Electronic Supplementary Material (ESI) for Food & Function.


**Table 1S.** Molecular weight (MW), retention time (RT), precursor ions (Q1), product ions (Q3) and collision energies (CE) for eight species of aldehyde DNPH derivatives.

| Compounds | MW | RT (min) | Q1 (m/z) | Q3 (m/z) | CE (V) |
|---|---|---|---|---|---|
| Acrolein | 236.1 | 12.1 | 235 | 167 | -15 |
| Propanal | 238.1 | 13.3 | 237 | 163 | -15 |
| *trans*-2-Pentenal | 264.1 | 19.2 | 263 | 186 | -18 |
| Hexanal | 280.2 | 24.0 | 279 | 152 | -25 |
| 4-Hydroxy-2-hexenal | 294.1 | 8.3 | 293 | 167 | -18 |
| *trans*, *trans*-2,4-Octadienal | 304.1 | 26.9 | 303 | 181 | -20 |
| *trans*, *trans*-2,4-Decadienal | 332.2 | 32.6 | 331 | 181 | -18 |
| 4-Hydroxy-2-nonenal | 336.2 | 18.1 | 335 | 167 | -20 |

**Table 2S.** Class composition (%) of total lipids extracted from digested meal during the simulated gastrointestinal digestion process without lipase.

| Sample | TAG | FFA | DAG | CHO | MAG | PoL |
|---|---|---|---|---|---|---|
| SG-0 | 86.62a±0.28 | 0.39a±0.03 | 0.13a±0.02 | 0.12a±0.01 | 0.10c±0.02 | 12.65a±0.33 |
| SG-1 | 86.66a±1.03 | 0.22b±0.03 | 0.14a±0.04 | 0.12a±0.02 | 0.20b±0.03 | 12.65a±0.18 |
| SG-2 | 87.15a±0.21 | 0.11c±0.02 | 0.17a±0.02 | 0.13a±0.02 | 0.13c±0.04 | 12.32a±0.19 |
| SI-0 | 86.91a±0.57 | 0.13c±0.03 | 0.14a±0.02 | 0.11a±0.01 | 0.29a±0.02 | 12.42a±0.31 |
| SI-1 | 87.26a±0.37 | 0.12c±0.02 | 0.13a±0.03 | 0.14a±0.02 | 0.34a±0.03 | 12.01a±0.28 |
| SI-2 | 87.26a±0.27 | 0.21b±0.03 | 0.17a±0.02 | 0.15a±0.01 | 0.28a±0.03 | 11.93a±0.25 |

Values in the same column with different lower-case letters (a-c) are significantly different at $P < 0.05$. Samples SG-0, SG-1, SG-2, SI-0, SI-I, SI-2 are lipids recovered from digested meal of simulated gastric digestion for 0, 1, 2 h, simulated intestinal digestion for 0, 1, 2 h, respectively. Abbreviations are: TAG, triacylglycerol; FFA, free fatty acid; DAG, diacylglycerol; CHO, cholesterol; MAG, monoacylglycerol; PoL, polar lipid.

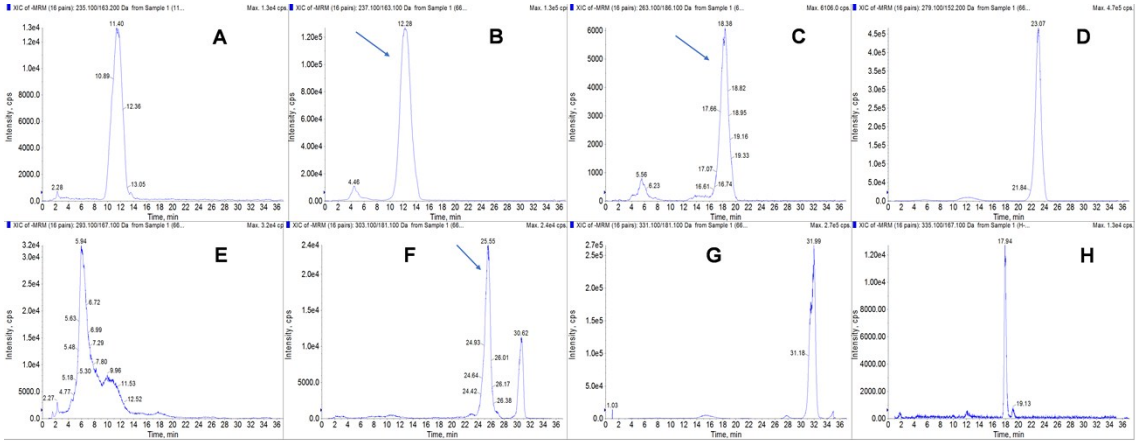


**Figure 1S.** Extraction chromatograms of eight species of aldehyde DNPH derivatives in digested meal without lipase. A-H represent acrolein, propanal, *trans*-2-pentenal，hexanal, 4-hydroxy-2-hexenal, *trans*, *trans*-2,4-octadienal, *trans*, *trans*-2,4-decadienal，4-hydroxy-2-nonenal, respectively.

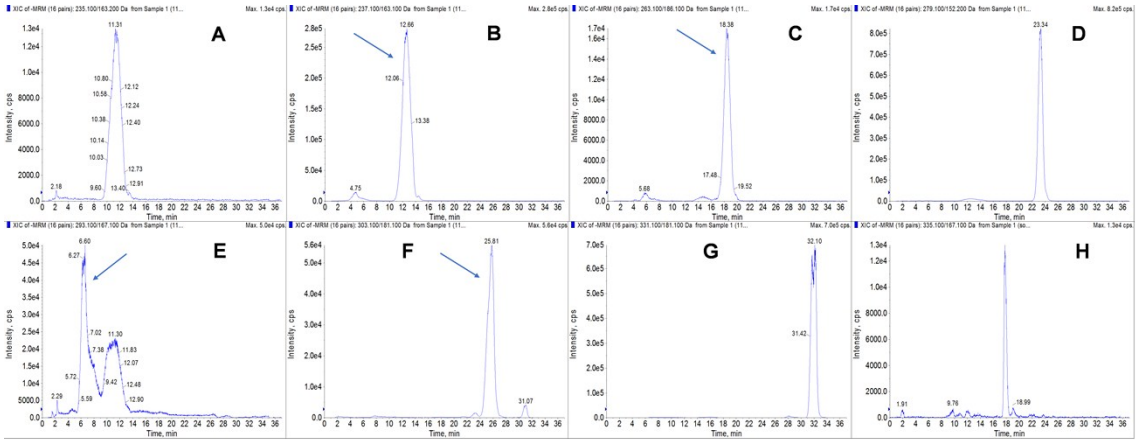


**Figure 2S.** Extraction chromatograms of eight species of aldehyde DNPH derivatives in digested meal with lipase. A-H represent acrolein, propanal, *trans*-2-pentenal，hexanal, 4-hydroxy-2-hexenal, *trans*, *trans*-2,4-octadienal, *trans*, *trans*-2,4-decadienal，4-hydroxy-2-nonenal, respectively.