

## Supplementary Information

Figure 1 - Quantification of vitamin D2 by HPLC in the supernatants and pellets of lab-scale microcapsule samples subjected to a boiling water test. Results are expressed as means from three replicates with standard error. The statistical significance of sample means was evaluated with a one-way ANOVA with significance level ( $p < 0.05$ ), and pairwise comparisons of sample means using a Tukey HSD test ( $p < 0.05$ ). Means assigned a unique alphabetical letter are statistically different according to the Tukey HSD test.

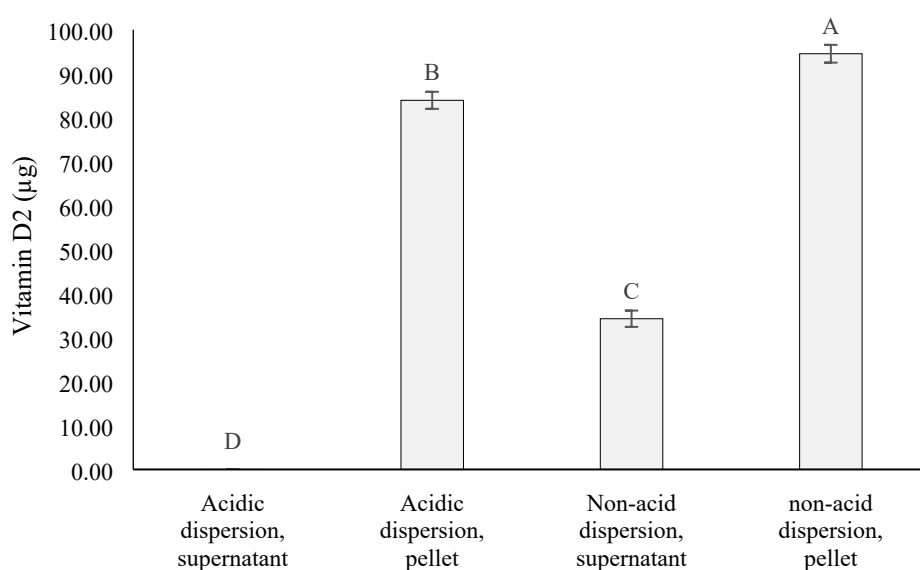


Table 1 - Quantification of vitamin D2 by HPLC in the supernatants and pellets of pilot-scale microcapsule sample subjected to a boiling water test. Statistical analysis was not appropriate due to lack of detection of vitamin D2 in sample supernatants. The sample was prepared in triplicate.

Vitamin D2			
Sample replicate	Retained (% of detected)	Released (% of detected)	Recovery (% of added)
1	100	0	91.7
2	100	0	97.2
3	100	0	97.8

Figure 2 - SEM microscopy of ruptured spray dried particle showing interior morphology of shell wall.

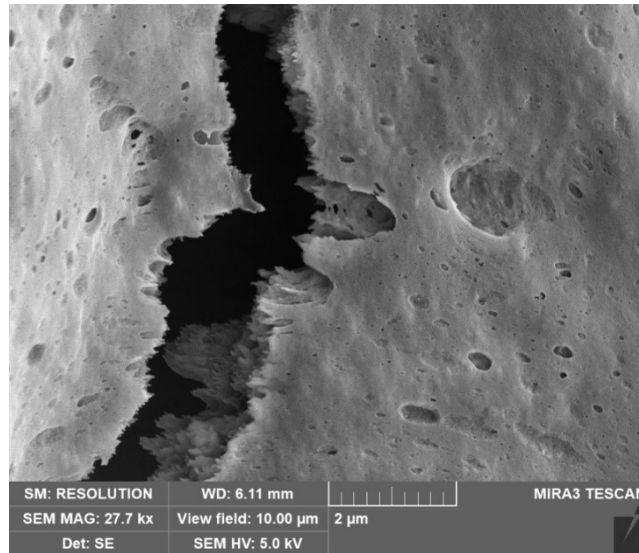
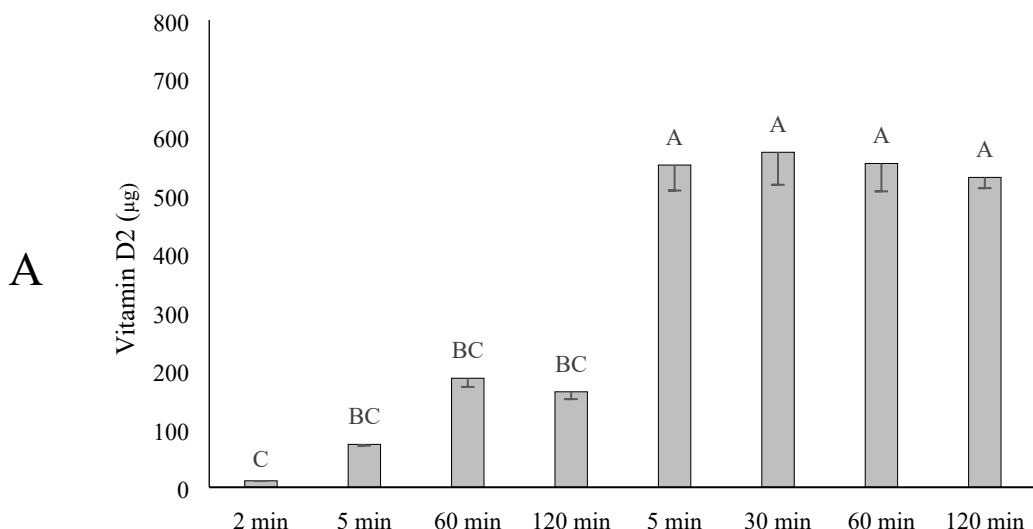


