

Supplementary Material S4 Phytic acid determination:

The phytic acid sample to be tested is digested with sulfuric acid and nitric acid, followed by reaction with molybdate and 1-amino-2-naphthol-4-sulfonic acid reagent, and the phosphate content was measured using a UV-Vis spectrophotometer (TU-1810D, Beijing Purge General Instrument Co., Ltd.) in single-beam mode at a wavelength of 640 nm, with the entire analysis calculated in terms of P^[1].

[1] G. Marolt, M. Kolar, Analytical methods for determination of phytic acid and other inositol phosphates: A review, *Molecules* 26(1) (2020) 174.