Understanding dissolution rates via continuous flow systems with physiologically relevant metal ion saturation in lysosome – Supplementary Material

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Table S1: Descriptors and properties of tested engineered nanomaterials. Reproduced from Wohlleben et al. (Nanoscale, 2019).

| Substance | PSF pH4.5 |
|-----------|-----------|
| NaCl      | 6650      |
| Na2HPO4   | 142       |
| Na2SO4    | 71        |
| CaCl2 2H2O| 29        |
| KH-Phthalate| 4085    |
| Glycine   | 450       |
| alkylbenzyldimethylammonium chloride (ABDC) | 50 |

Table S2: Chemical composition of phagolysosomal simulant fluid (PSF) as reproduced from Keller et al. (Sci. Rep., 2020)

| Substance | PSF pH4.5 |
|-----------|-----------|
| NaCl      | 6650      |
| Na2HPO4   | 142       |
| Na2SO4    | 71        |
| CaCl2 2H2O| 29        |
| KH-Phthalate| 4085    |
| Glycine   | 450       |
| alkylbenzyldimethylammonium chloride (ABDC) | 50 |
Figure S3: Dissolution kinetic of three different Aluminosilicates. Grey indicates the dissolution of Si ions, whereas red indicates the dissolution kinetic of Al ions. A) Bentonit NM600, B) Kaolin JRC-IRMM385, C) Kaolin (from nanoGRAVUR).
Figure S3: Comparison of SA/V vs. dissolution rate k between the fixed flow-rate dissolution setup (orange) and the ramped flow-rate dissolution setup (blue) for A BaSO$_4$ NM220, B CuO, C ZnO NM110 and D ZnO NM111. Unfilled circles indicate points with low reliability due to remaining mass <10%.