## Supplementary Materials

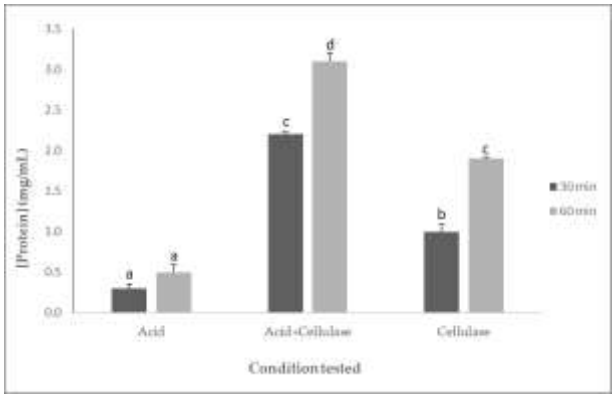


**Figure S1.** Protein concentration of the extract after treatment with an acid solution, or after hydrolysis with cellulase, or after being submitted to a combination of both conditions, after 30 and 60 min. Different letters refer to significant differences at $p<0.05$ (ANOVA One-Way followed by Tukey's post hoc test).

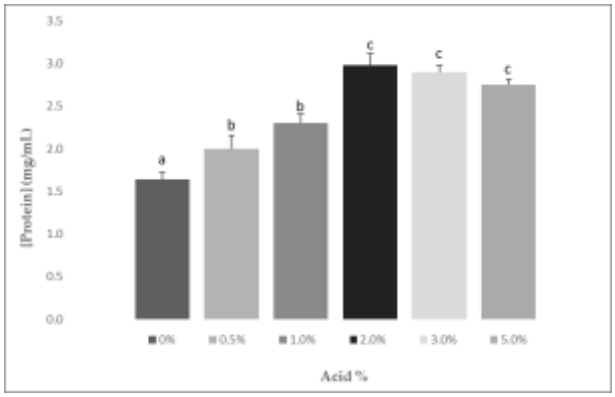


**Figure S2.** Protein concentration of the extract after being treated with different % of an acid solution for 1 h, followed by a cellulase hydrolysis. Different letters refer to significant differences at $p<0.05$ (ANOVA One-Way followed by Tukey's post hoc test).

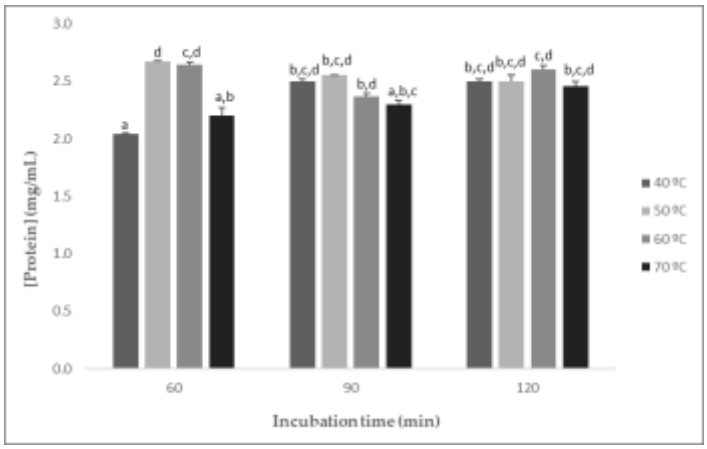


**Figure S3.** Protein concentration of the extract after being incubated with a 2% acid solution, followed by a cellulase hydrolysis at different temperatures. Different letters refer to significant differences at $p<0.05$ (ANOVA One-Way followed by Tukey's post hoc test).

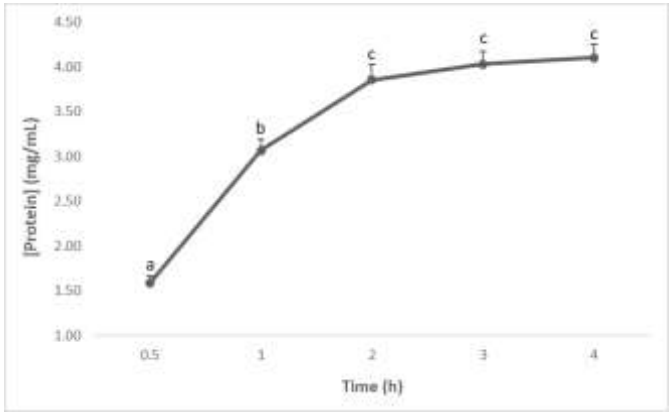


**Figure S4.** Protein concentration of the extract produced by treatment with a 2% acid solution, followed by a hydrolysis with 2% cellulase. Different letters refer to significant differences at $p<0.05$ (ANOVA One-Way followed by Tukey's post hoc test).

