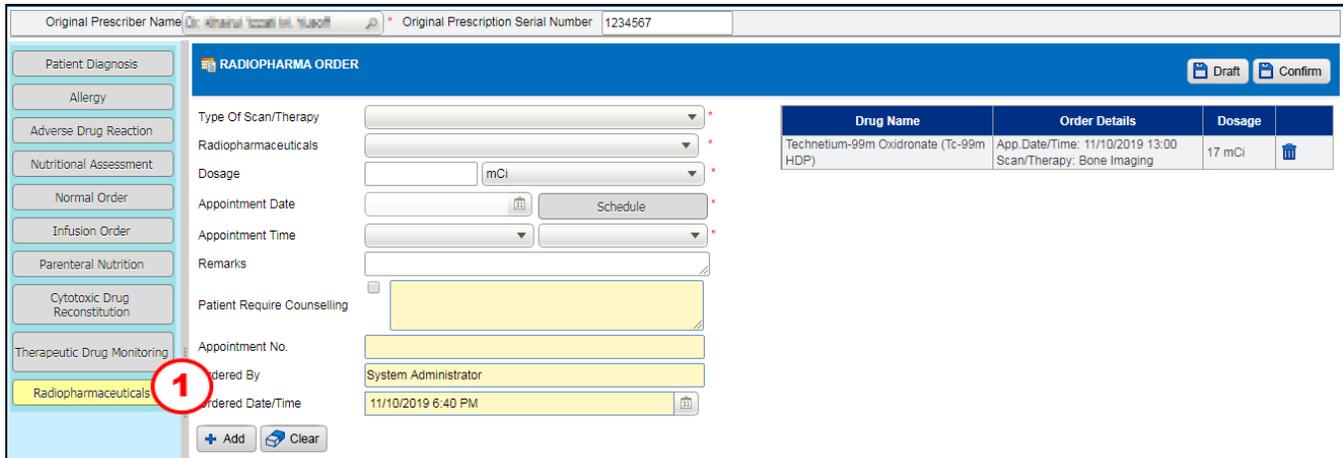
Alert	Drug Name	Order Details	Order Qty	Drug Info

[Add] [Modify] [Clear]

Figure 3.2-6 Medication Order Detail

### 3.3 Radiopharmaceuticals

Order Medication order for Radiopharmaceuticals screen will allow user to Confirm radiopharmaceuticals order



Drug Name	Order Details	Dosage
Technetium-99m Oxidronate (Tc-99m HDP)	App.Date/Time: 11/10/2019 13:00 Scan/Therapy: Bone Imaging	17 mCi

Figure 3.3-1 Medication Order –Radiopharmaceuticals

#### STEP 1

Click on the **Radiopharmaceuticals** button to display Radiopharmaceuticals medication order screen as per Figure 3.3-1

#### Note

##### Current Apoinment section :

This section will automatically display appointment records created in Appointment screen (if any). Only appointment records with 'New' status is displayed in this section.

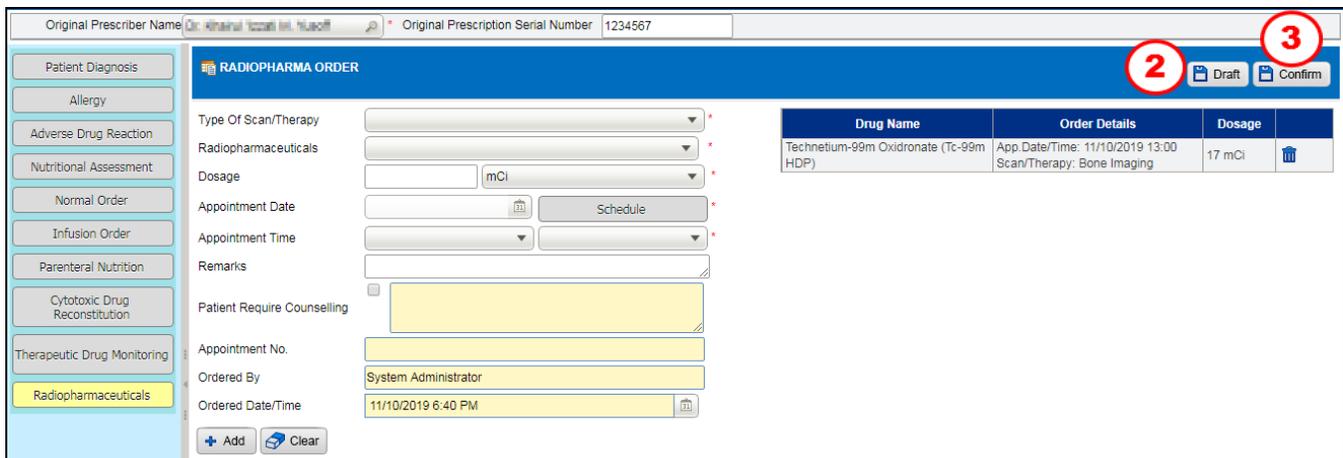


Figure 3.3-2 Medication Order -Radiopharmaceuticals

#### STEP 2

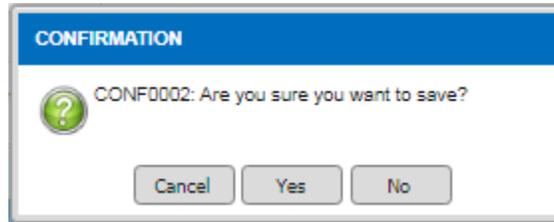
Click on the **Draft** button to save record and alert message will be displayed as per Figure 3.3-3

#### STEP 3

Click on the **Confirm** button to confirm the record and alert message will be displayed as per Figure 3.3-4

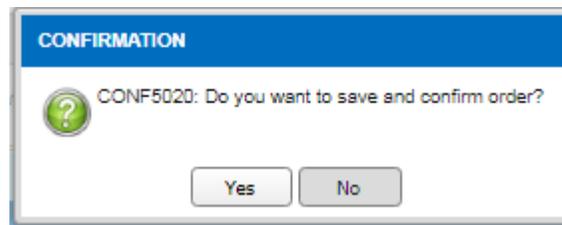
**Note**

- Alert message will be displayed *be displayed after save the record.*



**Figure 3.3-3 Alert Message**

- Alert message will be displayed *be displayed after confirm the record.*

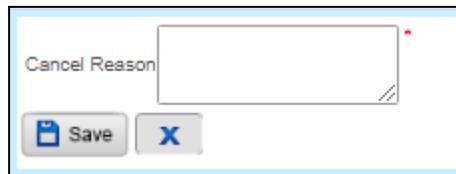


**Figure 3.3-4 Alert Message**

**Note**

**Cancel function:**

- *Cancel is an optional function.*
- Click on the  button to delete radiopharmaceuticals order
- *Need to enter cancel reason once user click cancel function:*

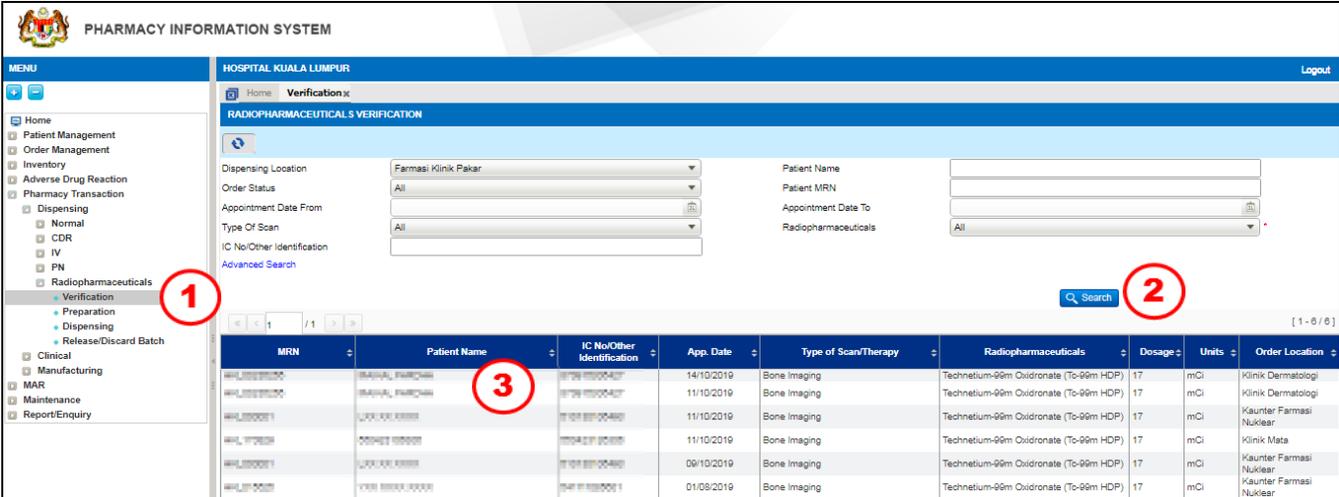


**Figure 3.3-5 Cancel Order**

- *Once confirm the order, drug details will auto appear in screening stage*

### 3.4 Radiopharmaceuticals Verification

Radiopharmaceuticals Verify screen allow user to screen prescription details and verify order.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Logout

Home Verification.x

**RADIOPHARMACEUTICALS VERIFICATION**

Dispensing Location: Farmasi Klinik Pakar

Order Status: All

Appointment Date From: [ ]

Type Of Scan: All

IC No/Other Identification: [ ]

Advanced Search

Patient Name: [ ]

Patient MRN: [ ]

Appointment Date To: [ ]

Radiopharmaceuticals: All

Search [ ]

[ 1 - 6 / 6 ]

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
HL1000000	ISMAIL, FAROUK	8756 8000427	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
HL1000000	ISMAIL, FAROUK	8756 8000427	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
HL1000001	LIOW, KULRANI	8756 8000480	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HL1000000	OSMAN, ROSDI	8756 8000480	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
HL1000001	LIOW, KULRANI	8756 8000480	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HL1000000	LIOW, KULRANI	8756 8000480	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4-1 Radiopharmaceuticals Verification Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

#### Note

- Various search criteria is provided as below:
  - Dispense Location
  - Patient Name
  - Order Status
  - Patient MRN
  - Appointment Date From
  - Appointment Date To
  - Type of Scan
  - Radiopharmaceuticals
  - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the  button and system will display related order

#### STEP 3

Double click on the selected patient record and system will display Radiopharmaceuticals Verification screen as per Figure 3.4-2

Encounter No: 0010 Actual Visit Date: 11/10/2019 Visit Location: Kaunter Farmasi Nuklear Rx No: FKP0000741017 Order By: System Administrator Transcribed By: System Administrator  
Original Prescription Serial No: 1234567

PRESCRIPTION								Verify
Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status		
Technetium-99m Oxidronate (Tc-99m HDP)	App Date/Time: 11/10/2019 13:00 Scan/Therapy: Bone Imaging	<input type="checkbox"/> Details	17 mCi	0 mCi	Remarks	Ordered	4	

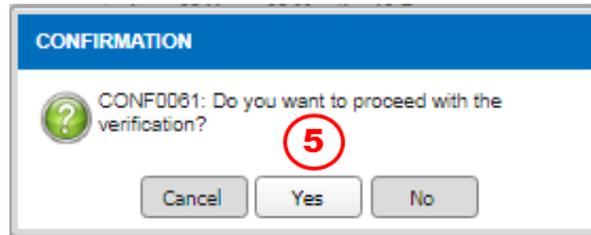
**Figure 3.4-2 Radiopharmaceuticals Verification**

**STEP 4**

Click on  button to verify order

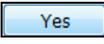
**Note**

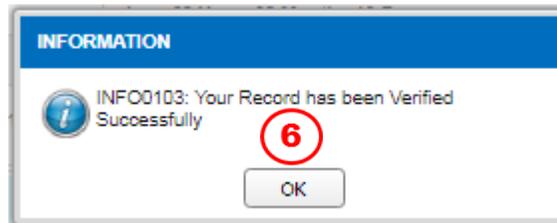
- **Drug Counselling** column is an optional function.
- Choose **Yes** if the patient need counselling or **No** if the patient do not need counselling.



**Figure 3.4-3 Information Alert Message**

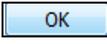
**STEP 5**

Click on the  button to proceed with the verification



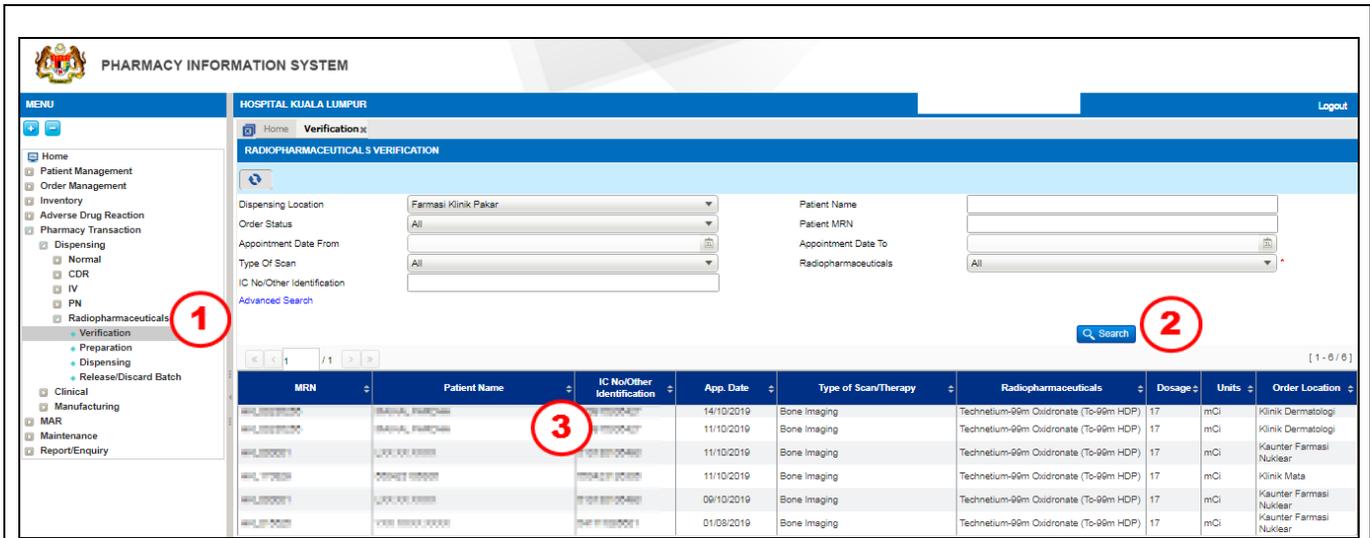
**Figure 3.4-4 Verify Order Alert Message**

**STEP 6**

Click on the  button to verify successfully

### 3.4.1 Intervention

Radiopharmaceuticals verification screen will allow user to verify prescription, before preparation and dispensing stage



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Logout

Home Verification.x

**RADIOPHARMACEUTICALS VERIFICATION**

Dispensing Location: Farmasi Klinik Pakar

Order Status: All

Appointment Date From: [ ]

Type Of Scan: All

IC No/Other Identification: [ ]

Advanced Search

Patient Name: [ ]

Patient MRN: [ ]

Appointment Date To: [ ]

Radiopharmaceuticals: All

Search [ ]

[ 1 - 6 / 6 ]

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
HL0000000	ISMAIL, FAROUK	980000000	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
HL0000000	ISMAIL, FAROUK	980000000	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
HL0000001	LIUK, KULRISSE	980000000	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HL0000000	OSMAN, ROSDI	980000000	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
HL0000001	LIUK, KULRISSE	980000000	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HL0000000	LIUK, KULRISSE	980000000	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4.1-1 Radiopharmaceuticals Verification Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

#### Note

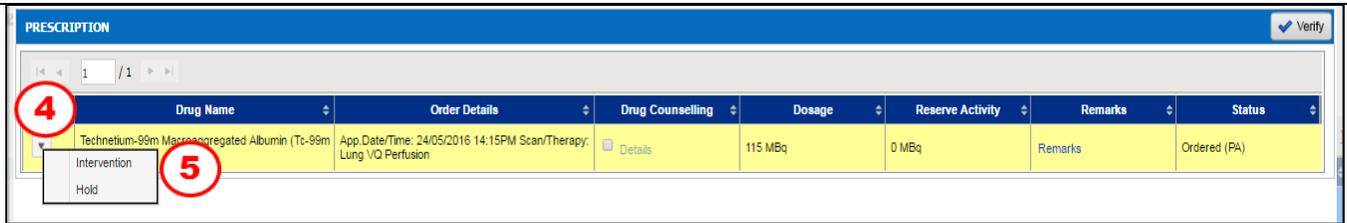
- Various search criteria is provided as below:
  - Dispense Location
  - Patient Name
  - Order Status
  - Patient MRN
  - Appointment Date From
  - Appointment Date To
  - Type of Scan
  - Radiopharmaceuticals
  - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the  button and system will display related order

#### STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Verification screen as per Figure 3.3.1-2



Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Technetium-99m Macroaggregated Albumin (Tc-99m)	App.Date/Time: 24/05/2016 14:15PM Scan/Therapy: Lung V/Q Perfusion	<a href="#">Details</a>	115 MBq	0 MBq	Remarks	Ordered (PA)

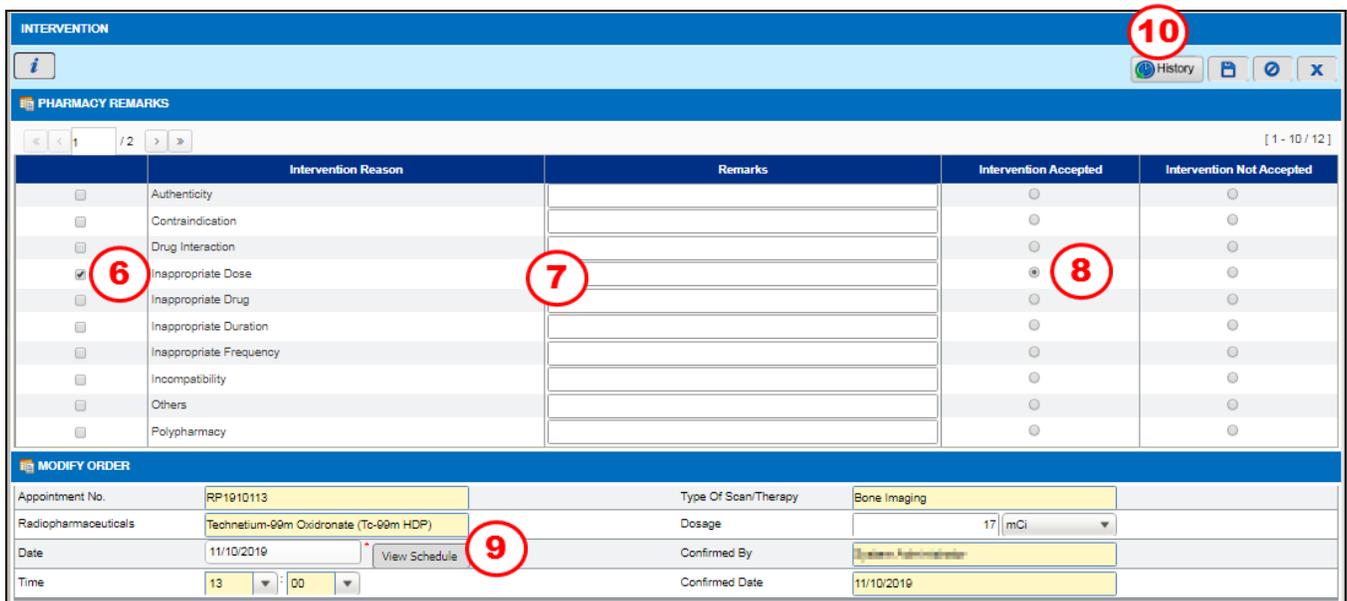
Figure 3.4.1-2 Radiopharmaceuticals Verification Listing Page

**STEP 4**

Right click in the  button to select either **Intervention** or **Hold Order** as per Figure 343.1-2

**STEP 5**

Click on the  button to modify drug details



Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
<input type="checkbox"/> Authenticity		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Contraindication		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Drug Interaction		<input type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Inappropriate Dose		<input checked="" type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Inappropriate Drug		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Inappropriate Duration		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Inappropriate Frequency		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Incompatibility		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Others		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Polypharmacy		<input type="radio"/>	<input type="radio"/>

MODIFY ORDER			
Appointment No.	RP1910113	Type Of Scan/Therapy	Bone Imaging
Radiopharmaceuticals	Technetium-99m Oxidronate (Tc-99m HDP)	Dosage	17 mCi
Date	11/10/2019 	Confirmed By	System Administrator
Time	13:00	Confirmed Date	11/10/2019

Figure 3.4.1-3 Radiopharmaceuticals Intervention

**STEP 6**

Select **Intervention Reason** from list.

