DETERMINATION BY REVERSED-PHASE HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY OF VITAMIN A IN FORTIFIED MILK


Vitamin A is an essential micronutrient for the maintenance of healthy, especially reproduction, immune system and cellular differentiation. All-trans-retinol is the most active form this vitamin, but foods such as milk are most commonly fortified with retinol acetate or retinol palmitate. The aim of the study was determine the content of vitamin A in fortified milks and compare them with the nutrition facts reported on the respective packaging. Were analyzed thirty commercial fortified milk sold in the city of Camaçari, Bahia, Brazil. Fortified milk samples (500µl) were stirred with absolute ethanol (500µl) and submitted to saponification with KOH (1000µl). The mixture was again stirred and immersed in warm water (45°C/2h). After, n-hexane (1000µl) was added followed by centrifugation (4000 x g for 10 min). The clear organic top layer was removed and the proceedings repeated two times. Vitamin A determination by HPLC-DAD was carried out using X-Terra C18 column (150 x 3.9 mm i.d., 5µm) and mobile phase 100% methanol (1ml/min). All analyses were repeated three times. The results showed that vitamin A ranged from 1.74 to 14.66 µg/g and the nutrition facts printed on the packaging regarding vitamin A were correct for 4 samples. Nine samples had higher vitamin A and seventeen had lower vitamin A than those declared on the label (vitamin A adequacy values: min. 36% and max. 181%). The results indicate that sanitary surveillance programs need to monitor these products since the incorrect amount of nutrients may affect the population’s healthy, mainly child’s.