**Table S1.** Box-Behnken factorial design matrix for four factors and hydrolysate yield and protein release for each run.

| Run | Factors | | | | Evaluated characteristics | |
|---|---|---|---|---|---|---|
| | Hydrolysis temperature (ºC) ($X_A$) | % Cellulase ($X_B$) | % Protease ($X_C$) | Hydrolysis time (h) ($X_D$) | Hydrolysate yield (%) | Protein release (%) |
| 1 | 50 | 1.67 | 3.33 | 2 | 69.21 ± 0.01 | 74.08 ± 0.01 |
| 2 | 40 | 3.33 | 1.67 | 4 | 60.98 ± 0.02 | 55.65 ± 0.32 |
| 3 | 50 | 3.33 | 3.33 | 4 | 72.04 ± 0.24 | 71.39 ± 0.54 |
| 4 | 50 | 5.00 | 3.33 | 2 | 68.12 ± 0.12 | 77.91 ± 0.20 |
| 5 | 40 | 5.00 | 3.33 | 4 | 66.63 ± 0.23 | 69.56 ± 0.17 |
| 6 | 50 | 3.33 | 1.67 | 6 | 47.52 ± 0.12 | 76.07 ± 0.03 |
| 7 | 50 | 5.00 | 3.33 | 6 | 76.02 ± 0.02 | 77.60 ± 0.18 |
| 8 | 60 | 3.33 | 1.67 | 4 | 60.04 ± 0.24 | 79.42 ± 0.45 |
| 9 | 40 | 3.33 | 5.00 | 4 | 58.95 ± 0.05 | 60.65 ± 0.63 |
| 10 | 60 | 1.67 | 3.33 | 4 | 60.74 ± 0.14 | 70.47 ± 0.27 |
| 11 | 50 | 3.33 | 3.33 | 4 | 72.30 ± 0.10 | 75.70 ± 0.41 |
| 12 | 60 | 5.00 | 3.33 | 4 | 52.20 ± 0.00 | 57.38 ± 0.12 |
| 13 | 50 | 3.33 | 1.67 | 2 | 47.31 ± 0.09 | 50.63 ± 0.10 |
| 14 | 50 | 5.00 | 1.67 | 4 | 47.00 ± 0.13 | 45.89 ± 0.25 |
| 15 | 40 | 3.33 | 3.33 | 6 | 50.35 ± 0.01 | 64.01 ± 0.35 |
| 16 | 50 | 3.33 | 3.33 | 4 | 72.39 ± 0.05 | 68.70 ± 0.14 |
| 17 | 40 | 3.33 | 3.33 | 2 | 49.25 ± 0.20 | 58.95 ± 1.21 |
| 18 | 50 | 3.33 | 5.00 | 6 | 58.40 ± 3.18 | 61.66 ± 2.52 |
| 19 | 40 | 1.67 | 3.33 | 4 | 49.18 ± 0.00 | 58.99 ± 0.85 |
| 20 | 50 | 3.33 | 5.00 | 2 | 68.80 ± 0.07 | 71.04 ± 1.32 |
| 21 | 60 | 3.33 | 5.00 | 4 | 67.76 ± 0.42 | 82.13 ± 0.12 |
| 22 | 50 | 1.67 | 3.33 | 6 | 61.67 ± 0.25 | 71.19 ± 0.84 |
| 23 | 60 | 3.33 | 3.33 | 2 | 55.38 ± 2.90 | 69.37 ± 1.21 |
| 24 | 50 | 1.67 | 5.00 | 4 | 73.35 ± 0.06 | 71.05 ± 1.48 |
| 25 | 60 | 3.33 | 3.33 | 6 | 67.10 ± 0.03 | 76.08 ± 1.45 |
| 26 | 50 | 5.00 | 5.00 | 4 | 74.54 ± 1.20 | 66.54 ± 0.83 |
| 27 | 50 | 1.67 | 1.67 | 4 | 55.57 ± 0.42 | 56.22 ± 0.15 |

**Table S2.** Hidden peaks retention volume, resulting from the model Local Maximum.

| Peak number | Retention volume (ml) |
|---|---|
| 1 | 25.70 |
| 2 | 25.80 |
| 3 | 25.83 |
| 4 | 25.86 |
| 5 | 25.89 |
| 6 | 25.92 |
| 7 | 25.95 |
| 8 | 25.97 |
| 9 | 26.02 |
| 10 | 26.24 |
| 11 | 26.33 |
| 12 | 26.45 |
| 13 | 26.48 |
| 14 | 26.58 |
| 15 | 26.64 |
| 16 | 26.66 |
| 17 | 26.70 |
| 18 | 26.75 |
| 19 | 26.78 |
| 20 | 26.80 |
| 21 | 26.81 |
| 22 | 26.83 |
| 23 | 26.86 |
| 24 | 26.99 |
| 25 | 27.05 |
| 26 | 27.26 |
| 27 | 27.37 |
| 28 | 27.41 |
| 29 | 27.58 |
| 30 | 27.87 |
| 31 | 27.89 |
| 32 | 28.01 |
| 33 | 28.19 |
| 34 | 28.49 |
| 35 | 36.39 |
| 36 | 36.41 |
| 37 | 38.16 |
| 38 | 41.32 |
| 39 | 43.22 |
| 40 | 49.43 |
| 41 | 49.44 |
| 42 | 53.19 |