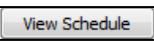
**STEP 7**

Enter **Remarks** if applicable.

**STEP 8**

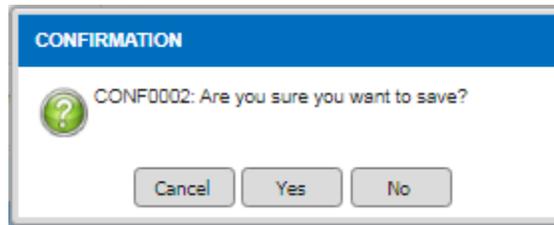
Select **Intervention Status** radio button either **Accepted** or **Not Accepted** and edit **Amount** field

**STEP 9**

Click on the  button check appointment if fully booked for a particular date.

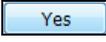
**STEP 10**

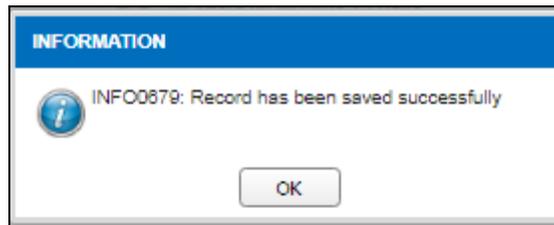
Click on the  button to save intervention record and alert message will display as per Figure 3.4.1-4.



**Figure 3.4.1-4 Save record Alert Message**

**Note**

- Click on the  button to save intervention record.



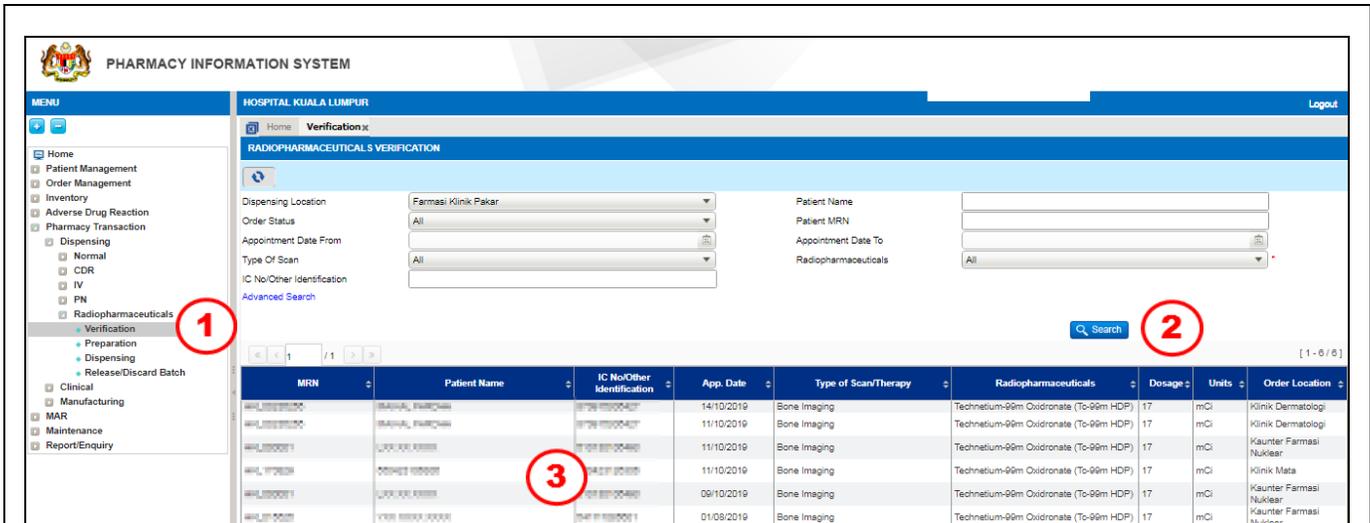
**Figure 3.4.1-5 Modify Order Alert Message**

**Note**

- Click on the  button to save modify order record.

### 3.4.2 Hold/Resume Order

Radiopharmaceuticals verification screen allow user to hold order and add reason for hold. User able to resume the order.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Log out

Home Verification

**RADIOPHARMACEUTICALS VERIFICATION**

Dispensing Location: Farmasi Klinik Pakar  
 Order Status: All  
 Appointment Date From:   
 Type Of Scan: All  
 IC No/Other Identification:   
 Advanced Search

Patient Name:   
 Patient MRN:   
 Appointment Date To:   
 Radiopharmaceuticals: All

Search

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
141102019	BANJAL, FAROUH	8726 8700407	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
111102019	BANJAL, FAROUH	8726 8700407	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
111102019	CHONG, BOON	8726 8700407	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
091102019	CHONG, BOON	8726 8700407	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
01082019	CHONG, BOON	8726 8700407	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4.2-1 Radiopharmaceuticals Verification Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

#### Note

Various search criteria is provided as below:

- Dispense Location
- Patient Name
- Order Status
- Patient MRN
- Appointment Date From
- Appointment Date To
- Type of Scan
- Radiopharmaceuticals
- IC No/Other Identification

#### STEP 2

Click on the  button and system will display related order

#### STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Verification screen as per Figure 3.4.2-2

PRESCRIPTION								Verify
Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status		
Technetium-99m Macroaggregated Albumin (Tc-99m)	App.Date/Time: 24/05/2016 14:15PM Scan/Therapy: Lung V/Q Perfusion	Details	115 MBq	0 MBq	Remarks	Ordered (PA)		

Figure 3.4.2-2 Radiopharmaceuticals Verification Listing Page

**STEP 4**

Right click in the  button to select either **Intervention** or **Hold Order**

**STEP 5**

Click on the  button to hold order

**HOLD ORDER - PHARMACIST REMARKS**

Hold Reason

Hold Remarks

Figure 3.4.2-3 Hold Order – Pharmacist Remarks

**STEP 6**

Select the **Hold Reason** from dropdown box:

- Authenticity
- Contraindication
- Drug Interaction
- Inappropriate Dose
- Inappropriate Drug
- Inappropriate Duration
- Inappropriate Frequency
- Incompatibility
- Intervention
- Others
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

**STEP 7**

Enter **Hold Remarks** field. Click on the  button to hold order and alert message will display as per Figure 3.3.2-3

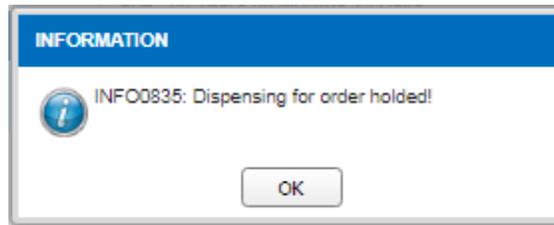
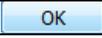


Figure 3.4.2-4 Information Alert Message



Figure 3.4.2-5 Radiopharmaceuticals Verification

**Note**

- Click on the  button to hold order.
- The  button is to cancel the entered data.
- Click on the  button to close Hold Order – Pharmacist Remarks screen.
- Status will change to Ordered Hold.
- Click on the  link to resume order as per Figure 3.3.2-6.

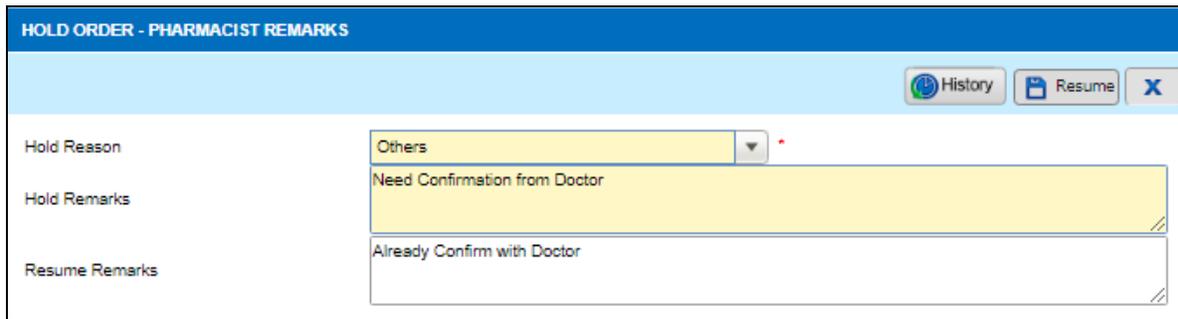
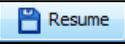
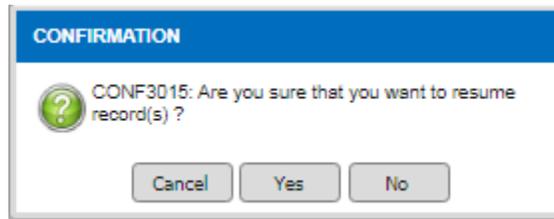


Figure 3.4.2-6 Hold Order – Pharmacist Remarks

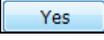
**Note**

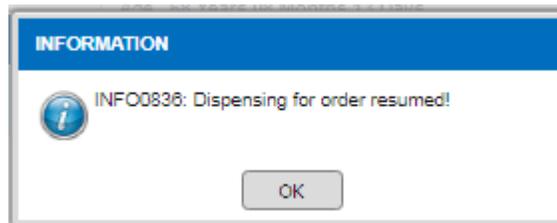
- Enter reason at **Resume Remarks** field
- Click on the  button to resume order.



**Figure 3.4.2-7 Hold/Resume Alert Message**

**Note**

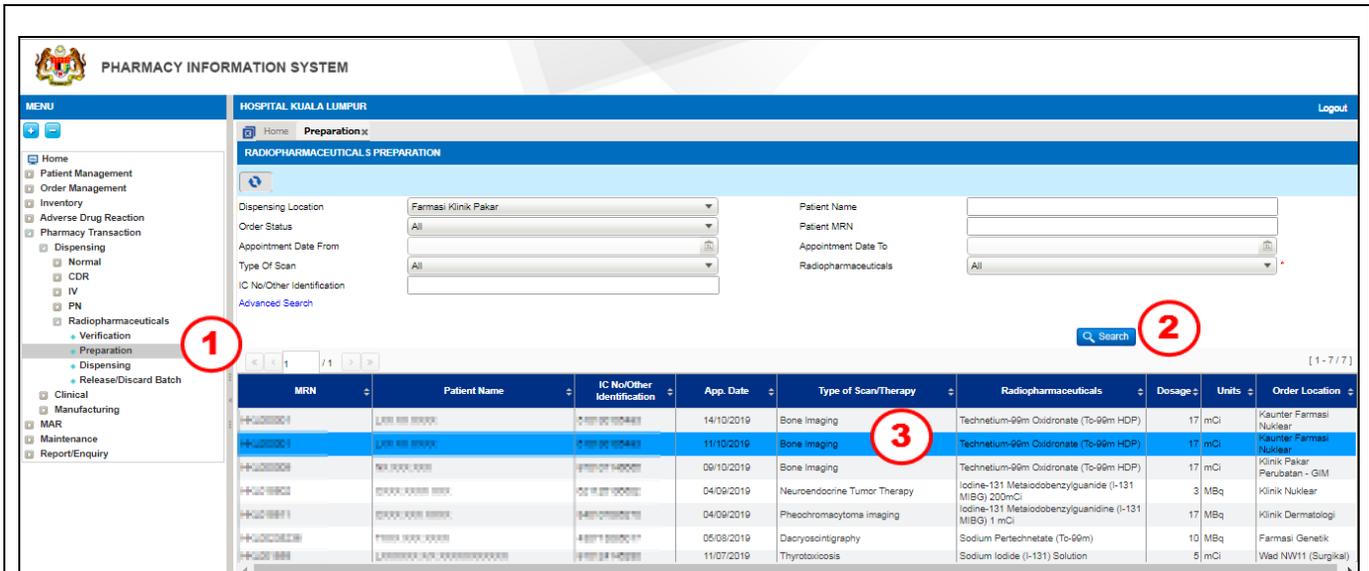
- Click on the  button to resume order.



**Figure 3.4.2-8 Information Alert Message**

### 3.5 Radiopharmaceutical Preparation

Radiopharmaceuticals preparation screen allow user to allocate batch quantity before drug dispensed / administered to patient.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Home Preparation

**RADIOPHARMACEUTICALS PREPARATION**

Dispensing Location: Farmasi Klinik Pakar  
 Order Status: All  
 Appointment Date From:   
 Type Of Scan: All  
 IC No/Other Identification:   
 Patient Name:   
 Patient MRN:   
 Appointment Date To:   
 Radiopharmaceuticals: All

Advanced Search

Search

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
HKL00001	LIN LIN LIN	123456789	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HKL00001	LIN LIN LIN	123456789	11/10/2019	Bone imaging	Technetium-99m Oxidronate (Tc-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HKL00002	XXX XXX XXX	987654321	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	17	mCi	Klinik Pakar Perubatan - GIM
HKL00001	XXX XXX XXX	987654321	04/09/2019	Neuroendocrine Tumor Therapy	Iodine-131 Metaiodobenzylguanide (I-131 MIBG) 200mCi	3	MBq	Klinik Nuklear
HKL00001	XXX XXX XXX	987654321	04/09/2019	Pheochromocytoma imaging	Iodine-131 Metaiodobenzylguanide (I-131 MIBG) 1 mCi	17	MBq	Klinik Dermatologi
HKL00001	XXX XXX XXX	987654321	05/08/2019	Dacryoscintigraphy	Sodium Pertechnetate (Tc-99m)	10	MBq	Farmasi Genetik
HKL00001	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	11/07/2019	Thyrototoxicosis	Sodium Iodide (I-131) Solution	5	mCi	Wad NW11 (Surgical)

Figure 3.5-1 Radiopharmaceuticals Preparation Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'Radiopharmaceuticals Preparation' sub-menu

#### Note

- Various search criteria is provided as below:
  - Dispense Location
  - Patient Name
  - Order Status
  - Patient MRN
  - Appointment Date From
  - Appointment Date To
  - Type of Scan
  - Radiopharmaceuticals
  - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the [Search](#) button and system will be displayed related order

#### STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Preparation screen as per Figure 3.5-2

Upstream Filter

Encounter No: 0632 Admission Date: 19/01/2016 Attending Practitioner: Visit Location: RADIOLOGI Rx No: RADIO0000180122 Order By: Pharmacist Radio

Lab Parameter | Counselling History | Demographic | Pharmacist Notes | Medication Profile | Other Appointment

**PRESCRIPTION** [Prepare](#) [Label](#) [Online Outsource](#)

1 / 1

Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	<a href="#">Details</a>	15 mCi	25 mCi (05/05/2016 11:29 AM)	Remarks	Verified

Figure 3.5-2 Radiopharmaceuticals Preparation

**STEP 4**

Click on the hyperlink at **Reserve Activity** to allocate quantity and Item Batch Details screen will be displayed as per Figure 3.5-3

**ITEM BATCH DETAILS**

Drug Code: RPH000003 Order Detail: 15.0 mCi App.Date/Time:05/05/2016 13:0 Scan/Therapy:Dacryoscintigraphy Default SKU: vial

Drug Name: Sodium Pertechnetate (Tc-99m) Dispense UOM: mCi

Element: Technetium-99m Half Life: 6.01 H Allocation Date/Time: 05/05/2016 11:29:23 AM

**BATCH DETAIL**

1 / 1

Batch No	Available Qty	Allocated Qty	Expiry Date/Time	Available Activity	Available Volume	Batch Details	Allocated Activity	Allocated Volume
45RP99	194 vial	0 vial	20/12/2016 06:03 PM	0 mCi	555 ml	<a href="#">Batch Details</a>	0 mCi	ml
Total	194 vial	0 vial					0 mCi	

Figure 3.5-3 Item Batch Details

**Note**

- Item Batch Details screen will be displayed as per Figure 3.5-4.

**BATCH DETAILS**

1 / 1 [Edit Details](#)

[ 1 - 1 / 1 ]

Calibration Activity	Calibration Date/Time	Dispensed Activity	Measured Activity	Measurement Date Time	Dispensed Volume	Volume	Allocated Volume
27 mCi	28/01/2016 11:00 AM	0 mCi	26.99 mCi	28/01/2016 11:00 AM	0 ml	555 ml	0 ml

Figure 3.5-4 Edit Batch Details

**STEP 5**

Click on [Edit Details](#) quantity to allocate quantity

**RADIOPHARMACEUTICALS VERIFICATION**

Date: 28/01/2016      Receipt No: R116018636

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	200	val	45RP99	02/01/2021	Accepted

Confirm

**STOCK DETAILS**

Calibration Activity: 999 MBq \* 27 mCi \*      Calibration Date/Time: 28/01/2016 11:00 AM \*

Expected Activity: 999 MBq \* 27 mCi \*      Expiry Date/Time: 20/12/2016 6:03 PM \*

Measured Activity: 998.56 MBq \* 26.99 mCi \*      Measured Date/Time: 28/01/2016 11:00 AM \*

Activity Variation: -0.04 %      Volume: 555 ml \*

**MEASUREMENT DETAILS**

Label Packaging Type: White I [Guideline](#) **6**

Survey on Surface: 0

Survey at 1 Meter Distance: 0

Wipe Test: 0

Remarks:

**VERIFICATION DETAILS**

Accept       Reject

Reject Reason:

Done By: Pharmacist Radio      Date/Time: 28/01/2016 11:00 AM

Updated By: MAIKAL FARDHA      Updated Date/Time: 24/05/2016 9:59 PM

Figure 3.5-5 Sample of Item Batch Details

**STEP 6**

Click on guideline link to get details about measurement details

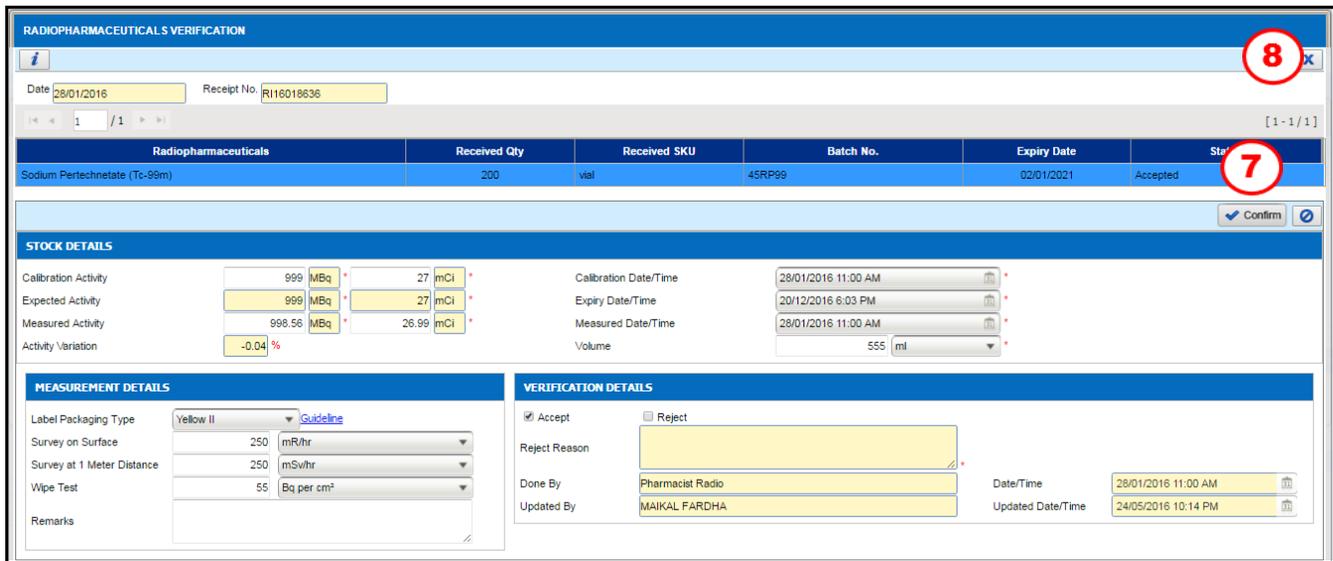
**Note**

- Label Packaging Type Guidelines as per Figure 6.0-6
- Verification can be Accept and Reject based verification