Figure 3 – Quantification of vitamin D2 by HPLC in sample supernatants and pellets through stages of digestion of microcapsules. Panels A and B correspond to released (supernatant) vs retained (pellet) vitamin D2, respectively. Results are expressed as means from three replicates with standard error. The statistical significance of sample means between phases of digestion was evaluated with a one-way ANOVA with significance level ( $p < 0.05$ ), and pairwise comparisons using a Tukey HSD test ( $p < 0.05$ ). Means assigned a common letter are not statistically different according to the Tukey HSD test.



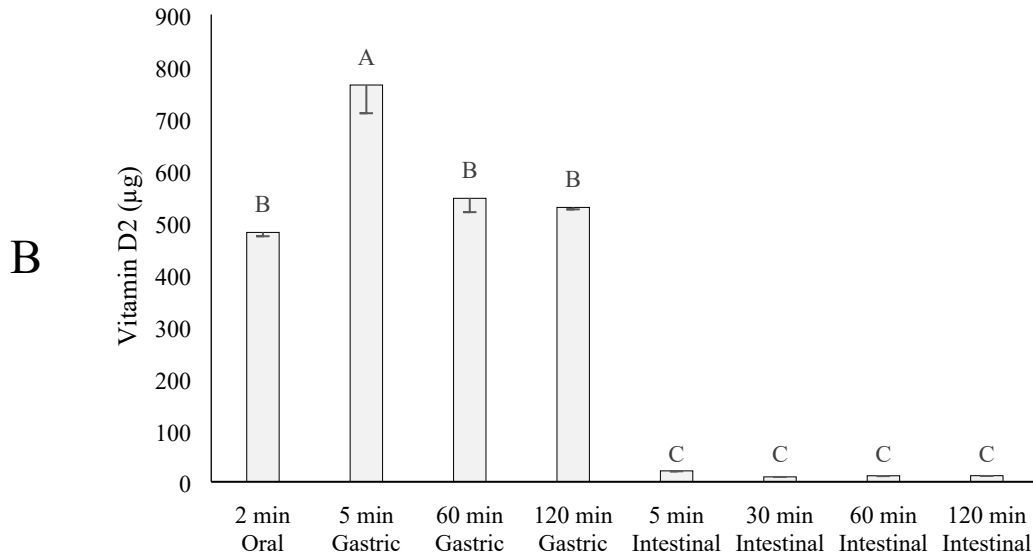
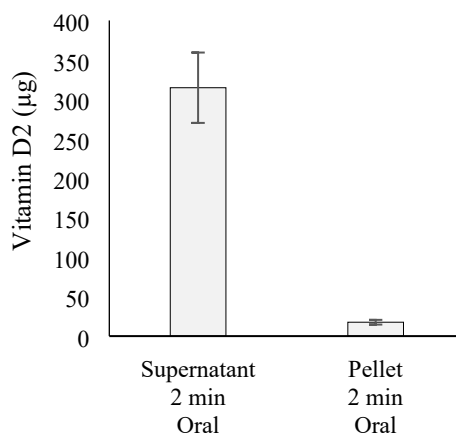
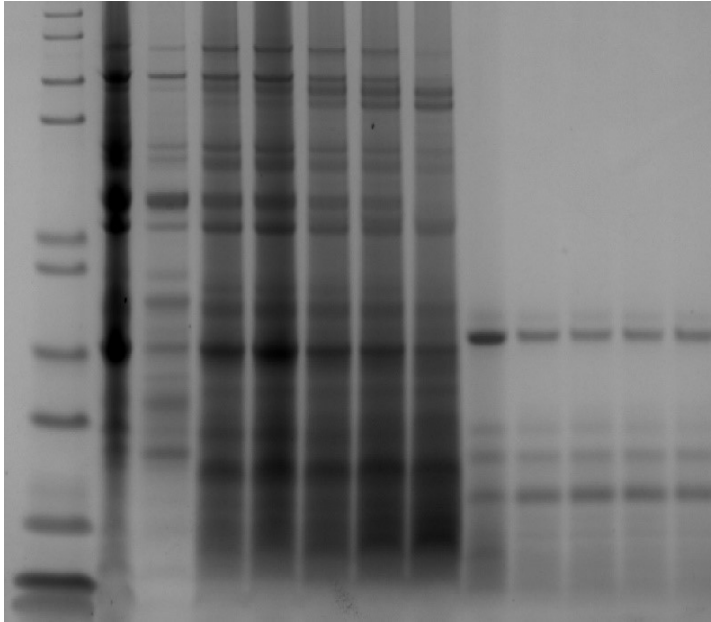


