

O27 - *In vitro* digestions to predict the glycemc index of rice

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In vitro digestion systems (both static and dynamic) are very useful models to predict the digestion of food, and its constituents. These systems are inexpensive, practical and do not bring any ethical issues, when compared with *in vivo* assays [1]. Therefore, *in vitro* digestion systems can be used to predict the glycemc index of food (e.g., rice). This parameter can be used to predict the blood glucose response after the ingestion of food and can therefore be used to select the appropriate diet for people that suffer from some kind of glucose intolerance. In this work, the *in vitro* digestion of rice samples (e.g. brown rice with quinoa) was studied to predict their glycemc index. The glycemc index of rice was determined based on the protocol developed by Goñi I *et al* [2] with some modifications based on the work of other authors [3]. Briefly, five grams of rice were digested using a standardized *in vitro* digestion protocol [4] and samples were taken every 30 minutes. The samples were analyzed using the glucose oxidase-peroxidase method to determine the hydrolyzed starch. The digestion curve was then fitted to a non-linear model ($C = C_{\infty} * (1 - e^{-kt})$). Furthermore, a standard food (e.g., starch) was used and the area under the curve of both rice and starch was determined to calculate the glycemc index of rice [2]. Total starch was also determined using the amyloglucosidase/ α -amylase procedure and the amylose content was determined based on the protocol developed by other authors [5]. It was found that brown rice with quinoa, with 38.88 ± 1.19 % of total starch and 1.49 ± 0.17 % of amylose, has a glycemc index of 89.12 and therefore this rice, contrary to what would be expected, can be classified as a high glycemc index food (i.e., glycemc index above 70) [6]. This high glycemc index value can be explained by the low percentage of amylose content [3].

Acknowledgements: Ana C. Pinheiro acknowledge the Foundation for Science and Technology (FCT) for her fellowship (SFRH/BPD/101181/2014). This work was supported by Portuguese Foundation for Science and Technology (FCT) under the scope of the strategic funding of UID/BIO/04469/2013 unit, and COMPETE 2020 (POCI-01-0145-FEDER-006684) and BioTecNorte operation (NORTE-01-0145-FEDER-000004) funded by the European Regional Development Fund under the scope of Norte2020 - Programa Operacional Regional do Norte. The authors would also like to thank the investment project n° 017931, co-funded by Fundo Europeu de Desenvolvimento Regional (FEDER) through Programa Operacional Competitividade e Internacionalização (COMPETE 2020).

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