**LABEL PACKAGING TYPE GUIDELINES**

Unit	Label Packaging Type	Description
mSv/hr	White I	Survey on Surface = Not more than (or equal) 0.005 mSv/hr
	Yellow II	Survey on Surface = More than 0.005 mSv/hr, not more than (or equal) 0.5 mSv/hr
	Yellow III	Survey on Surface = More than 0.5 mSv/hr, not more than (or equal) 2 mSv/hr
	Yellow III(a)	Survey on Surface = More than 2 mSv/hr, not more than (or equal) 10 mSv/hr
mR/hr	White I	White I : Survey on Surface = Not more than (or equal) 0.5 mR/hr
	Yellow II	Yellow II : Survey on Surface = More than 0.5 mR/hr, not more than (or equal) 50 mR/hr
	Yellow III	Yellow III : Survey on Surface = More than 50 mR/hr, not more than (or equal) 200 mR/hr
	Yellow III(a)	Yellow III(a) : Survey on Surface = More than 200 mR/hr, not more than (or equal) 1000 mR/hr

Figure 3.5-6 Label Packaging Type Guidelines



**RADIOPHARMACEUTICALS VERIFICATION**

Date: 28/01/2016 Receipt No.: RH16018636

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	200	vial	45RP99	02/01/2021	Accepted

**STOCK DETAILS**

Calibration Activity: 999 MBq, 27 mCi  
 Expected Activity: 999 MBq, 27 mCi  
 Measured Activity: 998.56 MBq, 26.99 mCi  
 Activity Variation: -0.04 %

Calibration Date/Time: 28/01/2016 11:00 AM  
 Expiry Date/Time: 20/12/2016 6:03 PM  
 Measured Date/Time: 28/01/2016 11:00 AM  
 Volume: 555 ml

**MEASUREMENT DETAILS**

Label Packaging Type: Yellow II  
 Survey on Surface: 250 mR/hr  
 Survey at 1 Meter Distance: 250 mSv/hr  
 Wipe Test: 55 Bq per cm<sup>2</sup>

**VERIFICATION DETAILS**

Accept  Reject  
 Done By: Pharmacist Radio  
 Updated By: MAIKAL FARDHA  
 Date/Time: 28/01/2016 11:00 AM  
 Updated Date/Time: 24/05/2016 10:14 PM

Figure 3.5-7 Batch Details

**STEP 7**

Click on  button to finalize batch details

**STEP 8**

Click on  button to close Item Batch Details screen



Encounter No: 0632 Admission Date: 19/01/2016 Attending Practitioner: Visit Location: RADIOLOGI Rx No: RADIO0000180122 Order By: Pharmacist Radio

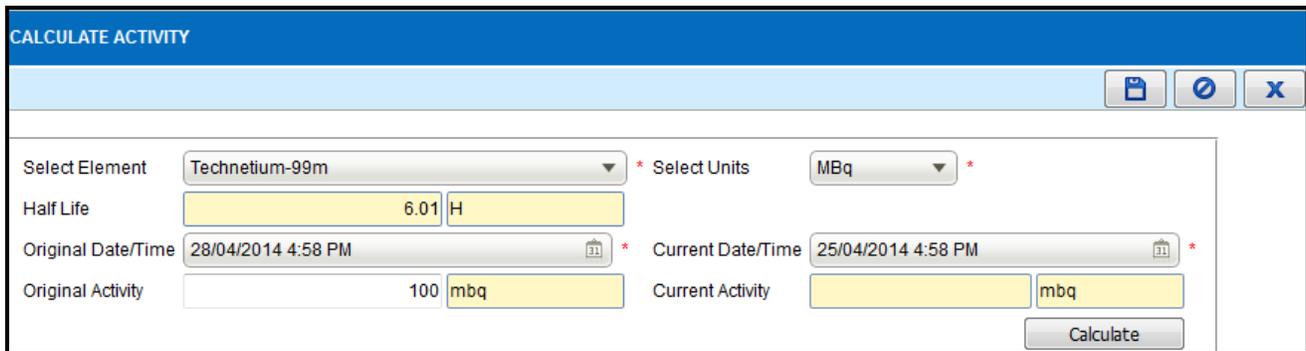
**PRESCRIPTION**

Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	Details	15 mCi	25 mCi (05/05/2016 11:29 AM)	Remarks	Verified

Figure 3.5-8 Radiopharmaceuticals Preparation

**Note**

- User has the option to measure radiopharmaceuticals radioactivity in preparation screen, user need to click the calculate activity button.
- Click on the  button and new window will be displayed as figure 3.4-6.

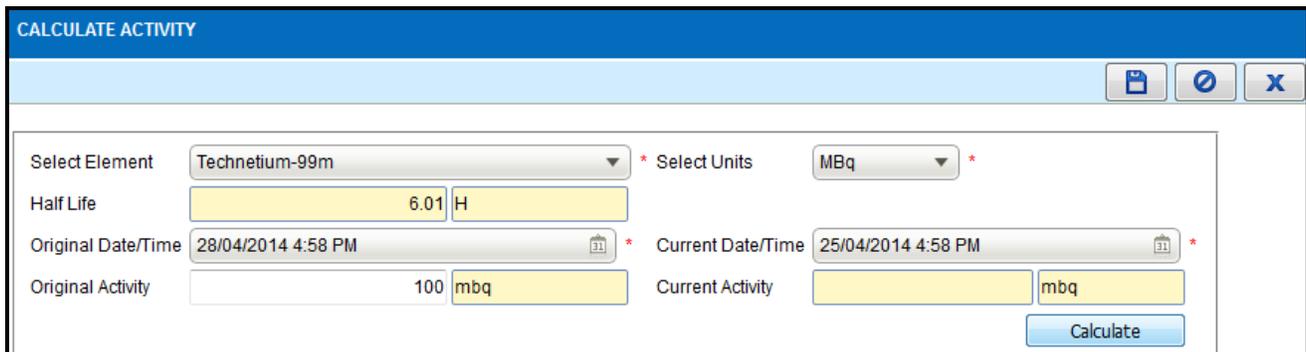


The screenshot shows a software window titled "CALCULATE ACTIVITY". It contains several input fields:
 

- Select Element:** A dropdown menu with "Technetium-99m" selected.
- Select Units:** A dropdown menu with "MBq" selected.
- Half Life:** A text input field containing "6.01" and a unit dropdown with "H" selected.
- Original Date/Time:** A date/time picker showing "28/04/2014 4:58 PM".
- Current Date/Time:** A date/time picker showing "25/04/2014 4:58 PM".
- Original Activity:** A text input field containing "100" and a unit dropdown with "mbq" selected.
- Current Activity:** An empty text input field with a unit dropdown showing "mbq".

 A "Calculate" button is located at the bottom right of the form area.

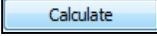
Figure 3.5-9 Radiopharmaceuticals Preparation



This screenshot is identical to Figure 3.5-9, but the "Calculate" button at the bottom right is highlighted in blue, indicating it is the active element.

Figure 3.5-10 Calculate Activity

**Note**

- Select value for **Select Element** drop down box.
- **Half Life** field will be automatically displayed by system after user selects value in **Select Element** field.
- **Original Date/Time** is mandatory field.
- **Select Units** from drop down box.
- **Select Units** is mandatory field.
- Select **Current Date/Time** field.
- **Current Date/Time** is mandatory field.
- **Original Activity** field will automatically display value based on the ordered activity but user is allowed to edit the value.
- Click on the  button and **Current Activity** field will be automatically calculated by system as per Figure 3.5-11.

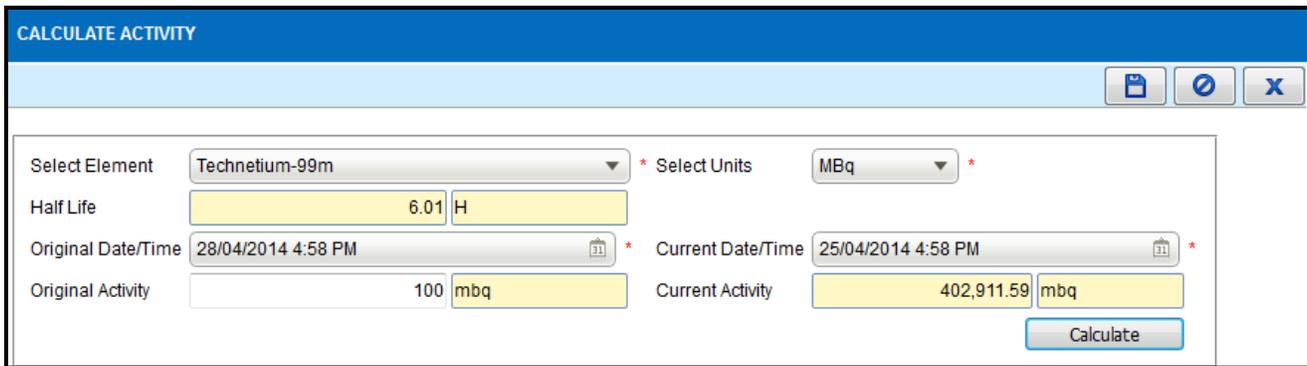


Figure 3.5-11 Calculate Activity

**Note**

- Click on the  button to save record as per Figure 3.5-12.

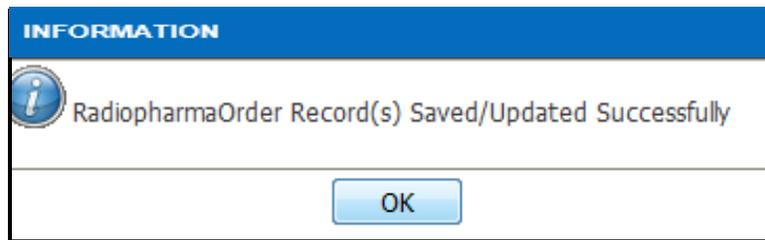
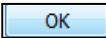


Figure 3.5-13 Save Record Alert Message

**Note**

- Click on the  button to save record as per Figure 3.5-12.

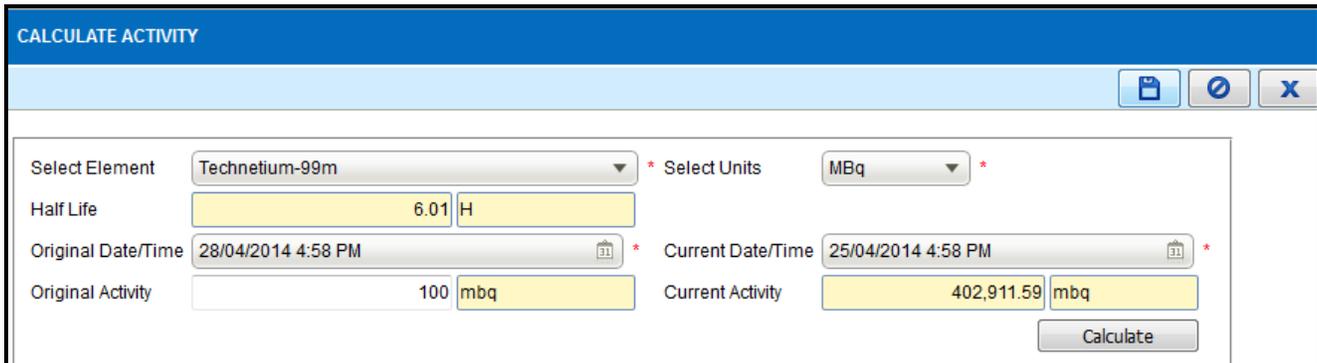


Figure 3.5-14 Calculate Activity

**Note**

Click on the  button to close Calculate Activity screen as per Figure 3.5-14.



Upload Photo

Encounter No: 0632 Admission Date: 19/01/2016 Attending Practitioner: Visit Location: RADIOLOGI Rx No: RADIO0000180122 Order By: Pharmacist Radio

Lab Parameter | Counselling History | Demographic | Pharmacist Notes | Medication Profile | Other Appointment

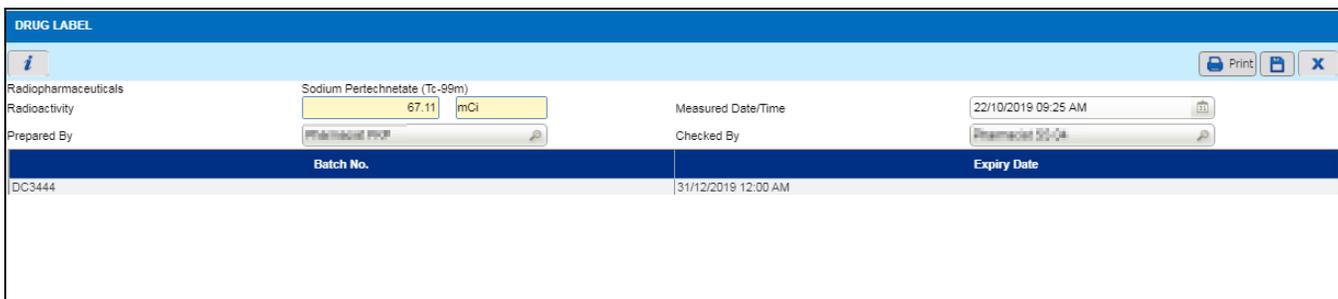
PRESCRIPTION Prepare Label Online Outsource

Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	Details	15 mCi	25 mCi (05/05/2016 11:29 AM)	Remarks	Verified

Figure 3.5-15 Radiopharmaceuticals Preparation

**Note**

- Click on the  button to edit label as per Figure 3.5-16.
- Drug Label screen will be displayed as per Figure 3.5-17.



DRUG LABEL Print Save Close

Radiopharmaceuticals: Sodium Pertechnetate (Tc-99m)

Radioactivity: 67.11 mCi

Measured Date/Time: 22/10/2019 09:25 AM

Prepared By: Pharmacist PPK

Checked By: Pharmacist SJK

Batch No.	Expiry Date
DC3444	31/12/2019 12:00 AM

Figure 3.5-16 Drug Label

**Note**

- Radiopharmaceuticals, Batch No., Expiry Date and Administered field will be automatically displayed by system based on the selected drug batch.
- Enter **Radioactivity** amount. **Radioactivity UOM** will be automatically displayed based on the drug SKU.
- Select **Measured Date/Time** field.
- Select **Prepared By** and **Checked By** field.
- Click on the  button to save record as per Figure 3.5-16.

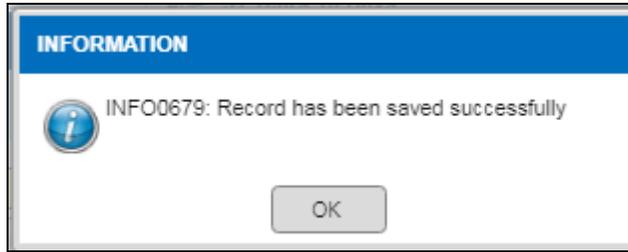
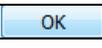


Figure 3.5-17 Alert Message

**Note**

- Click on the  button to save updated Radiopharmaceuticals Order Record as per Figure 3.5-18.

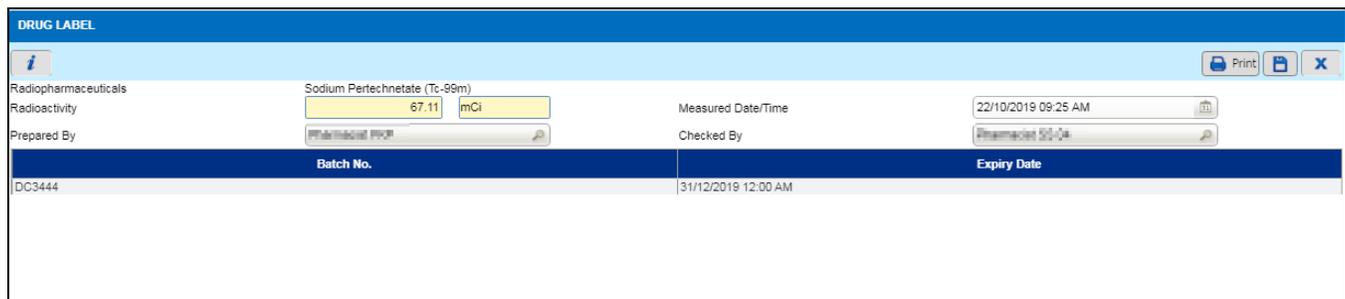


Figure 3.5-18 Drug Label

**Note**

- Click on the  button to print label as per Figure 3.4-14 and label will be displayed as per Figure 3.4-18.

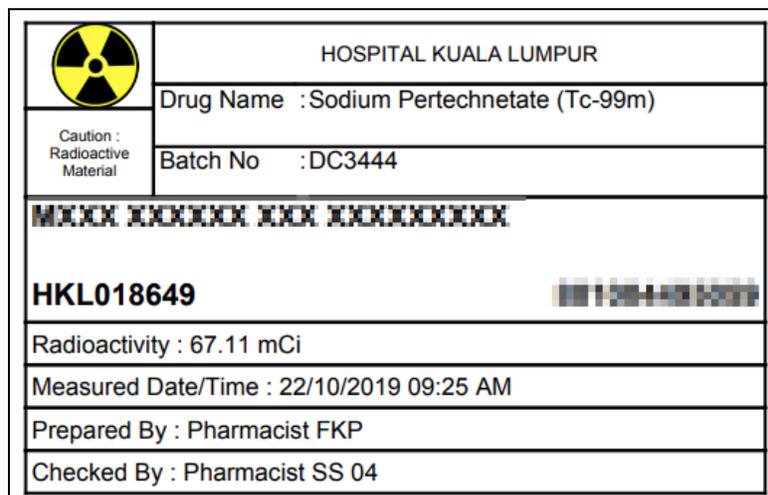


Figure 3.5-19 Sample Radiopharmaceuticals Label

**Note**

Sample of Radiopharmaceuticals Label as per Figure 3.5-19.

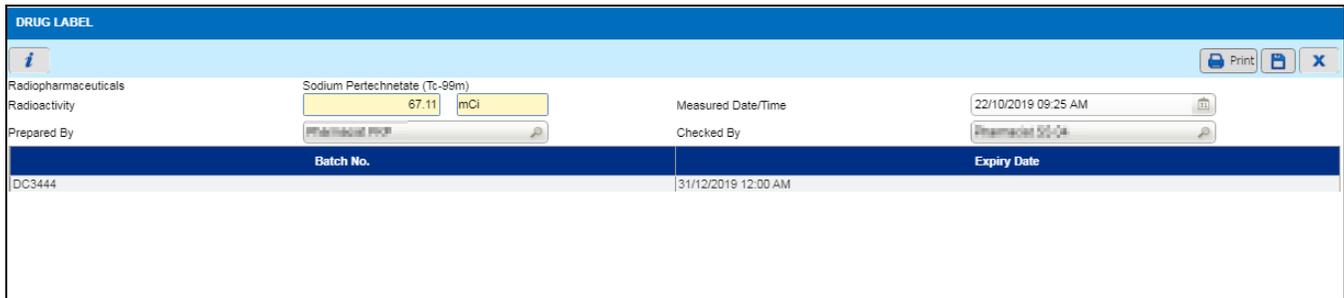


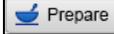
Figure 3.5-20 Drug Label

**Note**

Click on the  button to close Drug Label screen as per Figure 3.5-20.