Figure 4 – Quantification of vitamin D2 by HPLC in the supernatant and pellet of a comparative, unencapsulated control sample at Oral phase of digestion. Results are expressed as means from three replicates with standard error. The original loading of vitamin D2 in the sample was 712 µg and the total recovery was 47%.

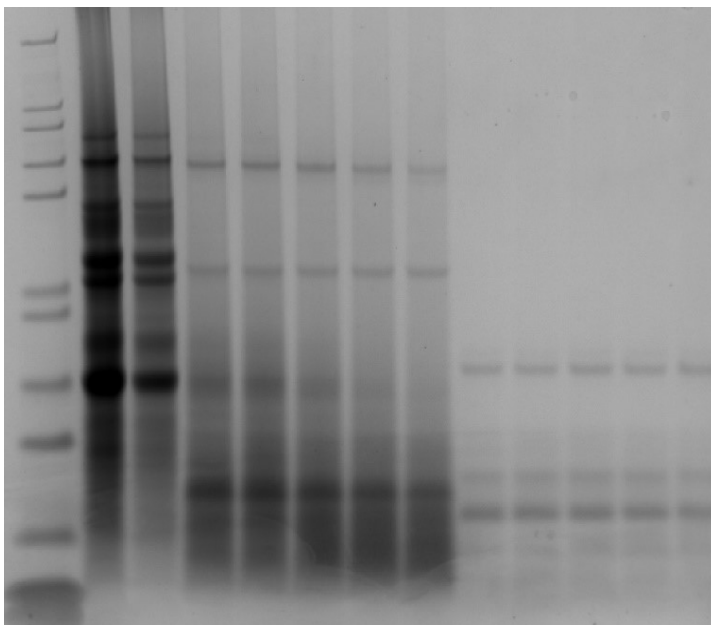


Raw images of SDS-PAGE gels shown in Figure 4 in the main article

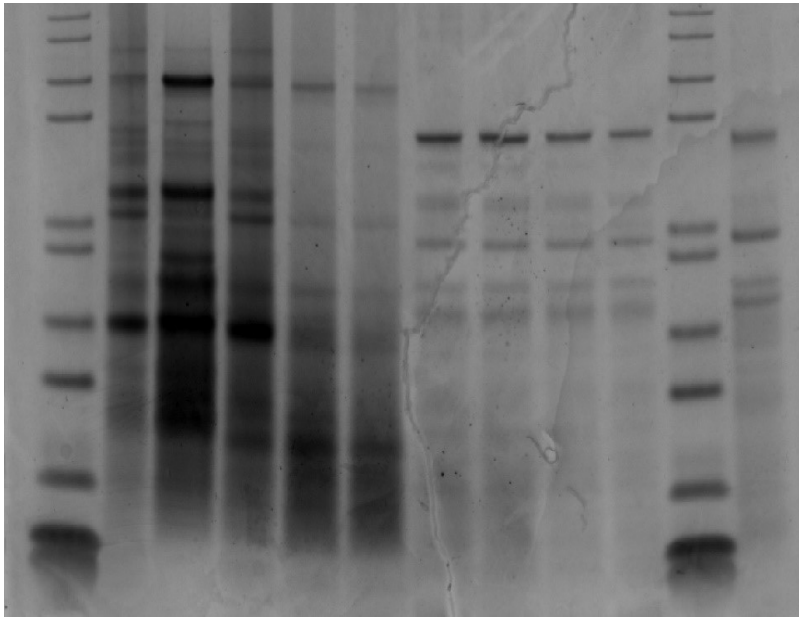
PPI



DISP



## Microcapsule



Gel from which lane 'E' was cropped (right-most lane) for inclusion in Figure 4, showing the migration of protein bands corresponding to digestive enzymes.

