

# Development and validation of an effective and efficient UV spectroscopic in-house method to determine DHA / EPA level as a mixture in soft gelatine capsule (medicament)

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Docosahexaenoic acid (DHA) and Eicosapentaenoic acid (EPA) are health beneficial omega-3 fatty acids which can be isolated from marine fish oils. DHA and EPA are commonly used as nutritious ingredients of several infant food products. DHA containing multivitamins are supplements for pregnant or lactating women. Analysis of DHA/EPA level as a mixture of multivitamins at the production line is more successful than the analysis of those in finished products. Therefore, an efficient in-house analytical method must be available to obtain quick results for the medicaments to continue with the production process. In the present study we have developed and validated a simple, efficient and cost effective UV spectrometric method for determining DHA/EPA content in soft gelatine capsules. DHA/EPA in vitamin capsules were extracted into chloroform and qualitatively identified by FT-IR spectroscopy. DHA/EPA level was quantified measuring the UV absorbance at 241 nm against the negative control which contains only excipients. The linearity of the method was achieved at 0.999 correlation coefficient. The mean recovery of the method was 99.03 %. The relative standard deviation of the repeatability and intermediate precision were 0.88 and 0.52 respectively. ANOVA tests revealed no difference between two data populations. The method was simple, precise and accurate, and it could be successfully applied for the determination of DHA/EPA level as a mixture in multivitamin capsules at the production line.

**Keywords:** docosahexaenoic acid, eicosapentaenoic acid, medicament