Figure 3.5-21 Radiopharmaceuticals Preparation

**STEP 8** Click on the  button to prepare Radiopharmaceuticals order and alert message will be displayed as per Figure 3.5-21

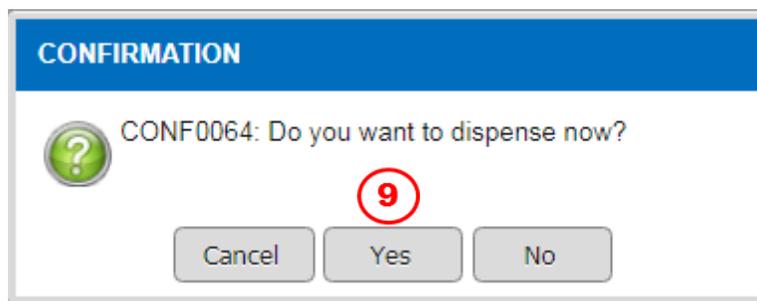
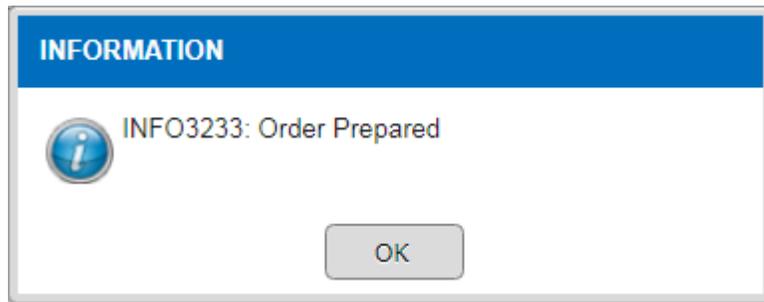


Figure 3.5-22 Ordered Prepared Alert Message

**STEP 9**

Click on the  button



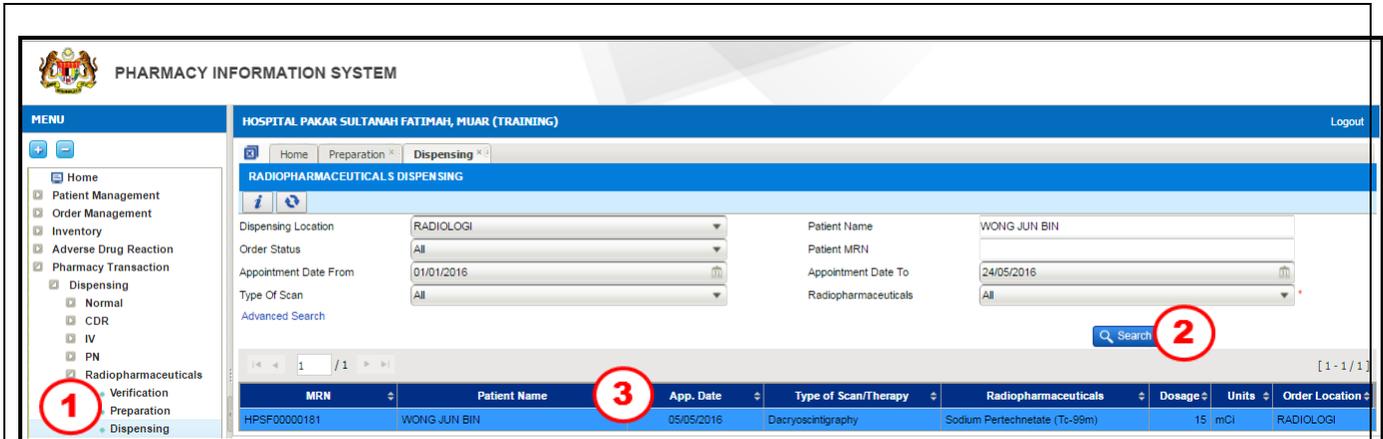
**Figure 3.5-23 Ordered Prepared Alert Message**

**Note**

- Click on the  button and order status will be updated to Prepared
- *User still allowed doing intervention and holding order in preparation stage.*

### 3.6 Radiopharmaceutical Dispensing

Radiopharmaceuticals dispensing screen allow user to dispense medication to patient, reprint drug label and record collection details.



PHARMACY INFORMATION SYSTEM

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR (TRAINING) Logout

Home Preparation Dispensing

**RADIOPHARMACEUTICALS DISPENSING**

Dispensing Location: RADIOLOGI Patient Name: WONG JUN BIN

Order Status: All Patient MRN:

Appointment Date From: 01/01/2016 Appointment Date To: 24/05/2016

Type Of Scan: All Radiopharmaceuticals: All

Advanced Search Search

1 / 1

MRN	Patient Name	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
HPSP0000181	WONG JUN BIN	05/05/2016	Dacryoscintigraphy	Sodium Pertechnetate (Tc-99m)	15	mCi	RADIOLOGI

Figure 3.6-1 Radiopharmaceuticals Dispensing Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'Radiopharmaceuticals Dispensing' sub-menu

#### Note

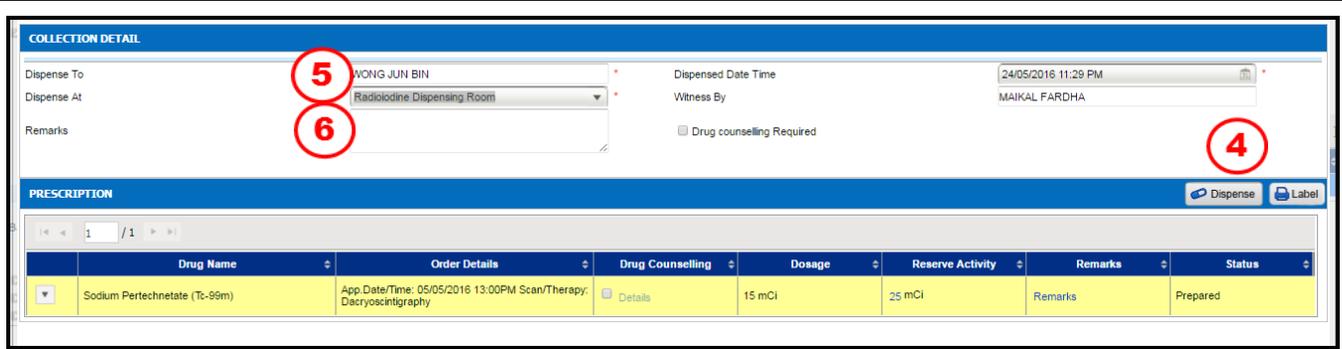
- Various search criteria is provided as below: Dispense Location
  - a) Patient Name
  - b) Order Status
  - c) Patient MRN
  - d) Appointment Date From
  - e) Appointment Date To
  - f) Type of Scan
  - g) Radiopharmaceuticals
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the [Search](#) button and system will be displayed related order

#### STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Dispensing screen as per Figure 3.6-1

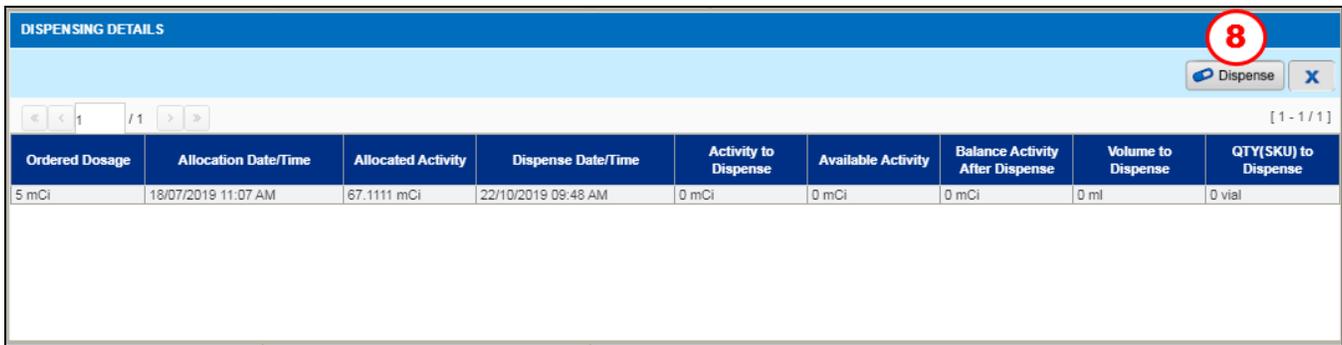


Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Daeroscintigraphy	<input type="checkbox"/> Details	15 mCi	25 mCi	Remarks	Prepared

Figure 3.6-2 Radiopharmaceuticals

**STEP 4**

Click on the  button to dispense Radiopharmaceuticals and Collection Detail screen will be displayed as per Figure 3.6-2



Ordered Dosage	Allocation Date/Time	Allocated Activity	Dispense Date/Time	Activity to Dispense	Available Activity	Balance Activity After Dispense	Volume to Dispense	QTY(SKU) to Dispense
5 mCi	18/07/2019 11:07 AM	67.1111 mCi	22/10/2019 09:48 AM	0 mCi	0 mCi	0 mCi	0 ml	0 vial

Figure 3.6-3 Dispensing Details Screen

**STEP 8**

Click on the  button to dispense Radiopharmaceuticals record as per Figure 3.6-3.

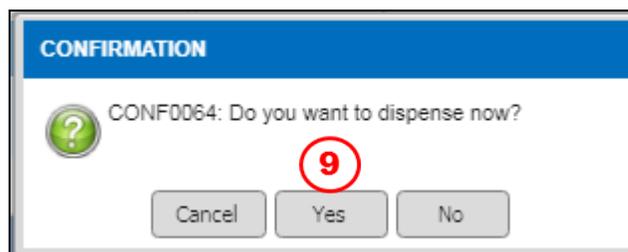
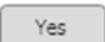


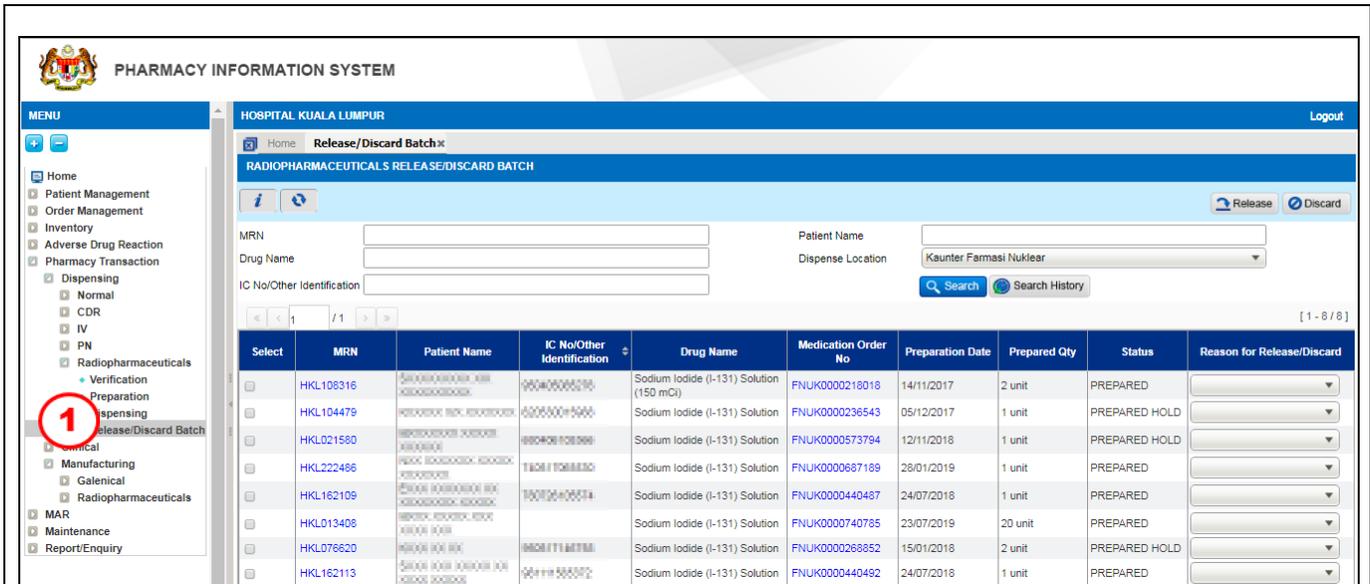
Figure 3.6-4 Information Alert Message

**STEP 9**

Click on the  button to proceed dispensing

### 3.7 Release Batch

Radiopharmaceuticals Release Batch Screen will allow user to release any reserved drug for the patient back into inventory.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Home Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

MRN: [ ] Patient Name: [ ]  
 Drug Name: [ ] Dispense Location: Kaunter Farmasi Nuklear  
 IC No/Other Identification: [ ] Search Search History

Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input type="checkbox"/>	HKL108316	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	[ ]
<input type="checkbox"/>	HKL104479	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	[ ]
<input type="checkbox"/>	HKL021580	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	[ ]
<input type="checkbox"/>	HKL222486	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	[ ]
<input type="checkbox"/>	HKL162109	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	[ ]
<input type="checkbox"/>	HKL013408	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	[ ]
<input type="checkbox"/>	HKL078620	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	[ ]
<input type="checkbox"/>	HKL162113	XXXXXXXXXX_XXXXXX	XXXXXXXXXX	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	[ ]

Figure 3.7-1 Radiopharmaceuticals Release Batch Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'Radiopharmaceuticals Release Batch' sub-menu

#### Note

Various search criteria is provided as below:

- MRN
- Patient Name
- Drug Name
- Dispense Location
- IC No/Other Identification

**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Home Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

MRN: [ ] Patient Name: [ ]  
 Drug Name: [ ] Dispense Location: Kaunter Farmasi Nuklear  
 IC No/Other Identification: [ ] Search Search History

Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input checked="" type="checkbox"/>	HKL108316	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	Change of Regimen
<input type="checkbox"/>	HKL104479	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	Faulty Product
<input type="checkbox"/>	HKL021580	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	Patient Refused
<input type="checkbox"/>	HKL222486	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	Uncollected
<input type="checkbox"/>	HKL162109	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	Wrong Allocation
<input type="checkbox"/>	HKL013408	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	
<input type="checkbox"/>	HKL078620	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL162113	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	

**Figure 3.7-2 Radiopharmaceuticals Release Batch**

**STEP 2**

Select **Reason for Release** from drop down box:

- Uncollected
- Wrong Allocation
- Change of Regimen
- Patient Refused
- Intervention
- Faulty Product

**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Home Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

MRN: [ ] Patient Name: [ ]  
 Drug Name: [ ] Dispense Location: Kaunter Farmasi Nuklear  
 IC No/Other Identification: [ ] Search Search History

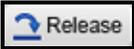
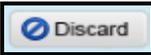
Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input checked="" type="checkbox"/>	HKL108316	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	Change of Regimen
<input type="checkbox"/>	HKL104479	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	Faulty Product
<input type="checkbox"/>	HKL021580	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	Patient Refused
<input type="checkbox"/>	HKL222486	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	Uncollected
<input type="checkbox"/>	HKL162109	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	Wrong Allocation
<input type="checkbox"/>	HKL013408	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	
<input type="checkbox"/>	HKL078620	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL162113	[REDACTED]	[REDACTED]	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	

**Figure 3.7-3 Radiopharmaceuticals Release Batch**

**STEP 3**

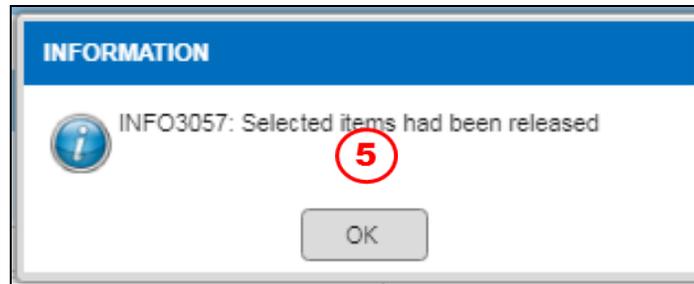
Check the  **Select** checkbox

#### STEP 4

Click on the  button to release batch and  button to discard

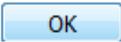
#### **Note**

- Release function is to release and update back stock into inventory.
- Discard function is to discard stock from inventory even not doing dispensing.



**Figure 3.7-4 Information Alert Message**

#### STEP 5

Click on the  button to release selected items

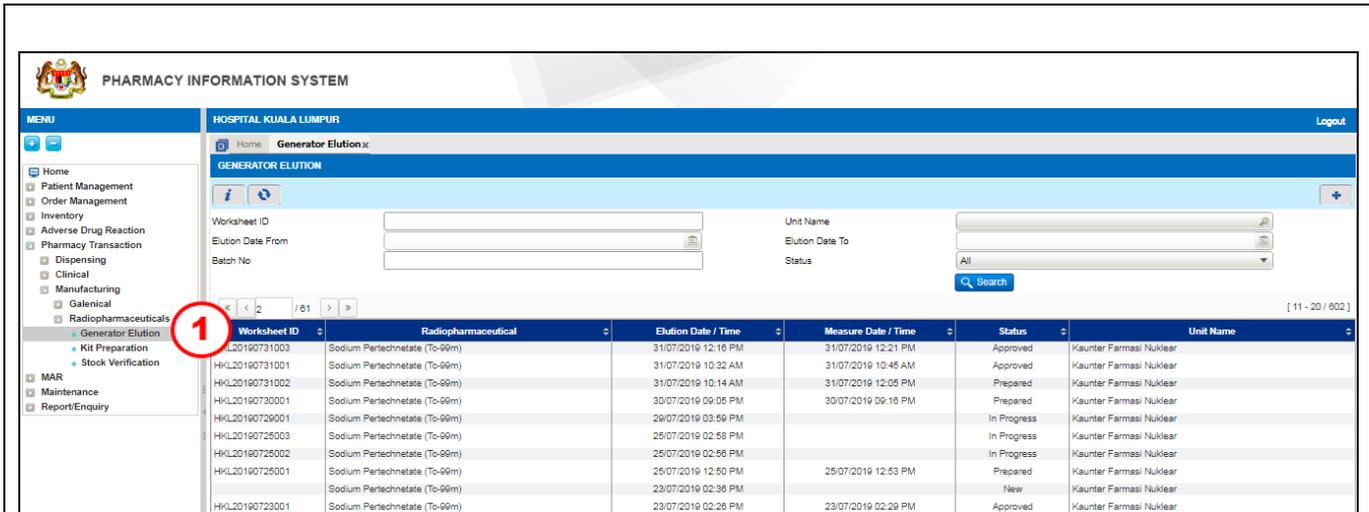
#### **Note**

*Released order will flow back to Preparation screen for user to allocate new batch quantity.*

### 3.8 Radiopharmaceutical Manufacturing

#### 3.8.1 Generate Elution

Generator Elution screen allow user to create Technetium (99mTc) Sodium Pertechnetate which can be used to manufacture Kit based Radiopharmaceuticals in kit Preparation screen.



