IN VITRO AVAILABILITY OF FOLATES IN INFANT FOOD

1Fernández-Palacios L; 1Díaz- Ballester R.; 1López -Nicolás R; 1Frontela–Saseta C; 1Ros-Berruezo G

1 Department of Food Science and Nutrition, Faculty of Veterinary Sciences, Regional Campus of International Excellence “Campus Mare Nostrum”, University of Murcia, Spain

The importance of folates and the increasing development of studies related to this vitamin are the result of the relationship between health and a correct nutrition. At the age of six month, most infants begin to eat supplementary semi-solid foods. At this stage, homogenized infant foods, also known as “homogenized Beikosts” play a major role in their nutrition [1] being is fundamental to provide high quality energy, taking into account that a 6-month-old infant obtains around 20% of total daily energy from beikost, reaching 50% at 10 months life [2]. The daily recommendation intake (DRI) for this vitamin during the first year is 450-500 µg/day [3], but it must be taken into account that not all the ingested vitamin is absorbed in the intestine [4].

Therefore, the bioavailability of folate is commonly estimated at 50% of folic acid when establishing food recommendations, but this should be considered a rough estimate, as data on the bioavailability of food folate vary between 30% and 98% [5]. Some factors influencing in that fluctuation are the multiple isoforms of this vitamin and variations of the susceptibility to degradation during processing, the initial amount or the influence of environmental factors such as pH, oxygen, antioxidants, metals, ions, etc. [6] Therefore, the aim of this study was to evaluate the total in vitro availability of folate and its mono glutamate isoforms in homogenized beikosts. The analysis of different homogenized beikosts and 6 different infant’s cereals was performed by HPLC equipped with fluorescent detector. Previously, an in vitro gastrointestinal digestion of samples was performed [7]. Results indicated that weaning foods with the highest folate availability were those elaborated with meat or fish with a vegetable base, probably due to the high folate content in the different ingredients used Specifically, from the 10 different samples of “homogenized Beikosts” those with the highest in vitro availability were chicken with rice, beef liver and vegetables and hake with vegetables. When infant’s cereals were analyzed, the highest folate in vitro availability was observed in the sample made with cereals and fruits.

References.