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## Analysis of vitamin C (ascorbic acid) in raw, pasteurized and ultra-high temperature cow milk using HPLC – PDA – ESI (+) - MS as a highly sensitive and highly confirmatory analytical tool

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Here our research is related to quantification of vitamin C (Ascorbic Acid, AA) content in raw, pasteurized and ultra-high temperature (UHT) cow milk. For that purpose analytical procedure based on high performance liquid chromatography-photo diode array detector combined with a single quadruple mass analyzer interfaced with electro spray ionization operated in positive ion mode [ HPLC- PDA – ESI (+)- MS] has been developed and validated for separation of AA, identification and quantification. AA was extracted from milk samples using 2.5% solution of meta-phosphoric acid and extraction recoveries ranged from 94-104%. Separation of the analyte was carried out using C-18 column and isocratic elution of mobile phase consisting of 0.1 M acetic acid:acetonitrile (98:2, v/v). Confirmatory identification for presence of AA in investigated milk samples were achieved using UV and MS data obtained from reference standard and sample at the same retention time. For quantification analysis, HPLC- PDA – ESI (+)- MS (PDA mode ) was used and the calibration curves for AA were constructed and was linear with R2=0.9998. Limit of detection (LOD) and limit of quantification (LOQ) were 0.052 mg/L and 0.1 mg/L, respectively. Obtained validation parameters showed that the method appears sensitive, accurate, precise, specific and relatively simple in both sample preparation and equipment. The procedure provides a very useful tool for rapid determination of AA in cow milk and has been successfully applied to study the effect of storage conditions on its content and the data will be in discussion.

## **Biography**

Walid A S Gafour is an Assistant Professor at the Food Technology Research Institute (Dairy Science department), Agricultural Research Center, Egypt. Currently, he is the Director of Total Quality Management and Laboratories in Kuwait Dairy Company, Kuwait. He is also a Consultant (Freelancer) in Integrated Management System Services. He has wide experience in the food and dairy technology, chemical, physical, rheological and microbiological analysis of water, food and dairy products.

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