Worksheet ID	Radiopharmaceutical	Elution Date / Time	Measure Date / Time	Status	Unit Name
HLK20190731003	Sodium Pertechnetate (Tl-99m)	31/07/2019 12:16 PM	31/07/2019 12:21 PM	Approved	Kaunter Farmasi Nuklear
HLK20190731001	Sodium Pertechnetate (Tl-99m)	31/07/2019 10:32 AM	31/07/2019 10:45 AM	Approved	Kaunter Farmasi Nuklear
HLK20190731002	Sodium Pertechnetate (Tl-99m)	31/07/2019 10:14 AM	31/07/2019 12:05 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190730001	Sodium Pertechnetate (Tl-99m)	30/07/2019 09:05 PM	30/07/2019 09:16 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190729001	Sodium Pertechnetate (Tl-99m)	29/07/2019 03:59 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725003	Sodium Pertechnetate (Tl-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725002	Sodium Pertechnetate (Tl-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725001	Sodium Pertechnetate (Tl-99m)	25/07/2019 12:50 PM	25/07/2019 12:53 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190723001	Sodium Pertechnetate (Tl-99m)	23/07/2019 02:39 PM		New	Kaunter Farmasi Nuklear
HLK20190723001	Sodium Pertechnetate (Tl-99m)	23/07/2019 02:29 PM	23/07/2019 02:29 PM	Approved	Kaunter Farmasi Nuklear

Figure 3.8.1-1 Generator Elution Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Manufacturing' and click on 'Radiopharmaceuticals Generator Elution' sub-menu

#### Note

- Various search criteria is provided as below:
  - Worksheet ID
  - Date From
  - Date To
  - Batch No
  - Status

Click on the  button and system will display related record.

PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

Home Generator Elution

GENERATOR ELUTION

Worksheet ID:  Unit Name:

Elution Date From:  Elution Date To:

Batch No:  Status:

Search

[11 - 20 / 602]

Worksheet ID	Radiopharmaceutical	Elution Date / Time	Measure Date / Time	Status	Unit Name
HKL20190731003	Sodium Pertechnetate (Tc-99m)	31/07/2019 12:18 PM	31/07/2019 12:21 PM	Approved	Kaunter Farmasi Nuklear
HKL20190731001	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:32 AM	31/07/2019 10:45 AM	Approved	Kaunter Farmasi Nuklear
HKL20190731002	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:14 AM	31/07/2019 12:05 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190730001	Sodium Pertechnetate (Tc-99m)	30/07/2019 09:05 PM	30/07/2019 09:18 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190729001	Sodium Pertechnetate (Tc-99m)	29/07/2019 03:59 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725003	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725002	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:56 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725001	Sodium Pertechnetate (Tc-99m)	25/07/2019 12:50 PM	25/07/2019 12:53 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190723001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:38 PM		New	Kaunter Farmasi Nuklear
HKL20190723001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:26 PM	23/07/2019 02:29 PM	Approved	Kaunter Farmasi Nuklear

Figure 3.8.1-2 Generator Elution Listing Page

STEP 2



Click on button to create new generator elution record and system will be automatically displayed screen as per Figure 3.8.1-3

Note

- System will be automatically displayed Preparation screen as per Figure 3.8.1-3.
- The **Product** field will be automatically displayed by system.

GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear

Worksheet ID: HKL20190729001

Elution Date/Time: 29/07/2019 03:56:22 PM

Product: Sodium Pertechnetate (Tc-99m)

Status: In Progress

Preparation

Quality Control

Approval

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	Tc-99m Sterile Generator 1000 mCi (HKL)	222	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		
Elution Vial	Elution Vial DRYTEC@@	4	31/12/2019	DRYTEC		1 EA
Saline Vial	Saline Vial DRYTEC (10ml)@@		31/12/2019	DRYTEC	10 ml*	2 EA

PREPARATION DETAILS

Worksheet Prepared By: zahid/nuana

Worksheet Checked By: DR. HUSNAWATI HUSNA BT HAJIDAH

Remarks:

Storage: Keep below 25 °C

Measured Radioactivity: 1 mCi

Radioactivity Concentration: 0.1 mCi/ml

Measured Date/Time: 12/10/2019 3:31 PM

Product Batch No.:

Expiry Date: 25/10/2019 3:31 PM

Figure 3.8.1-3 Generator Elution

STEP 3

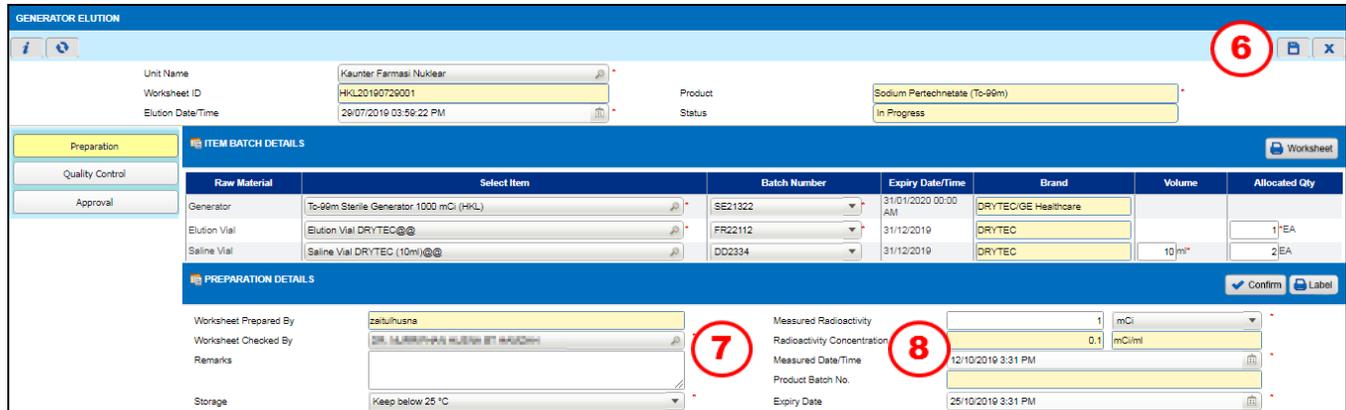
Select **Unit Name**, **Generator** from drop down box and **Batch Number** will be automatically displayed based on current available stock

STEP 4

Select **Elution Vial** from drop down box and **Batch Number** will be automatically displayed based on current available stock

**STEP 5**

Select **Saline Vial** from drop down box and **Batch Number** will be automatically displayed base on current available stock



**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 29/07/2019 03:59:22 PM  
Product: Sodium Pertechnetate (Tc-99m)  
Status: In Progress

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	To-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC-GE Healthcare		
Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		1 EA
Saline Vial	Saline Vial DRYTEC (10ml)	DD2334	31/12/2019	DRYTEC	10 ml*	2 EA

**PREPARATION DETAILS**

Worksheet Prepared By: zafuhusna  
Worksheet Checked By: DR. MURRAY HUSNIN BT. HAJIDIN  
Remarks:  
Storage: Keep below 25 °C

Measured Radioactivity: 1 mCi  
Radioactivity Concentration: 0.1 mCi/ml  
Measured Date/Time: 12/10/2019 3:31 PM  
Product Batch No.:  
Expiry Date: 25/10/2019 3:31 PM

**Figure 3.8.1-4 Generator Elution**

**STEP 6**

Click on the  button to save record

**STEP 7**

Enter **Measured Radioactivity** field and **Radioactivity Concentration** will be automatically calculated and displayed as per Figure 3.8.1-4

**Note**

- Enter **Volume** and **Allocated Qty** for Elution Vial and Saline Vial.
- **Status** will changed to **New** after saving.
- The  button will automatically activate after saving.

**STEP 8**

Enter **Measured Date/Time** field

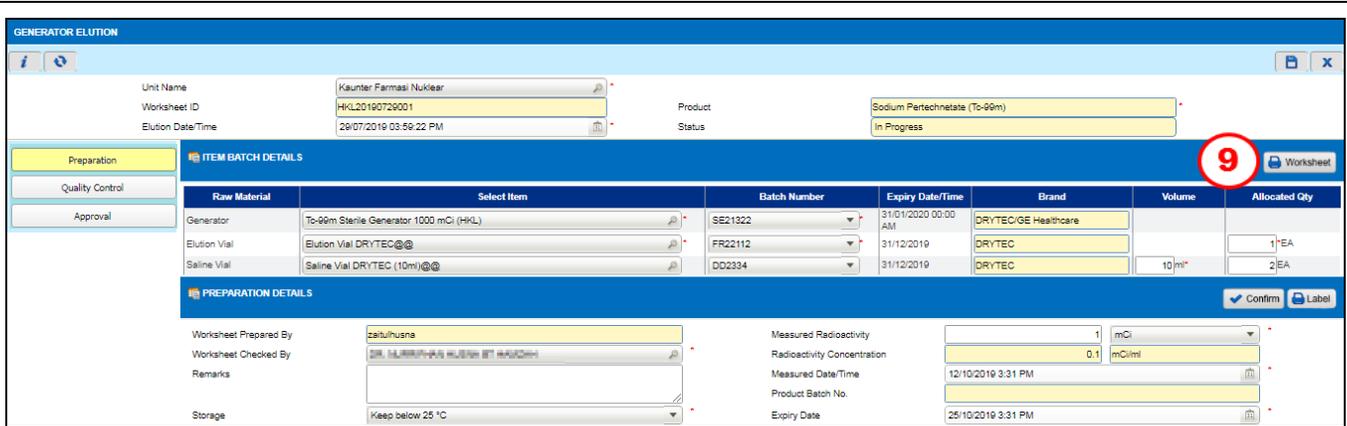
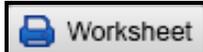


Figure 3.8.1-5 Generator Elution

**STEP 9**



Click on the  button to generate the worksheet and alert message will be displayed as per Figure 3.8.1-5

**Note**

Enter **Remarks** if applicable.

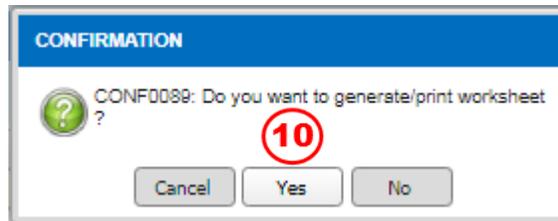


Figure 3.8.1-6 Generate Worksheet Alert Message

**STEP 10**

Click on the  button to generate/print worksheet and worksheet will be displayed as per Figure 3.8.1-6

RADIOPHARMACEUTICALS WORKSHEET						
MINISTRY OF HEALTH HOSPITAL KUALA LUMPUR						
Generator Elution records for Sodium Pertechnetate (Tc-99m)						
Eluate Batch No:						
Worksheet ID: HKL20190729001						
Preparation of Sodium Pertechnetate (Tc-99m) Eluate						
Elution Date/Time	29/07/2019 03:59 PM		Generator Brand/Manufacturer	Worksheet Prepared By : zali/husna		
Generator Batch No.	SE21322	Exp. Date	31/01/2020 00:00	Signature Name Date/Time		
Elution Vial Batch No.	FR22112	Exp. Date	31/12/2019	Signature Name Date/Time		
Saline Vial Batch No.	DD2334	Exp. Date	31/12/2019	Remarks :	Worksheet Checked By : DR. NURRIFHAN HUSNA BT HAMZAH	
Volume	10 ml		Signature Name Date/Time			
Elution BN			Signature Name Date/Time			
Measured Activity			Preparation Done By :			
Measured Date/Time			Signature Name Date/Time			
Radioactivity Concentration	0.1 mCi/ml		Signature Name Date/Time			
Quality Control of Eluate						
Measure Mo-99 Activity		Limit		Pass/Fail	Quality Control Done By	
Quality Control Test	Mo-99 Breakthrough	<0.15 µCi of Mo-99 per mCi of Tc-99m			Signature Name Date/Time	
	Eluate pH	4.0-8.0				
	Alumina Breakthrough	Intensity less than Standard				
Approval of Eluate				Label		
Checklist for approval :			Approved By :			
Preparation done accordingly						
QC done accordingly and pass						
Label done accordingly						
Remarks						

Figure 3.8.1-7 Sample Of Worksheet

**Note**

Sample of worksheet as per Figure 3.7.1-7.

**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 29/07/2019 03:59:22 PM

Product: Sodium Pertechnetate (Tc-99m)  
Status: In Progress

Preparation	ITEM BATCH DETAILS						
Quality Control	Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Approval	Generator	Tc-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1 EA
	Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		1 EA
	Saline Vial	Saline Vial DRYTEC (10ml)	DD2334	31/12/2019	DRYTEC	10 ml	2 EA

**PREPARATION DETAILS**

Worksheet Prepared By: zali/husna  
Worksheet Checked By: DR. NURRIFHAN HUSNA BT HAMZAH  
Remarks:   
Storage: Keep below 25 °C

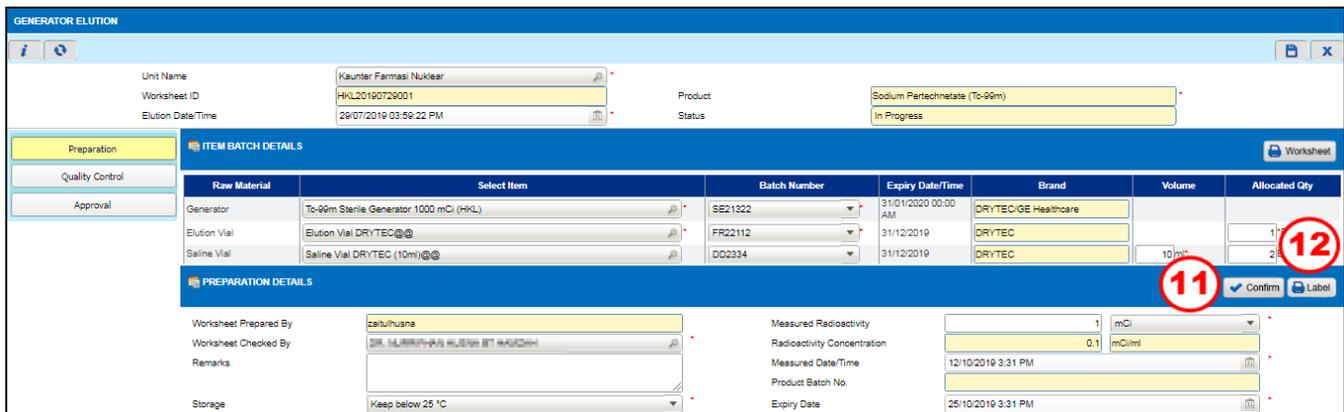
Measured Radioactivity: 1 mCi  
Radioactivity Concentration: 0.1 mCi/ml  
Measured Date/Time: 12/10/2019 3:31 PM  
Product Batch No.:   
Expiry Date: 25/10/2019 3:31 PM

Confirm     Label

Figure 3.8.1-8 Generator Elution

**Note**

- **Worksheet ID** will automatically display after generate worksheet as per Figure 3.8.1-8.
- **Status** will change to *In Progress* after generate worksheet.
- The  Confirm button will activate after generate worksheet.



**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 29/07/2019 03:59:22 PM  
Product: Sodium Pertechnetate (Tc-99m)  
Status: In Progress

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	To-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1
Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		1
Saline Vial	Saline Vial DRYTEC (10ml)	DO2234	31/12/2019	DRYTEC	10 ml	2

**PREPARATION DETAILS**

Worksheet Prepared By: zafu/nuana  
Worksheet Checked By: DR. HUSSEIN HUSSEIN HUSSEIN  
Remarks:  
Storage: Keep below 25 °C

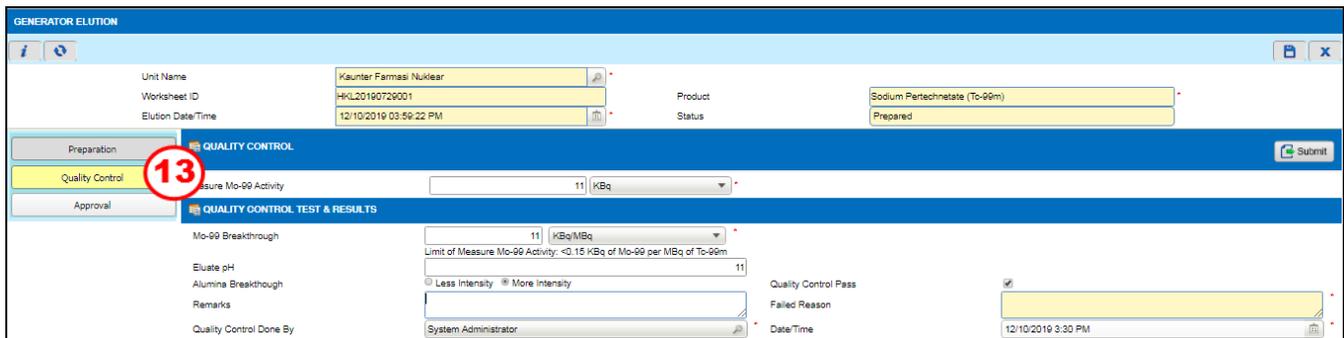
Measured Radioactivity: 1 mCi  
Radioactivity Concentration: 0.1 mCi/ml  
Measured Date/Time: 12/10/2019 3:31 PM  
Product Batch No.:  
Expiry Date: 25/10/2019 3:31 PM

**11** Confirm Label

Figure 3.8.1-9 Generator Elution

**STEP 11**

Click on the  button to confirm information preparation details



**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 12/10/2019 03:59:22 PM  
Product: Sodium Pertechnetate (Tc-99m)  
Status: Prepared

**13** Submit

Measure Mo-99 Activity: 11 KBq

**QUALITY CONTROL TEST & RESULTS**

Mo-99 Breakthrough: 11 KBq/MBq  
Limit of Measure Mo-99 Activity: <0.15 KBq of Mo-99 per MBq of Tc-99m  
Eluate pH: 11  
Alumina Breakthrough:  Less Intensity  More Intensity  
Remarks:  
Quality Control Done By: System Administrator  
Quality Control Pass:   
Failed Reason:  
Date/Time: 12/10/2019 3:30 PM

Figure 3.8.1-10 Generator Elution

**Note**

- The  button will activate after user confirmed the preparation details.
- Status** will change to Prepared and the  button will be activated.

**STEP 12**

Click on the  button to edit label

**STEP 13**

Click on the  button and system will be displayed screen as per Figure 3.8.1-10

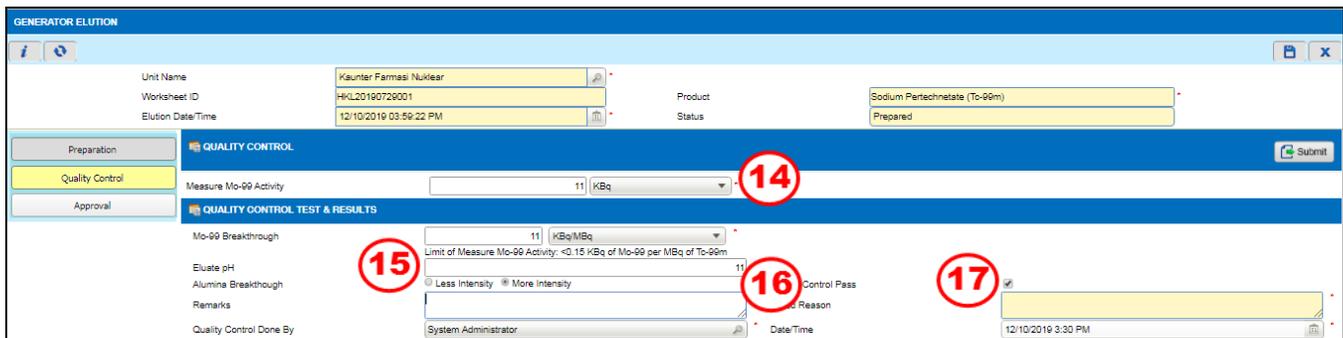


Figure 3.8.1-11 Generator Elution

#### STEP 14

Enter **Measure Mo-99 Activity kBq** field

#### Note

- The **Mo-99 Breakthrough kBq per MBq** field will be automatically displayed by system after enter **Measure Mo-99 Activity kBq**.
- **Date/Time** field will be automatically displayed by system.

