

0222/4 H9

ESTIMATION OF VITAMIN C IN ALIQUOT OF THE DAILY DIET
OF ADULTS AND PRESCHOOL CHILDREN IN A SLUM URBAN AREA
IN GREATER CAIRO

THESIS

Submitted in Partial Fulfilment of the Requirements
for the Degree of
MASTER OF NUTRITION

By

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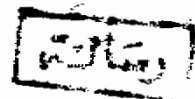
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1 9 8 3



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ACKNOWLEDGEMENT

The author wishes to express her gratitude and appreciation to professor Dr. Mahasen H. Abbas, Professor of Biochemistry and vice-Dean for Education and Students Affair, Faculty of Girls, Ain-Shams University, to Dr. Hekmat E. Aly, Professor of Nutrition and Ex-Director, Nutrition Institute, Cairo, and to Dr. Laila El-Said, Assistant Professor of Biochemistry , Faculty of Girls, for the supervision, advice , and encouragement throughout the course of this work.

Special thanks to Dr. Osman Galal, Professor of Nutrition and Director of Nutrition Institute, Cairo, for providing most of the facilities used in the present study including laboratory facilities. And to Professor Dr. Ahmed M. El-Dakroury, Chairman of the Department of Nutritional Biochemistry and Metabolism, Nutrition Institute for the valuable suggestions and help.

Sincere thanks are also due to Dr. Saad Shehab, Professor of Biochemistry and Chairman of the Department of Nutrition and Food Chemistry, Faculty of Girls, Ain-Shams University, for help and advice.

The author is also grateful to the Director and Staff of the Hoda Shaarawi Kindergarten for the cooperation provided during this work.



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TITLE OF THESIS:

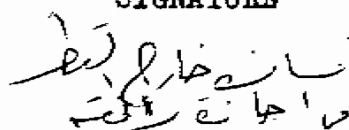
ESTIMATION OF VITAMIN C IN ALIQUOT OF THE DAILY
DIET OF ADULTS AND PRESCHOOL CHILDREN IN A SLUM
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INTRODUCTION

Deficiency of vitamin C , now known as ascorbic acid , is the cause of scurvy. Nowadays , scurvy is uncommon but still a very **serious** disease. A daily intake of 10 mg of ascorbic acid is thought to be more than sufficient to prevent the development of the disease (Anonymous , 1948) .

The main function of the vitamin , in cells , appears to be the balancing of, or setting the redox potential. The oxidised form , dehydroascorbic acid , is readily reduced by the tripeptide glutathione (GSH) , and its main biological role may be to maintain glutathione in the tissues in the oxidised form (GSSG).

Ascorbic acid is also important for the formation of collagen in teeth , bone , cartilage , connective tissue and skin (Albanese , 1959) . and plays an important role in the metabolism of carbohydrate (Scarlett et al. , 1976) , lipid (Kotse , 1975) , protein (Levine, et al. , 1941 ; El-Shobaki,et al. , 1977) , and some minerals as ., iron (Derman, et al. , 1980).

There are several nutritionists who consider high intake of ascorbic acid of benefit to health

and protein . Informations about vitamin C in the Egyptian diets are still lacking. The present study ,was therefore, carried out to evaluate vitamin C content in the diet of three socioeconomic classes.

As it is not yet accepted by several communities to accept and cooperate with data collector , thus the approach to the different families was thought to be through their children attending social and governmental organizations such as kindergartens .

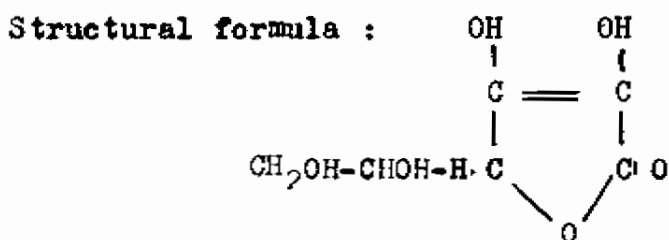
Ascorbic Acid

Drummond (1920) proposed that the compound responsible for the prevention of scurvy to be called vitamin C.

Gyorgyi and Haworth (1933) were the first to use the name " ascorbic acid " for this compound. The name is now adopted by the council on Pharmacy and Chemistry of the American Medical Association , which first introduced the name " cevitic acid " for the vitamin.

