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Application of high performance liquid chromatography with spectrofluorimetric detection for determination of human milk retinol

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Abstract:

World health organization has introduced concentration of vitamin A in breast milk as a proper indicator for characterization of vitamin A deficiency in lactating mothers and their infants (<6 mo). A normal phase high performance liquid chromatography with spectrofluorometric detection as a specific and sensitive detector was used for characterization of all-trans retinal from 13-Cis retinal. The method was sensitive (0.009 ppm) and accurate ($1 \pm 0.054 \mu \text{ mol/l}$) and had a good recovery percentage (99.36%). This method was more better than before methods and was compatible with the other useful methods. Effect of freezing and defreezing on all-trans retinol content of milk sample was investigated. The result was interesting, whatever all-trans retinol content was bigger, it's destroying was bigger too. Because of that reason, day today reproducibility wasn't good. Standard of retinol was 95% all-trans and pure so we should use this method because two retinol isomers wasn't separated from each other by reversed phase chromatography and UV detection.

Keywords:

Determination . All-trans retinol . Spectrofluorometric detection

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