#### STEP 15

Enter **Eluate pH** field

#### STEP 16

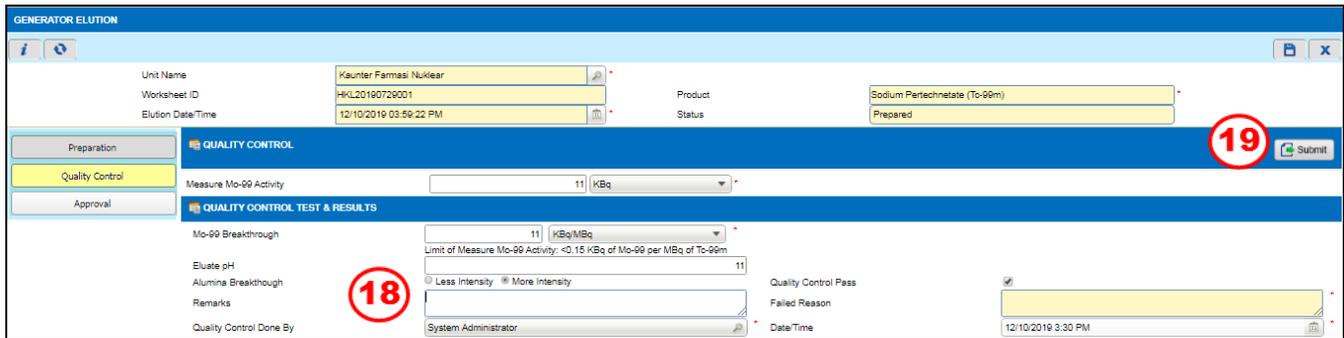
Select **Alumina Breakthrough** either **Less Intensity** or **More Intensity** radio button

#### STEP 17

Select **Quality Control Pass** either **Yes** or **No**

#### Note

If the selection of **Quality Control Pass, No; Failed Reason** field will be activated and user have to enter the reason of failure as per Figure 3.8.1-11.



**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 12/10/2019 03:59:22 PM

Product: Sodium Pertechnetate (Tc-99m)  
Status: Prepared

**QUALITY CONTROL**

Measure Mo-99 Activity: 11 KBq

**QUALITY CONTROL TEST & RESULTS**

Mo-99 Breakthrough: 11 KBq/MBq  
Limit of Measure Mo-99 Activity: <15 KBq of Mo-99 per MBq of Tc-99m

Eluate pH: 11  
Alumina Breakthrough:  Less Intensity  More Intensity

Quality Control Pass:   
Failed Reason: [Empty Field]

Remarks: [Empty Field]

Quality Control Done By: System Administrator  
Date/Time: 12/10/2019 3:30 PM

**Figure 3.8.1-12 Generator Elution**

**Note**

- If the selection of **Quality Control Pass, Yes; Failed Reason** field will not activate as per Figure 3.8.1-12.

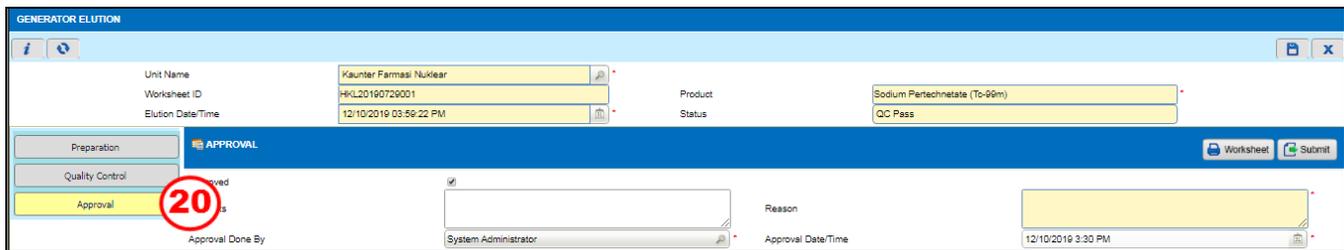
**STEP 18**

Enter **Remarks** if applicable

**STEP 19**



Click on the  button to submit quality control results



**GENERATOR ELUTION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20190729001  
Elution Date/Time: 12/10/2019 03:59:22 PM

Product: Sodium Pertechnetate (Tc-99m)  
Status: QC Pass

**APPROVAL**

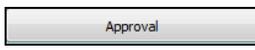
Approval Done By: System Administrator  
Reason: [Empty Field]  
Approval Date/Time: 12/10/2019 3:30 PM

**Figure 3.8.1-13 Generator Elution**

**Note**

- The **Quality Control Done By** field will be automatically displayed after click on the  button.
- The  button will disable after done submitting the Quality Control record.
- The  button will be activated after the submission.

**STEP 20**

Click on the  button and system will be displayed screen as per Figure 3.8.1-13

**Note**

Status will be changed to QC Pass at Approval screen.

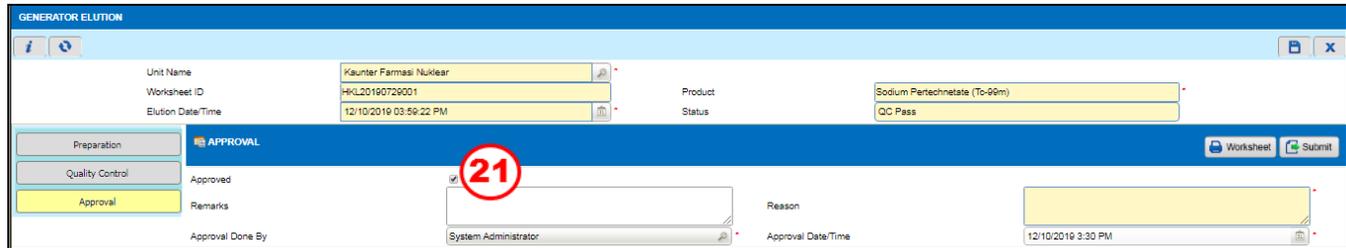


Figure 3.8.1-14 Generator Elution

**STEP 21**

Select **Approved** either **Yes** or **No**

**Note**

- If the selection of **Approved, No; Reason** field will be activated and user have to enter the reason of not approve as per Figure 3.8.1-14.
- If the selection of **Approved, Yes; Reason** field will not activate as per Figure 3.8.1-15.
- Enter **Remarks** if applicable.
- The **Date/Time** field will automatically default by system.
- The  **Worksheet** button is for user to reprint the worksheet.

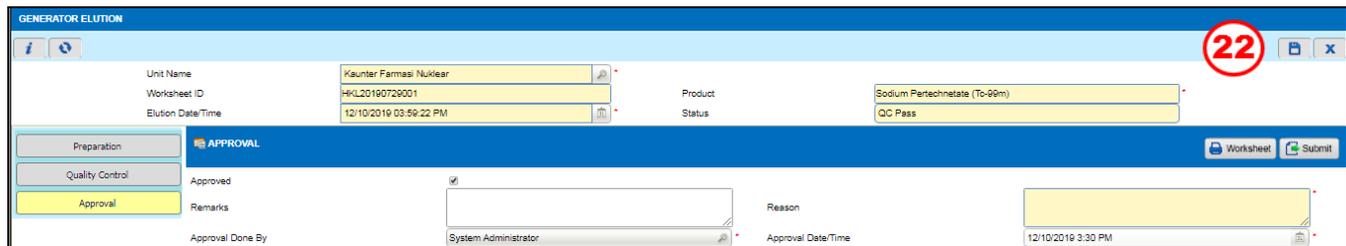


Figure 3.8.1-15 Generator Elution

**STEP 22**

Click on the  **Submit** button to submit the approval details

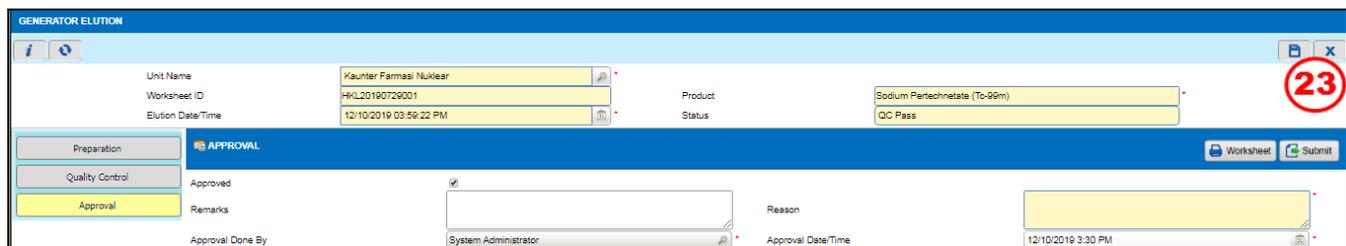


Figure 3.8.1-16 Generator Elution



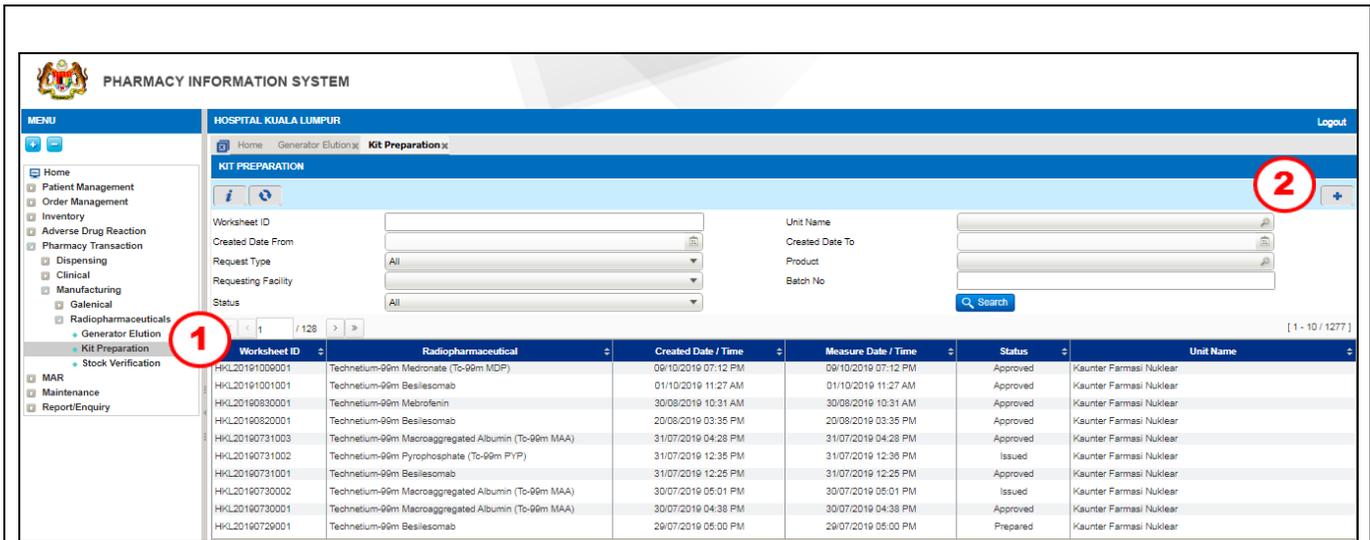
**Note**

- **Status** will change to *Approved* after the submission had done.
- The **Approval Done By** field will be automatically displayed after the submission had done.

**STEP 23**

Click on the  button to close generator elution screen

### 3.8.2 KIT Preparation



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR

Logout

Home Generator Elution Kit Preparation x

**KIT PREPARATION**

Worksheet ID:  Unit Name:

Created Date From:  Created Date To:

Request Type:  Product:

Requesting Facility:  Batch No:

Status:

[ 1 - 10 / 1277 ]

Worksheet ID	Radiopharmaceutical	Created Date / Time	Measure Date / Time	Status	Unit Name
HKL20191009001	Techmetium-99m Medronate (Tc-99m MDP)	09/10/2019 07:12 PM	09/10/2019 07:12 PM	Approved	Kaunter Farmasi Nuklear
HKL20191001001	Techmetium-99m Besiliosomab	01/10/2019 11:27 AM	01/10/2019 11:27 AM	Approved	Kaunter Farmasi Nuklear
HKL20190830001	Techmetium-99m Mebrofenin	30/08/2019 10:31 AM	30/08/2019 10:31 AM	Approved	Kaunter Farmasi Nuklear
HKL20190830001	Techmetium-99m Besiliosomab	20/08/2019 03:35 PM	20/08/2019 03:35 PM	Approved	Kaunter Farmasi Nuklear
HKL20190731003	Techmetium-99m Macroaggregated Albumin (Tc-99m MAA)	31/07/2019 04:28 PM	31/07/2019 04:28 PM	Approved	Kaunter Farmasi Nuklear
HKL20190731002	Techmetium-99m Pyrophosphate (Tc-99m PYP)	31/07/2019 12:35 PM	31/07/2019 12:35 PM	Issued	Kaunter Farmasi Nuklear
HKL20190731001	Techmetium-99m Besiliosomab	31/07/2019 12:25 PM	31/07/2019 12:25 PM	Approved	Kaunter Farmasi Nuklear
HKL20190730002	Techmetium-99m Macroaggregated Albumin (Tc-99m MAA)	30/07/2019 05:01 PM	30/07/2019 05:01 PM	Issued	Kaunter Farmasi Nuklear
HKL20190730001	Techmetium-99m Macroaggregated Albumin (Tc-99m MAA)	30/07/2019 04:38 PM	30/07/2019 04:38 PM	Approved	Kaunter Farmasi Nuklear
HKL20190729001	Techmetium-99m Besiliosomab	29/07/2019 05:00 PM	29/07/2019 05:00 PM	Prepared	Kaunter Farmasi Nuklear

Figure 3.8.2-1 Kit Preparation Listing Page

#### STEP 1

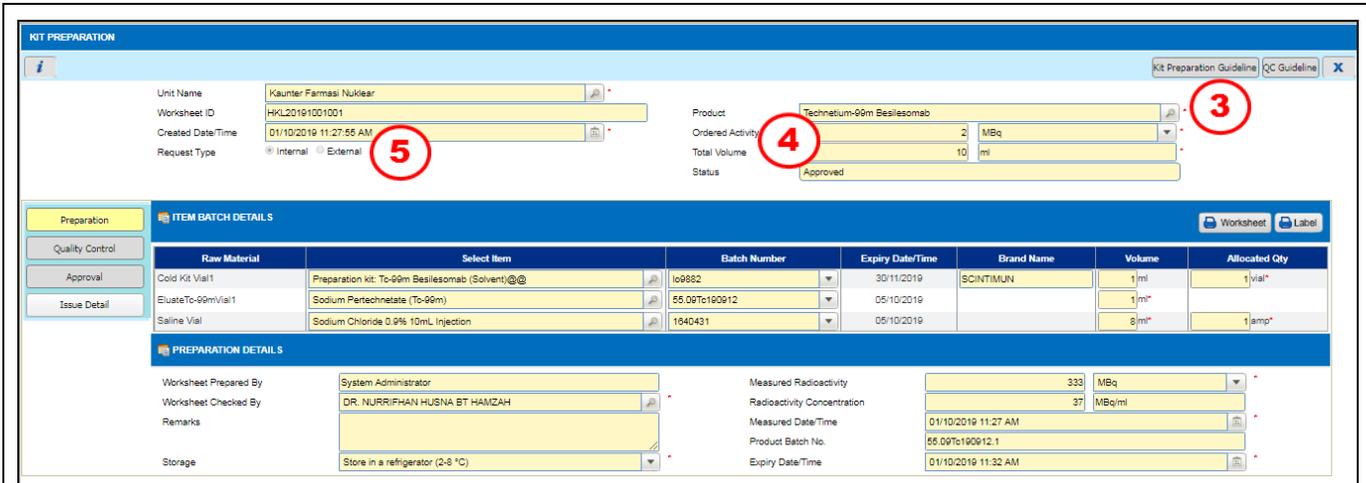
Click on 'Pharmacy Transaction' menu follow by 'Manufacturing' and click on 'Radiopharmaceuticals Kit Preparation' sub-menu

#### Note

- Various search criteria is provided as below:
  - Worksheet ID
  - Product
  - Ordered Date From
  - Ordered Date To
  - Batch No
  - Status
  - Request Type/Requesting Facility
- Click on the  button and system will be displayed related record.

#### STEP 2

Click on  button to create new bulk preparation record and system will be automatically displayed screen as per Figure 3.8.2-1



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191001001  
Created Date/Time: 01/10/2019 11:27:55 AM  
Request Type:  Internal  External

Product: Technetium-99m Besilesomab  
Ordered Activity: 2 MBq  
Total Volume: 10 ml  
Status: Approved

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit, Tc-99m Besilesomab (Solvent)@@	1c9882	30/11/2019	SCINTIMUN	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	55.097c190912	05/10/2019		1 ml*	
Saline Vial	Sodium Chloride 0.9% 10mL Injection	1640431	05/10/2019		8 ml*	1 amp*

**PREPARATION DETAILS**

Worksheet Prepared By: System Administrator  
Worksheet Checked By: DR. NURRIFHAN HUSNA BT HAMZAH  
Remarks:  
Storage: Store in a refrigerator (2-8 °C)

Measured Radioactivity: 333 MBq  
Radioactivity Concentration: 37 MBq/ml  
Measured Date/Time: 01/10/2019 11:27 AM  
Product Batch No.: 55.097c190912.1  
Expiry Date/Time: 01/10/2019 11:32 AM

Figure 3.8.2-2 Kit Preparation

### STEP 3

Click on the  button and select **Product** from the drop down box

### Note

- The **Unit Name** field will automatically default to current date by system.
- The **Created Date** field will automatically default to current date by system.
- The **Request Type** will automatically default to **Internal** radiobutton.

### STEP 4

Enter **Ordered Activity** and **Total Volume** field

### STEP 5

Select **Request Type** either **Internal** or **External** radiobutton

**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: [Blank]  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: New

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1 Add	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1 Add	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial Add	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

**PREPARATION DETAILS**

Worksheet Prepared By: [Blank]  
Worksheet Checked By: DR. NURRIHAN HUSNA BT HAMZAH  
Remarks: [Blank]  
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq  
Radioactivity Concentration: 5.5 MBq/ml  
Measured Date/Time: 12/10/2019 4:02 PM  
Product Batch No.: [Blank]  
Expiry Date/Time: [Blank]

Figure 3.8.2-4 Kit Preparation

**STEP 6**

Select the **Item** from drop down box for every **Raw Material** details

**Note**

- **Batch Number, Expiry Date and Brand Name** will be automatically displayed after done the selection for **Item** field.
- **Enter Volume and Allocated Qty** field.
- **Cold Kit Vial1, Eluate Tc-99m Vial1 and Saline Vial** are mandatory field.

**STEP 7**

Enter **Measured Radioactivity** field and **Radioactivity Concentration** will be automatically calculated and displayed by system

**STEP 8**

Enter **Remarks** if applicable

KIT PREPARATION

11

Unit Name: Kaunter Farmasi Nuklear

Worksheet ID: [Blank]

Created Date/Time: 12/10/2019 04:00:06 PM

Request Type:  Internal  External

Product: Technetium-99m Mebrofenin

Ordered Activity: 11 MBq

Total Volume: 1 ml

Status: New

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1 <small>Add</small>	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
BuadsTc-99mVial1 <small>Add</small>	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

PREPARATION DETAILS

Worksheet Prepared By: [Blank]

Worksheet Checked By: DR. NURRIHAN HUSNA BT HAMZAH

Remarks: [Blank]

Storage: 9 Keep below 25 °C

Measured Radioactivity: 11 MBq

Radioactivity Concentration: 5.5 MBq/ml

Measured Date/Time: 12/10/2019 4:02 PM

Product Batch No.: [Blank]

Expiry Date/Time: 10 [Blank]

Figure 3.8.2-5 Kit Preparation

**Note**

- **Measured Date/Time** and **Worksheet Prepared By** will be automatically displayed by system.
- **Measured Date/Time** is mandatory field.