The chemical / ^{structure} of vitamin C was established through the combined work of Haworth , Hirst and Co-Workers (1933), and was successfully synthesised by Michael and Kraft in 1933 (cited after Rosenberg, 1945).

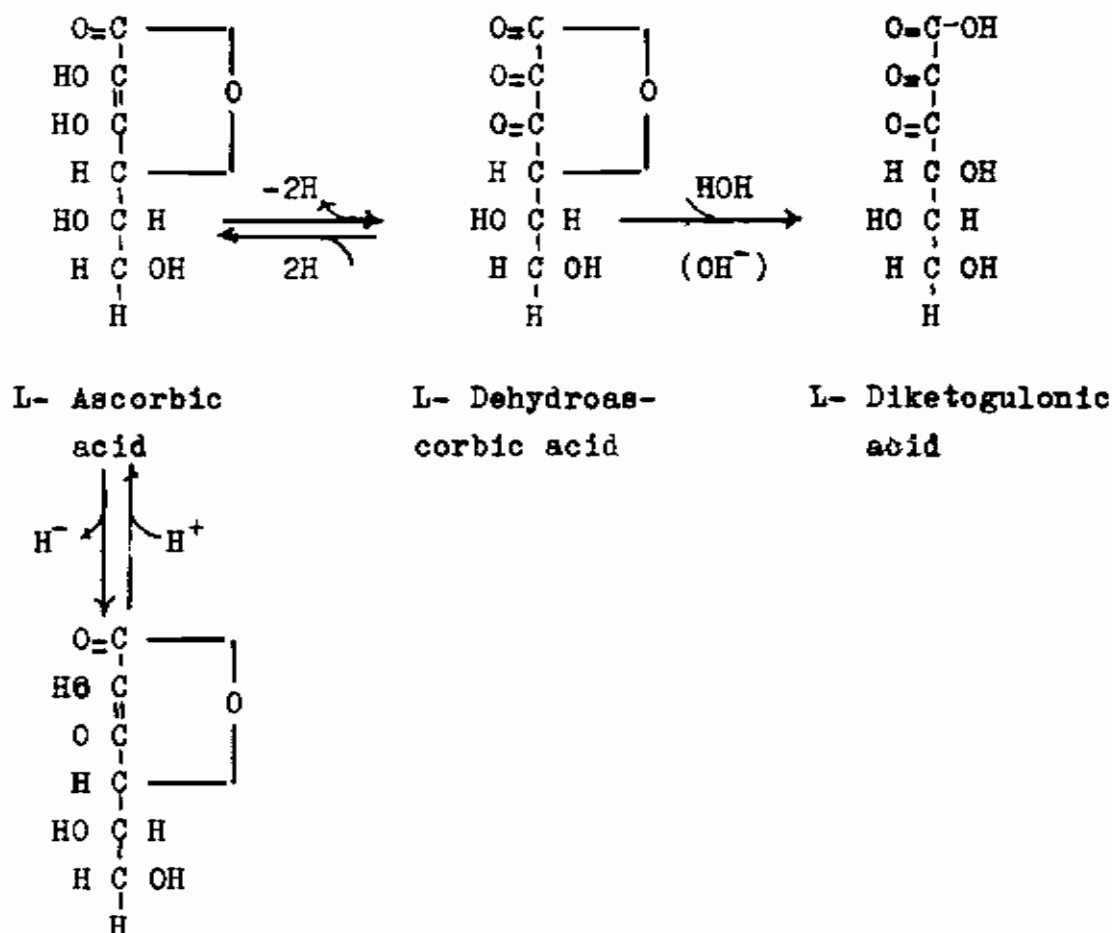
Empirical formula : $C_6 H_8 O_6$.



Chemical name :

L- threo - 2,3,4,5,6-pentahydroxy-2, hexenoic acid-4-lactone .

Ascorbic acid is a hexose, and enediol derivative of L-gulonolactone. It is both an acid and a reducing agent.



Both ascorbic acid and its dehydro form are biologically active. However, diketogulonic acid is inactive and it cannot be reconverted to ascorbic acid. Ascorbic acid is readily oxidized to dehydroascorbic acid and the dehydrogenation by oxygen is catalyzed by metal ions such as copper. Oxidized glutathione (GSSG) is also an effective