

## Guided Module on Chromatography

This completed activity sheet demonstrates the use of research, writing, and learning skills in analysing concepts associated with the topic of chromatography.

**Subject / Course:** Chemistry / SCH4U

**Grade Level:** Grade 12

**Topic:** Organic Chemistry / Chromatography

### **Specific Curriculum Expectations Met:**

- A1.1 formulate relevant scientific questions about observed relationships, ideas, problems, or issues, make informed predictions, and/or formulate educated hypotheses to focus inquiries or research
- A1.8 synthesize, analyse, interpret, and evaluate qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis and whether it is consistent with scientific theory; identify sources of bias and/or error; and suggest improvements to the inquiry to reduce the likelihood of error
- A1.9 analyse the information gathered from research sources for logic, accuracy, reliability, adequacy, and bias
- B2.1 use appropriate terminology related to organic chemistry, including, but not limited to: *organic compound, functional group, saturated hydrocarbon, unsaturated hydrocarbon, structural isomer, stereoisomer, and polymer* [C]

### **Required Resources:**

- Data projector
- Guided Module
- One copy of the *Journal Evaluation of the Antimicrobial Activity of Extract from Buntan Fruit Peel* per student
- One copy of the student assignment that accompanies the article per student
- Instructor solutions – included in this package

### **Content and Teaching Strategy of Lesson:**

- **Overview:** Introduce concept of Journal Articles to students
- **Teaching Strategies:**
  1. Guide students through the “How to Effectively Use a Journal Article” PowerPoint Presentation – provide students with an opportunity to practice paraphrasing
  2. Walk students through the Guide to University Learning to facilitate effective reading strategies
  3. Students read the article *Evaluation of the Antimicrobial Activity of Extract from Buntan Fruit Peel* and respond to questions in handout
- **Consolidation:** Students review answers with each other and instructor; share paraphrasing strategies; connect content in research article to understanding of organic compounds.

**Title of article analysed:** Mokbel, M.S. & Hashinaga, F. (2005). *Evaluation of the antimicrobial activity of extract from Buntan (Citrus grandis Osbeck) fruit peel. Pakistan Journal of Biological Sciences, 8,1090-1095.*

The goal of this exercise is to highlight and demonstrate the transition in Research, Writing and Learning Skills that a student might encounter during the transition from high school to post-secondary education.

- a. *We have provided all the necessary links to the activity on this site. This activity is to be used in conjunction with the downloadable [student template](#)*

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### Step 1. Getting the Article

- a) Go to the [research module](#) and enter search terms in the area of content interest
- b) Type in the search terms “chromatography” AND “antimicrobial”
- c) Select above article
- d) Go to the [Directory of Open Access Journals](#) and select find articles
- e) Type in the search terms “chromatography” AND “antimicrobial”
- f) Select above article

### Step 2. Reading the article

- a) Reading material, highlighting and taking good notes are important skills required in post-secondary education. In order to get an idea of what is required of your students, take them through our [Guide to University Learning activities](#) .

### Step 3. Filling out the student template

- a) Plagiarism concerns are highlighted in this exercise. In order to address this concern, take your students through the [Paraphrasing exercise](#).

For a complete solution of this module please email: [learning@uoguelph.ca](mailto:learning@uoguelph.ca)