

# Analyzing Extracted Burdock Leaves with Colorimetric Assays Toward the Study of its Efficacy Against

Arctium, commonly known as Burdock, is a plant found in Africa, Europe, and Asia. The main use for this plant in this research and experiment is to find a condition in which we can achieve the best yield of antioxidant activity that will allow the neutralization of free stable radical molecules using colorimetric assays. Burdock's high in antioxidant levels of polyphenol that works as a preventative in cellular damage (<sup>1</sup>da Silva LM, ET AL. 2012). Previous data and emerging studies have given thought to Burdocks ability to combat Type 2 Diabetes is the most common form of Diabetes and in which the human body does not use insulin properly and causes the pancreas to make extra insulin. Over time it causes the pancreases to be overwhelmed and in turn renders to be overwhelmed and in turn renders. In the pancreases to be overwhelmed and in turn renders to be pancreases to be overwhelmed and in turn rend leaf extract as a source of antioxidant compounds. First, we will collect various extracts, maceration, 40°C, 90°C, microwave extracts); second, we will assess their radical scavenging activity by DPPH and the total phenolic content. Antioxidants have the ability to bond to free radical molecules and inhibit their side effect; therefore, we hypothesize that the ethanoic or aqueous extracts of the burdock leaf may provide a high amount of antioxidants that could be used for the treatment of radical based disorders such as Type 2 Diabetes. Our study is innovative and simple. It will allow us to select the best antioxidant extract condition toward its evaluation in vitro antiproliferative activity against insulinoma cell line with high glucose and/or high lipid condition that cause excess of oxidative stress and radical species. Alternatively, we will use cell line for culture from a diabetic patient and a normal patient.



# Type 2 Diabetes

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t Condition	Percent Yield % (in grams)	Mass of Extra (in grams)
-2	1.735	
-3	1.73	
-4	3.9575	
-16	2.5925	
-17	1.673	
-18	1.613	
0 340 380 420	460 500 540 580 620 Wellenlänge (nm)	-40 -40 <b>1</b>
ure 1: When the antioxidan re will be a color change fr	nt is going to neutralize the free radical, rom purple to yellow.	Fi th

# DISCUSSION

Initially, the focus for our experiment was based on Leishmania Major, a parasitic infection that causes ulcers. However, we decided to focus on Type 2 Diabetes because in previous studies the root of burdock was said to have the potential to combat this disease. To make our project more unique we decided to test burdock leaves in hopes to find the same outcome.

### **FUTURE WORK**

Hopefully we have paved the way for future scientists to further our project and test anti-proliferative activity against a insulinoma cell line from a diabetic patient and a normal patient. We hope that burdock could eventually be made into a drug that is less toxic and safer for patients of all ages to use, and also lower the amount of type 2 diabetes cases in

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