

PERFORM PHARMACOLOGICAL AND TOXICOLOGICAL TECHNIQUES

UNIT CODE: APB/OS/AB/CR/12/6/A

UNIT DESCRIPTION

This unit specifies the competencies required to perform pharmacological and toxicological techniques. It involves determining classification of drugs, applying pharmacodynamics and demonstrating chemotherapeutic agents. It also involves applying pharmacokinetic, carrying out extraction of toxins and carrying out toxicity testing.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function (to be stated in active)	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements (to be stated in passive voice) <i>Bold and italicized terms are elaborated in the Range</i>
1 Determine classification of drugs	1.1 Drugs are classified as per Pharmacy and Poisons Board (PPB) regulations. 1.2 <i>Classes of drugs</i> are identified based on their mechanisms of action
2 Apply pharmacodynamics	2.1 Drugs are administered in animals as per pharmacological procedures. 2.2 Drugs are administered in an organ as per pharmacological procedures. 2.3 Effects of drugs are observed as per laboratory procedures.
3 Demonstrate chemotherapeutic agents	3.1 <i>Classes of chemotherapeutic agents</i> are identified as pharmacological procedures. 3.2 Mode of action of chemotherapeutic agents is identified as per pharmacological procedures. 3.3 Testing of chemotherapeutic agents is carried out as per laboratory procedures
4 Apply pharmacokinetics	4.1 Methods of drug absorption are identified as pharmacological procedures 4.2 Drug metabolism and excretion is demonstrated as per pharmacological procedures 4.3 Levels of drug in the body of laboratory animals is determined as per laboratory procedures.

5 Carry out extraction of toxins	5.1 Plant and animal samples are collected as per laboratory procedures. 5.2 Toxins are extracted from the samples as per laboratory procedures. 5.3 Toxins are isolated and identified as per laboratory procedures.
6 Carry out toxicity testing	6.1 Toxicity tests are carried out as per laboratory procedures 6.2 Half-life of toxic substances is determined as per laboratory procedures.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE
Classes of drugs include but are not limited to:	<ul style="list-style-type: none"> • Chemical basis • Disease condition • Organ system • Generation • Agonist and antagonist receptor
Classes of chemotherapeutic agents	<ul style="list-style-type: none"> • Antibiotics • Anti-fungals • Anti-protozoans • Anti helminthes • Anti-virals

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skill

- Communication
- Interpersonal
- Analytical

- Critical thinking
- Problem solving
- First aid
- Innovation
- Observation
- manipulative

Required Knowledge

The individual needs to demonstrate knowledge of:

- Classification of drugs
- Extraction techniques
- Cell structure
- Pharmacology
- Toxicology
- Chemistry
- Mathematics

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1 Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Classified and identified classes of drugs 1.2 Administered drugs in animals and in an organ 1.3 Observed effects of drugs 1.4 Identified classes of chemotherapeutic agents 1.5 Identified mode of action of chemotherapeutic agents 1.6 Carried out testing of chemotherapeutic agents 1.7 Identified methods of drug absorption 1.8 Demonstrated drug metabolism and excretion 1.9 Determined levels of drug in the body of laboratory animals 1.10 Collected plant and animal samples 1.11 Extracted toxins from the samples 1.12 Isolated and identified toxins 1.13 Carried out toxicity tests 1.14 Determined half-life of toxic substances
<p>2 Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Well-equipped biology laboratory

	<p>2.2 Science laboratory procedures manual</p> <p>2.3 Laboratory reagents and chemicals</p> <p>2.4 PPEs</p>
3 Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Oral</p> <p>3.2 Written</p> <p>3.3 Observation</p> <p>3.4 Third party</p> <p>3.5 Practical test</p>
4 Context of Assessment	<p>Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.</p>
5 Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

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