Antioxidant Activity in Some Common Drink

supervisor : Amina Elgezeery
Teacher: Eman Alshehri
by :Anwar Al-Anezy Al & Amal Jamil
Department of Biochemistry, Collage of Science , king Saud University

قسم الكيمياء الحيوية
Biochemistry Department

Introduction

In the last decade, determination of antioxidant activity and the total content of antioxidants in foods, beverages, dietary supplements and herbal extracts has been increased. This relates to the fact that antioxidants can prevent free radicals, primarily highly reactive oxygen and nitrogen species, from damaging human health [1].

The main characteristic of an antioxidant is its ability to trap free radicals. Highly reactive free radicals and oxygen species are present in biological systems from a wide variety of sources. These free radicals may oxidize nucleic acids, proteins, lipids or DNA and can initiate degenerative disease [2].

Antioxidant scavenge free radicals such as peroxide, hydroperoxide or lipid peroxyl and thus inhibit the oxidative mechanisms that lead to degenerative diseases. Antioxidants have been shown to play an important role in preventing many diseases like cancer, inflammation and brain dysfunction. The natural antioxidants include flavonoids, phenolic acids, polyphenols, vitamins C and E, carotenoids, and other compounds [3].

Tea and coffee are the most popular beverages in the world, have been consumed for thousands of years for their alluring flavors and health benefits. Polyphenols, particularly flavonoids and phenolic acids, are of great abundance in tea and coffee and contribute a lot to their flavor and health properties [4].

Objectives

The aim of the present study was to carry out Determination of total phenolic content in the extract of some common drinks and its antioxidant activity and compare between these drinks

Material and Methods

Material

Powder (Green tea ,red tea ,black coffee, Nescafe , Arabic coffee, and Ginger),
Ascorbic acid , DPPH , and sodium Carbonate

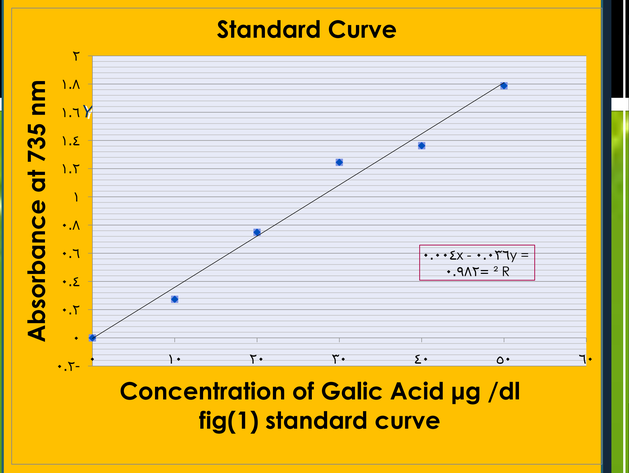
Method

❖**Determination of total phenolic content:**

1) 50 µl was added of extract to a 2ml amber vial with 450 µl of distal water and 250 µl of folin ciocalteu reagent.
2) 1.25 ml of 20% Na2co3 then added .Shaked and allowed to incubate for 20 min at room temperature.
3) Absorbance was been measured at 735 nm versus a water/na2co3 blank. Gallic acid was used as the analytic standard over a concentration rang from 50 to 500 mg/l.

❖Determination of DPPH radical scavenging :

1ml of 1mM DPPH solution in ethanol with 3 ml of samples extract solution was mixed And incubated for 30 minutes in the dark The absorbance was measured at 517 nm versus an ethanol/water (1:3) blank Ascorbic acid was used as a positive control over a concentration rang from 10-50 mg/l



fig(1) standard curve

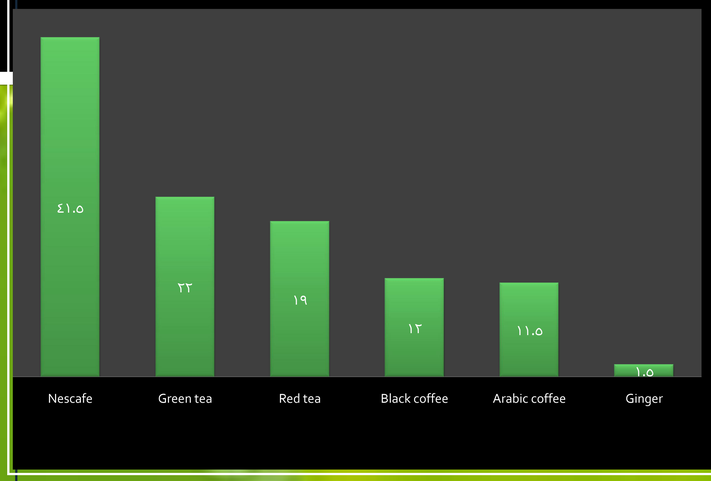
Determination of phenolic compound concentration in different samples

Sample	Concentration of phenolic antioxidant µg/dl
Nescafe	41.5
Green tea	22
Red tea	19
Black coffee	12
Arabic coffee	11.5
Ginger	1.5

Antioxidant activity in the extract as present of DPPH scavenging

Sample	%
Arabic coffee	89.0
Green tea	81.8
Black coffee	79.7
Red tea	73.5
Ginger	65.5
Coffee	35.2

Concentration of phenolic compounds in the extract



Conclusion

The higher Antioxidant Concentration in was detected in Nescafe While the lowest was in ginger . the higher scavenging effect was in arabic coffee and the lowest in coffee the some values Show the Antioxidant Concentration may be Different than the scavenging Activity Because of the Presence of other Compound which my effect the Activity so the arabic coffee and green tea had the activity higher

Reference

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