**STEP 9**

Select **Storage** from drop down box:

- Store in refrigerator (2-8°C )
- Keep below 25°C
- Keep in room temperature

**Note**

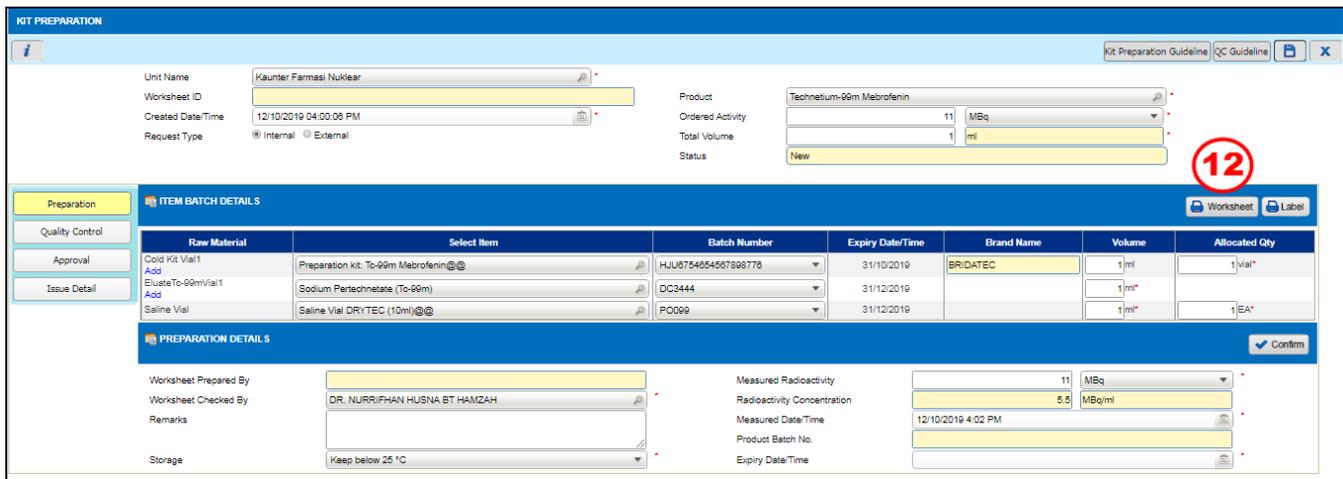
- **Storage** is mandatory field.

**STEP 10**

Select **Expiry Date** and this field is mandatory

**STEP 11**

Click on the  button to save record



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: [Field]  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: New

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1 Add	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
BuadsTc-99mVial1 Add	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

**PREPARATION DETAILS**

Worksheet Prepared By: [Field]  
Worksheet Checked By: DR. NURRIPHAN HUSNA BT HAMZAH  
Remarks: [Field]  
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq  
Radioactivity Concentration: 5.5 MBq/ml  
Measured Date/Time: 12/10/2019 4:02 PM  
Product Batch No.: [Field]  
Expiry Date/Time: [Field]

Buttons: Worksheet, Label

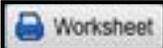
Figure 3.8.2-6 Kit Preparation

**Note**

**Status** will change to **New** after saving record.

- The  button will be activated after saving.
- The  button will be activated after generate worksheet.

**STEP 12**

Click on the  button to generate worksheet and alert message will be displayed as per Figure 3.7.2-6

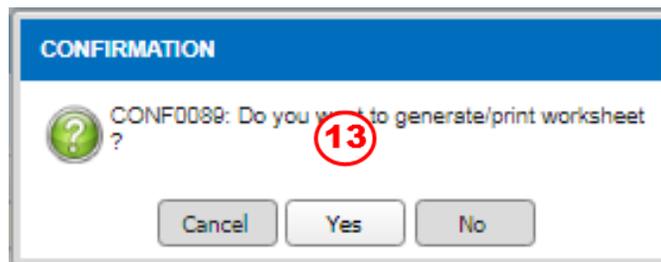


Figure 3.8.2-7 Bulk Preparation

**STEP 13**

Click on the  button to generate/print worksheet and worksheet will be displayed as per Figure 3.8.2-7

RADIOPHARMACEUTICALS WORKSHEET				
MINISTRY OF HEALTH HOSPITAL KUALA LUMPUR				
Kit Preparation records for Technetium-99m Mebrofenin				
Batch No:				
Worksheet ID: HKL20191012001				
Preparation of Technetium-99m Mebrofenin			Cold Kit Brand/Manufacturer Name:	
Date	12/10/2019	Expected Activity	11 MBq	
Raw Material	Batch Number/Expiry	Volume		
Cold Kit Vial	HJU6754654567898776 -	Total : 1 ml 1 ml		
Eluate Tc-99m Vial	DC3444 - 31/12/2019	1 ml		
Saline Vial	PO099 - 31/12/2019	1 ml		
Measured Activity				
Measured Date/Time				
Radioactivity Concentration				
BRIDATEC - GE Healthcare			Worksheet Prepared By : System Administrator	
Remarks :			Worksheet Checked By : DR. NURRIFHAN HUSNA BT HAMZAH	
			Preparation Done By :	
Quality Control of Technetium-99m Mebrofenin			Label	
QC Sampling Time			Approval of Technetium-99m Mebrofenin	
	Measure	Actual	Checklist for approval :	
		%		
First Strip	BG Reading	N/A		Preparation done accordingly
	1st Portion	N/A	N/A	QC done accordingly and pass
	2nd Portion	N/A	N/A	Label done accordingly
Second Strip	BG Reading	N/A		Remarks :
	3rd Portion	N/A	N/A	Approved By :
	4th Portion	N/A	N/A	
Radiochemical Purity				

Figure 3.8.2-8 Sample Worksheet

**Note**

Sample of worksheet as per Figure 3.8.2-8.

The screenshot shows the 'KIT PREPARATION' screen. At the top, there are fields for Unit Name (Kaunter Farmasi Nuklear), Worksheet ID, Created Date/Time (12/10/2019 04:00:09 PM), and Request Type (Internal/External). The Product is Technetium-99m Mebrofenin, Ordered Activity is 11 MBq, Total Volume is 1 ml, and Status is New. Below this is a table for 'ITEM BATCH DETAILS' with columns for Raw Material, Select Item, Batch Number, Expiry Date/Time, Brand Name, Volume, and Allocated Qty. The table lists Cold Kit Vial1, EluateTc-99mVial1, and Saline Vial. Below the table is the 'PREPARATION DETAILS' section, which includes fields for Worksheet Prepared By, Worksheet Checked By (DR. NURRIFHAN HUSNA BT HAMZAH), Remarks, Storage (Keep below 25 °C), Measured Radioactivity (11 MBq), Radioactivity Concentration (5.5 MBq/ml), Measured Date/Time (12/10/2019 4:02 PM), Product Batch No., and Expiry Date/Time. A red circle with the number '14' is overlaid on the right side of the interface.

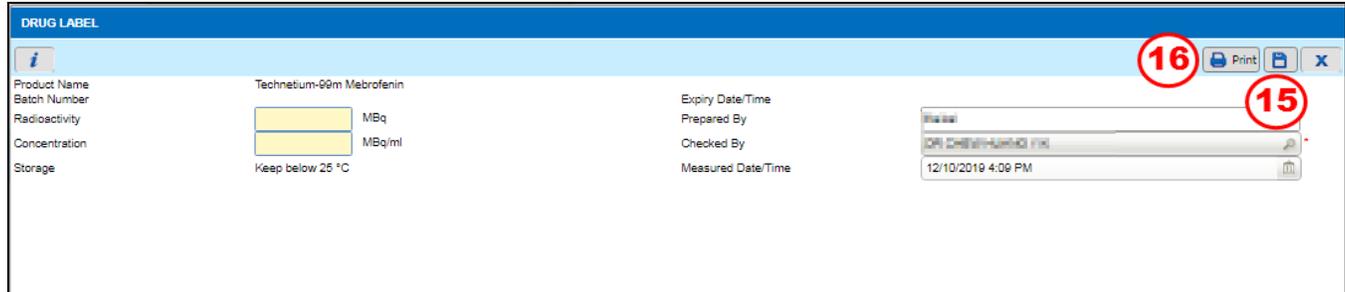
Figure 3.8.2-9 Bulk Preparation

**STEP 14**

Click on the button to edit label and **Drug Label** screen will be displayed as per Figure 3.8.2-9

**Note**

**Status** will be changed to **In Progress** after generated worksheet as per Figure 3.8.2-9.



DRUG LABEL			
Product Name	Technetium-99m Mebrofenin		
Batch Number		Expiry Date/Time	
Radioactivity	<input type="text"/>	Prepared By	
Concentration	<input type="text"/> MBq	Checked By	DR CHEP-HUMDI FK
Storage	<input type="text"/> MBq/ml	Measured Date/Time	12/10/2019 4:09 PM
	Keep below 25 °C		

**Figure 3.8.2-10 Drug Label**

**STEP 15**

Click on the  button to save edited label

**STEP 16**

Click on the  button to print label as per Figure 3.8.2-10

 Caution : Radioactive Material	<b>HOSPITAL KUALA LUMPUR</b>	
	<b>Product Name</b> :	Technetium-99m Mebrofenin
	<b>Batch No.</b> :	
<b>Radioactivity</b> :	0 MBq	<b>Volume</b> : 1 ml
<b>Concentration</b> :	0 MBq/ml	
<b>Measured Date</b> :	12/10/2019	<b>Time</b> : 04:09 PM
<b>Prepared By</b> :	Maikal	
<b>Checked By</b> :	DR CHEW HUANG YIK	
<b>Expiry Date</b> :		<b>Time</b> :
<b>Storage</b> :	Keep below 25 °C	

 Caution : Radioactive Material	<b>HOSPITAL KUALA LUMPUR</b>	
	<b>Product Name</b> :	Technetium-99m Mebrofenin
	<b>Batch No.</b> :	
<b>Radioactivity</b> :	0 MBq	<b>Volume</b> : 1 ml
<b>Concentration</b> :	0 MBq/ml	
<b>Measured Date</b> :	12/10/2019	<b>Time</b> : 04:09 PM
<b>Prepared By</b> :	Maikal	
<b>Checked By</b> :	DR CHEW HUANG YIK	
<b>Expiry Date</b> :		<b>Time</b> :
<b>Storage</b> :	Keep below 25 °C	

Figure 3.8.2-11 Drug Label

**Note**

Sample of Drug Label as per Figure 3.8.2-11.

**DRUG LABEL**

Product Name: Technetium-99m Mebrofenin

Batch Number:

Radioactivity:  MBq

Concentration:  MBq/ml

Storage: Keep below 25 °C

Expiry Date/Time:

Prepared By:

Checked By:

Measured Date/Time:

Print  17

Figure 3.8.2-12 Drug Label

**STEP 17**

Click on the  button to close **Drug Label** screen

**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: [Blank]  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: New

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654567898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	1
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1

**PREPARATION DETAILS**

Worksheet Prepared By: [Blank]  
Worksheet Checked By: DR. NURRIFHAN HUSNA BT HAMZAH  
Remarks: [Blank]  
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq  
Radioactivity Concentration: 5.5 MBq/ml  
Measured Date/Time: 12/10/2019 4:02 PM  
Product Batch No.: [Blank]  
Expiry Date/Time: [Blank]

**18**

Confirm

Figure 3.8.2-13 Drug Label

**STEP 18**

Click on the  button to confirm information preparation details

**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: Prepared

**ITEM BATCH DETAILS**

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654567898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	1
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

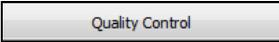
**PREPARATION DETAILS**

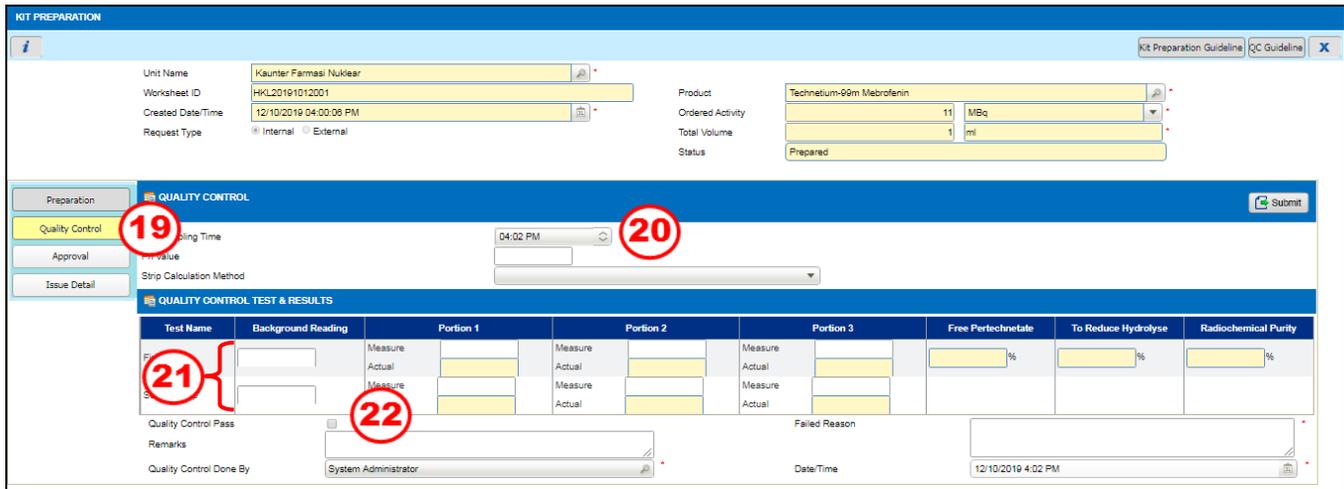
Worksheet Prepared By: System Administrator  
Worksheet Checked By: DR. NURRIFHAN HUSNA BT HAMZAH  
Remarks: [Blank]  
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq  
Radioactivity Concentration: 5.5 MBq/ml  
Measured Date/Time: 12/10/2019 4:02 PM  
Product Batch No.: DC3444.1  
Expiry Date/Time: 12/10/2019 4:16 PM

Figure 3.8.2-14 Kit Preparation

**Note**

- **Status** will change to **Prepared** after preparation details confirmation.
- The  button will be activated after preparation details confirmation
- The  button will disable after preparation details confirmation



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: Prepared

Preparation | **QUALITY CONTROL** | Submit

Quality Control **19**  
Sampling Time: 04:02 PM **20**  
Ph Value:   
Strip Calculation Method:

**QUALITY CONTROL TEST & RESULTS**

Test Name	Background Reading	Portion 1	Portion 2	Portion 3	Free Per technetate	To Reduce Hydrolyse	Radiochemical Purity
F	Measure	Measure	Measure	Measure			
S	Actual	Actual	Actual	Actual	%	%	%
S	Measure	Measure	Measure	Measure			
S	Actual	Actual	Actual	Actual			

Quality Control Pass **22**  
Remarks:   
Failed Reason:   
Quality Control Done By: System Administrator  
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-15 Bulk Preparation

**STEP 19**

Click on the  button and system will be displayed screen as per Figure 3.8.2-15

**STEP 20**

Enter **Qc-Sampling Time** field. Default value is based on the current system time

**STEP 21**

Enter **First Strip, Second Strip, Radiochemical Purify** and **Ph Value** field as per Figure 3.8.2-15

**STEP 22**

Select **Quality Control Pass** either **approved** or **rejected**

**Note**

- If the selection of **Quality Control Pass, No; Failed Reason** field will be activated and user have to enter the reason of failure as per Figure 3.7.2-15.
- If the selection of **Quality Control Pass, Yes; Failed Reason** field will not activate.

**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: Prepared

Preparation | **QUALITY CONTROL** | Submit

QC Sampling Time: 04:02 PM  
Ph Value: 11  
Strip Calculation Method: Biodex

**QUALITY CONTROL TEST & RESULTS**

Test Name	Background Reading	Measure	Portion 1	Measure	Portion 2	Measure	Portion 3	Free Pertechnetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip	100	Measure: 37 Actual: -83	Measure: 37 Actual: -83	Measure: 11 Actual: -12	Measure: 11 Actual: -12	Measure: 11 Actual: -12	Measure: 11 Actual: -12	0%	100%	0%
Second Strip	23	Measure: 11 Actual: -12								

Quality Control Pass:   
Remarks:  **23**  
Quality Control Done By: System Administrator  
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-16 Bulk Preparation

**STEP 23**

Enter **Remarks** if applicable

**Note**

**Quality Control Done By** and **Date/Time** will be automatically displayed and default by system.

**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:06 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: Prepared

Preparation | **QUALITY CONTROL** | Submit

QC Sampling Time: 04:02 PM  
Ph Value: 11  
Strip Calculation Method: Biodex

**QUALITY CONTROL TEST & RESULTS**

Test Name	Background Reading	Measure	Portion 1	Measure	Portion 2	Measure	Portion 3	Free Pertechnetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip	100	Measure: 37 Actual: -83	Measure: 37 Actual: -83	Measure: 11 Actual: -12	Measure: 11 Actual: -12	Measure: 11 Actual: -12	Measure: 11 Actual: -12	0%	100%	0%
Second Strip	23	Measure: 11 Actual: -12								

Quality Control Pass:   
Remarks:   
Quality Control Done By: System Administrator  
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-17 Bulk Preparation

**Note**

- User is allowed to click on the **Strip Guideline** hyperlink and system will be displayed as per Figure 3.8.2-17.

Figure 3.8.2-17 displays multiple pages of Quality Control Test - Radiopharmaceutical Recommendation tables. Each page includes a header with the SOP number (SOP No. MPU-PD-006-01) and page number. The tables are organized into columns for Test Name, Background Reading, Portion 1, Portion 2, Portion 3, Free Pertechnetate, To Reduce Hydrolyse, and Radiochemical Purity. The tables provide detailed instructions and calculations for various radiopharmaceuticals, including Technetium-99m, Gallium-67, and Iodine-125.

**Note**

Sample of Strip Guideline as per Figure 3.8.2-18.

Figure 3.8.2-19 is a screenshot of the Bulk Preparation software interface. The top section shows 'KIT PREPARATION' with fields for Unit Name (Kaunter Farmasi Nuklear), Worksheet ID (HKL20191012001), Created Date/Time (12/10/2019 04:00:06 PM), Request Type (Internal), Product (Technetium-99m Mebrofenin), Ordered Activity (11 MBq), Total Volume (1 ml), and Status (Prepared). A 'Submit' button is visible in the top right corner.

The middle section is titled 'QUALITY CONTROL' and includes fields for QC Sampling Time (04:02 PM), Ph Value (11), and Strip Calculation Method (Biorex).

The bottom section is titled 'QUALITY CONTROL TEST & RESULTS' and contains a table with the following data:

Test Name	Background Reading	Portion 1	Portion 2	Portion 3	Free Pertechnetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip	100	Measure: 37 Actual: -83	Measure: Actual	Measure: Actual	0%	100%	0%
Second Strip	23	Measure: 11 Actual: -12	Measure: Actual	Measure: Actual			

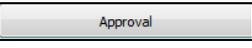
Below the table, there are fields for Quality Control Pass (checked), Remarks, Quality Control Done By (System Administrator), and Date/Time (12/10/2019 4:02 PM).

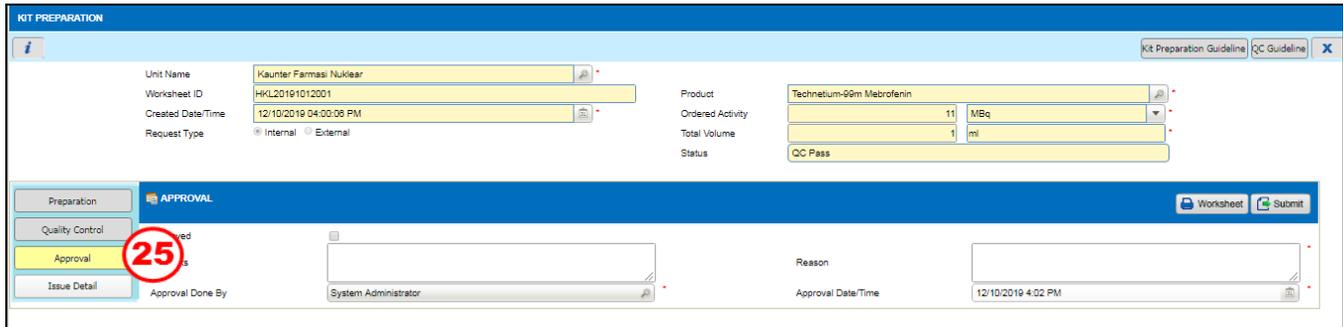
Figure 3.8.2-19 Bulk Preparation

**STEP 24**

Click on the button to submit quality control results

**Note**

- The  button will disable after done the submission.
- The  button will be activated after the submission.



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:08 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: QC Pass

Preparation | **APPROVAL** | Worksheet | Submit

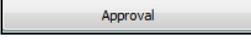
Approved:  Reason:

Remarks:

Approval Done By: System Administrator  
Approval Date/Time: 12/10/2019 4:02 PM

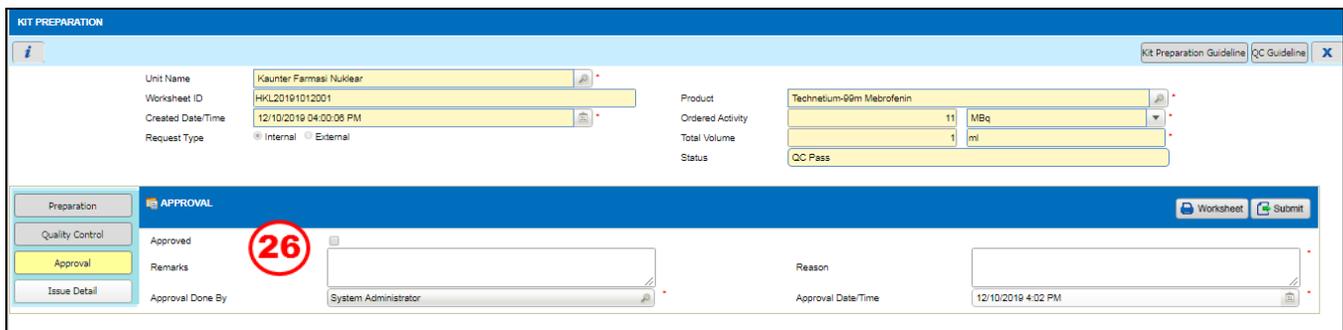
**Figure 3.8.2-20 Bulk Preparation**

**STEP 25**

Click on the  button and system will display screen as per Figure 3.8.2-20

**Note**

Status will be changed to QC Pass after done the submission.



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:08 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: QC Pass

Preparation | **APPROVAL** | Worksheet | Submit

Approved:  Reason:

Remarks:

Approval Done By: System Administrator  
Approval Date/Time: 12/10/2019 4:02 PM

**Figure 3.8.2-21 Bulk Preparation**

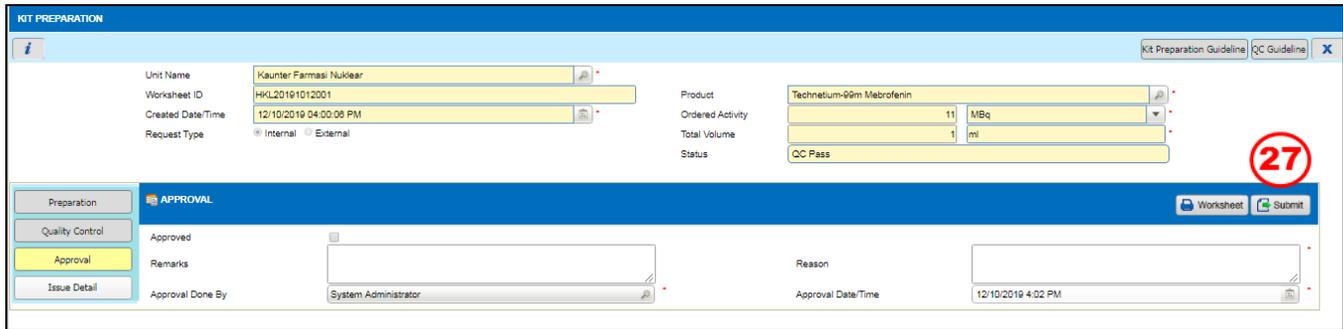
**STEP 26**

Select **Approved** either **Yes** or **No**

**Note**

- If the selection of **Approved, No**; **Reason** field will be activated and user have to enter the reason of not approve as per Figure 3.8.2-21.
- If the selection of **Approved, Yes**; **Reason** field will not activate as per Figure 3.8.2-21.
- Enter **Remarks** if applicable.
- The **Approval Done By** and **Date/Time** field will automatically default by system.

- The  button is for user to reprint the worksheet.



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:08 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: QC Pass

**APPROVAL**

Approved:

Remarks:

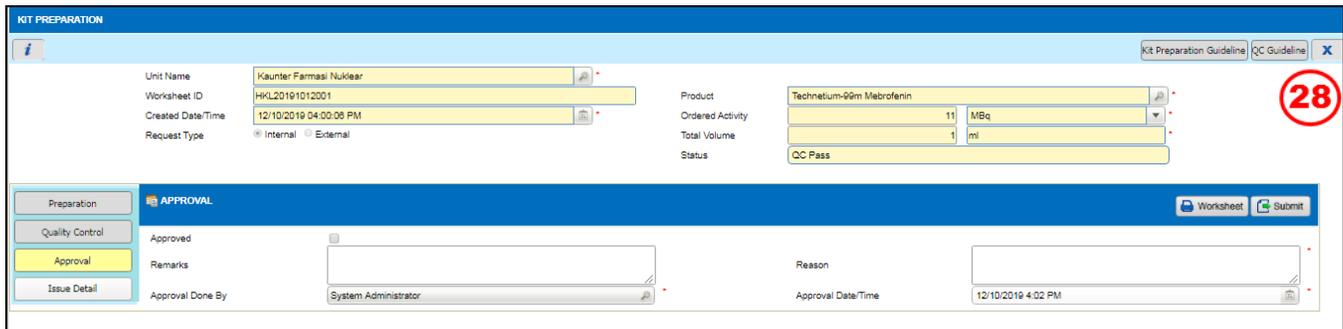
Reason:

Approval Done By: System Administrator  
Approval Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-22 Bulk Preparation

### STEP 27

Click on the  button to submit the approval details



**KIT PREPARATION**

Unit Name: Kaunter Farmasi Nuklear  
Worksheet ID: HKL20191012001  
Created Date/Time: 12/10/2019 04:00:08 PM  
Request Type:  Internal  External

Product: Technetium-99m Mebrofenin  
Ordered Activity: 11 MBq  
Total Volume: 1 ml  
Status: QC Pass

**APPROVAL**

Approved:

Remarks:

Reason:

Approval Done By: System Administrator  
Approval Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-23 Bulk Preparation

### Note

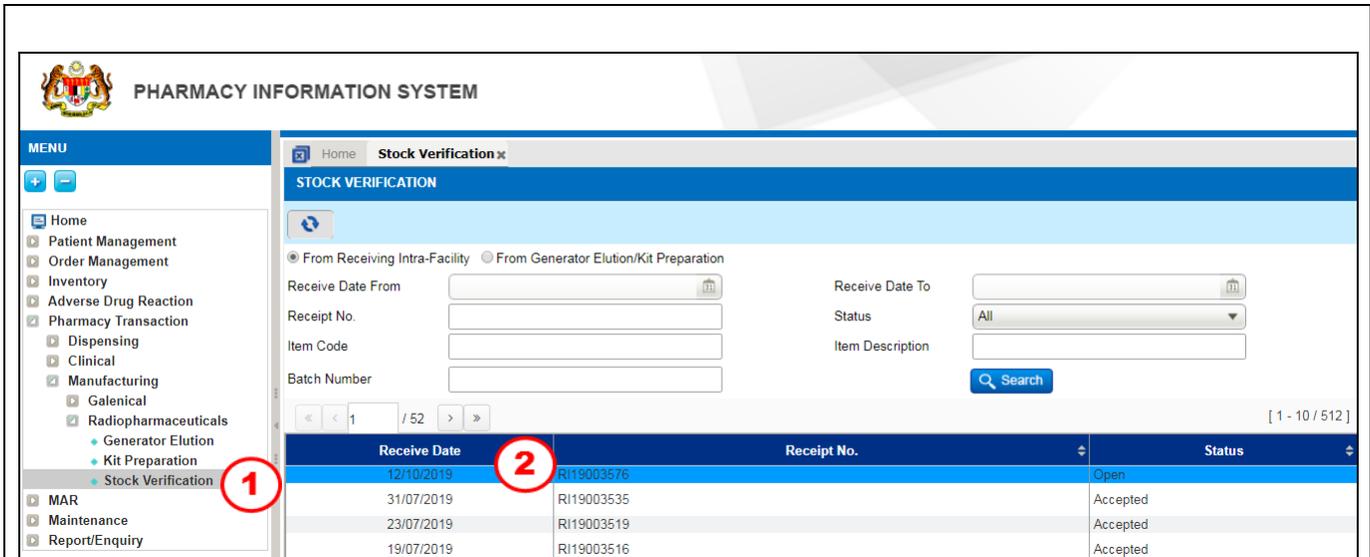
- **Status** will change to **Approved** after the submission had done.

### STEP 28

Click on the  button to close Bulk Preparation screen

### 3.8.3 Stock Verification

Stock Verification screen allow user to verify and measure radiopharmaceuticals stock received from pharmacy store.



Receive Date	Receipt No.	Status
12/10/2019	RI19003576	Open
31/07/2019	RI19003535	Accepted
23/07/2019	RI19003519	Accepted
19/07/2019	RI19003516	Accepted

Figure 3.8.3-1 Stock Verification Listing Page

#### STEP 1

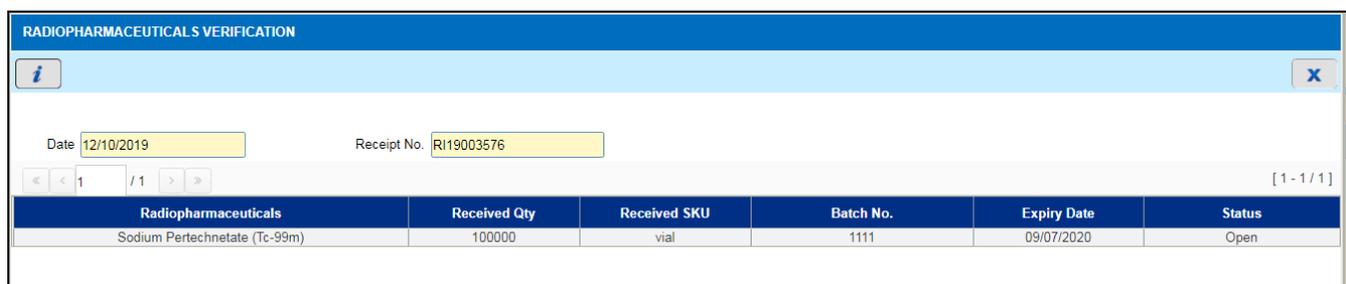
Click on 'Pharmacy Transaction' menu follow by 'Manufacturing' and click on 'Radiopharmaceuticals Stock Verification' sub-menu

#### Note

- Search criteria is provided for **Date** only.
- Click on the  button and system will be displayed related record.

#### STEP 2

Double click on the selected data and system will be displayed screen as per Figure 3.8.3-2



Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

Figure 3.8.3-2 Stock Verification

#### Note

- **Date** and **Receipt No** will be automatically displayed and default by system.
- By default, status is open.

**RADIOPHARMACEUTICALS VERIFICATION**

Date: 12/10/2019
Receipt No.: RI19003576

[ 1 - 1 / 1 ]

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

**STOCK DETAILS**

Calibration Activity	<input type="text"/>	MBq	<input type="text"/>	mCi	Calibration Date/Time	<input type="text"/>	
Expected Activity	<input type="text"/>	MBq	<input type="text"/>	mCi	Expiry Date/Time	<input type="text"/>	
Measured Activity	<input type="text"/>	MBq	<input type="text"/>	mCi	Measured Date/Time	<input type="text"/>	
Activity Variation	<input type="text"/>	%	Volume				<input type="text"/>

**MEASUREMENT DETAILS**

**VERIFICATION DETAILS**

Label Packaging Type	<input type="text"/>	<a href="#">Guideline</a>	<input type="checkbox"/> Accept	<input type="checkbox"/> Reject	
Survey on Surface	<input type="text"/>	<input type="text"/>	Reject Reason <input style="width: 100%;" type="text"/>		
Survey at 1 Meter Distance	<input type="text"/>	<input type="text"/>			
Wipe Test	<input type="text"/>	<input type="text"/>	Done By	<input type="text"/>	Date/Time
Remarks	<input style="width: 100%;" type="text"/>		Updated By	<input type="text"/>	Updated Date/Time

Figure 3.8.3-3 Stock Verification

**STEP 3**

Click on the  **Accept** link to verify stock and system will be displayed screen as per Figure 3.8.3-3

**Note**

- Enter and select **Calibration Activity, Calibration Date/Time, Measured Activity, Measured Date/Time, Wipe Test, Survey at 1 Meter Distance, Expiry Date/Time, and Volume** field. All these fields are mandatory.
- Enter and select **Label Packaging Type, Survey on Surface, Survey at 1 Meter Distance, Wipe Test and Remarks**.
- **Done By, Date/Time, Updated By, and Updated Date/Time** will be automatically displayed by system.

**RADIOPHARMACEUTICALS VERIFICATION**

Date: 12/10/2019 Receipt No: RI19003576

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

Confirm

**STOCK DETAILS**

Calibration Activity: 1 MBq \* 0.03 mCi \* Calibration Date/Time: 22/10/2019 12:26 PM \*  
Expected Activity: 1 MBq \* 0.03 mCi \* Expiry Date/Time: 31/10/2019 12:32 PM \*  
Measured Activity: 1 MBq \* 0.03 mCi \* Measured Date/Time: 22/10/2019 12:26 PM \*  
Activity Variation: 0 % Volume: 1 ml

**MEASUREMENT DETAILS**

Label Packaging Type: White I Guideline  
Survey on Surface: 0.5 mR/hr  
Survey at 1 Meter Distance: 1 mR/hr  
Wipe Test: 1 Bq per cm<sup>2</sup>  
Remarks:

**VERIFICATION DETAILS**

Accept  Reject  
Reject Reason:  
Done By: System Administrator Date/Time: 22/10/2019 12:26 PM \*  
Updated By: System Administrator Updated Date/Time: 22/10/2019 12:26 PM \*

Figure 3.8.3-4 Stock Verification

**STEP 4**

Check on the  checkbox to accept or reject verification

**STEP 5**

Click on the  button to save record

**RADIOPHARMACEUTICALS VERIFICATION**

Date: 12/10/2019
Receipt No.: RI19003576

[ 1 - 1 / 1 ]

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

**STOCK DETAILS**

Calibration Activity	<input type="text" value="1"/> MBq	<input type="text" value="0.03"/> mCi	Calibration Date/Time	<input type="text" value="22/10/2019 12:26 PM"/>
Expected Activity	<input type="text" value="1"/> MBq	<input type="text" value="0.03"/> mCi	Expiry Date/Time	<input type="text" value="31/10/2019 12:32 PM"/>
Measured Activity	<input type="text" value="1"/> MBq	<input type="text" value="0.03"/> mCi	Measured Date/Time	<input type="text" value="22/10/2019 12:26 PM"/>
Activity Variation	<input type="text" value="0"/> %		Volume	<input type="text" value="1"/> ml

**MEASUREMENT DETAILS**

Label Packaging Type:  [Guideline](#)

Survey on Surface:  mR/hr

Survey at 1 Meter Distance:  mR/hr

Wipe Test:  Bq per cm<sup>2</sup>

Remarks:

**VERIFICATION DETAILS**

Accept  Reject

Reject Reason:

Done By:  Date/Time:

Updated By:  Updated Date/Time:

**Figure 3.8.3-5 Stock Verification**

**STEP 6**

Click on the  button to close Radiopharmaceuticals Verification screen

**Note**

- Status will change to Accepted as per Figure 3.8.3-6 at Stock Verification Listing Page.
- Add explanation for Rejected.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL KUALA LUMPUR Logout

**MENU**

- Home
- Patient Management
- Order Management
- Inventory
- Adverse Drug Reaction
- Pharmacy Transaction
- Dispensing
- Clinical
- Manufacturing
  - Galenical
  - Radiopharmaceuticals
    - Generator Elution
    - Kit Preparation
    - Stock Verification
- MAR
- Maintenance
- Report/Enquiry

**STOCK VERIFICATION**

From Receiving Intra-Facility  From Generator Elution/Kit Preparation

Receive Date From:

Receive Date To:

Receipt No.:

Status:

Item Code:

Item Description:

Batch Number:

[ 1 - 10 / 512 ]

Receive Date	Receipt No.	Status
12/10/2019	RI19003576	Accepted
31/07/2019	RI19003535	Accepted
23/07/2019	RI19003519	Accepted
19/07/2019	RI19003516	Accepted
19/07/2019	RI19003515	Accepted
11/07/2019	RI19003504	Accepted
10/07/2019	RI19003501	Accepted
28/05/2019	RI19003476	Accepted
28/05/2019	RI19003474	Accepted
27/05/2019	RI19003469	Accepted

**Figure 3.8.3-6 Stock Verification Listing Page**

## 4.0 Acronyms

Abbreviation	Definition
MOH	Ministry of Health
KKM	Kementerian Kesihatan Malaysia
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
PKU	Packaging Keeping Unit
SKU	Store Keeping Unit
TDM	Therapeutic Drug Monitoring
CDR	Cytotoxic Drug Reconstitution
APPL	Approved Product Purchase List
RPL	Recommended Purchase List
EPO	Electronic Purchase Order

## 5.0 Links to Inventory Modules

No	Module	PDF Links	No	Module	PDF Links
1	<i>Finance</i>	<a href="#">Click Here</a>	15	<i>Internal Indent</i>	<a href="#">Click Here</a>
2	<i>Procurement Standard APPL</i>	<a href="#">Click Here</a>	16	<i>Issue</i>	<a href="#">Click Here</a>
3	<i>Procurement standard LP</i>	<a href="#">Click Here</a>	17	<i>Receive From Supplier</i>	<a href="#">Click Here</a>
4	<i>Procurement Standard Contract</i>	<a href="#">Click Here</a>	18	<i>Receive Inter Facility</i>	<a href="#">Click Here</a>
5	<i>Procurement Standard Quotation</i>	<a href="#">Click Here</a>	19	<i>Receive Intra Facility</i>	<a href="#">Click Here</a>
6	<i>Procurement Standard (RFQ)</i>	<a href="#">Click Here</a>	20	<i>Return to Supplier</i>	<a href="#">Click Here</a>
7	<i>Procurement Non Standard (Requisition Order)</i>	<a href="#">Click Here</a>	21	<i>Return to Supplying Unit</i>	<a href="#">Click Here</a>
8	<i>Quarantine</i>	<a href="#">Click Here</a>	22	<i>Slow Moving</i>	<a href="#">Click Here</a>
9	<i>Product Complaint</i>	<a href="#">Click Here</a>	23	<i>Stock Taking And Verification</i>	<a href="#">Click Here</a>
10	<i>Recalculate Buffer Level</i>	<a href="#">Click Here</a>	24	<i>Stock Transfer</i>	<a href="#">Click Here</a>
11	<i>Expiration And Condemn</i>	<a href="#">Click Here</a>	25	<i>Year End</i>	<a href="#">Click Here</a>
12	<i>Recall Product</i>	<a href="#">Click Here</a>	26	<i>Penalty</i>	<a href="#">Click Here</a>
13	<i>Payment</i>	<a href="#">Click Here</a>	27	<i>IWP Budget</i>	<a href="#">Click Here</a>
14	<i>External Indent</i>	<a href="#">Click Here</a>	28	<i>IWP Order Authorization</i>	<a href="#">Click Here</a>