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Processing induced changes in food proteins:

amyloid formation during boiling of hen egg white

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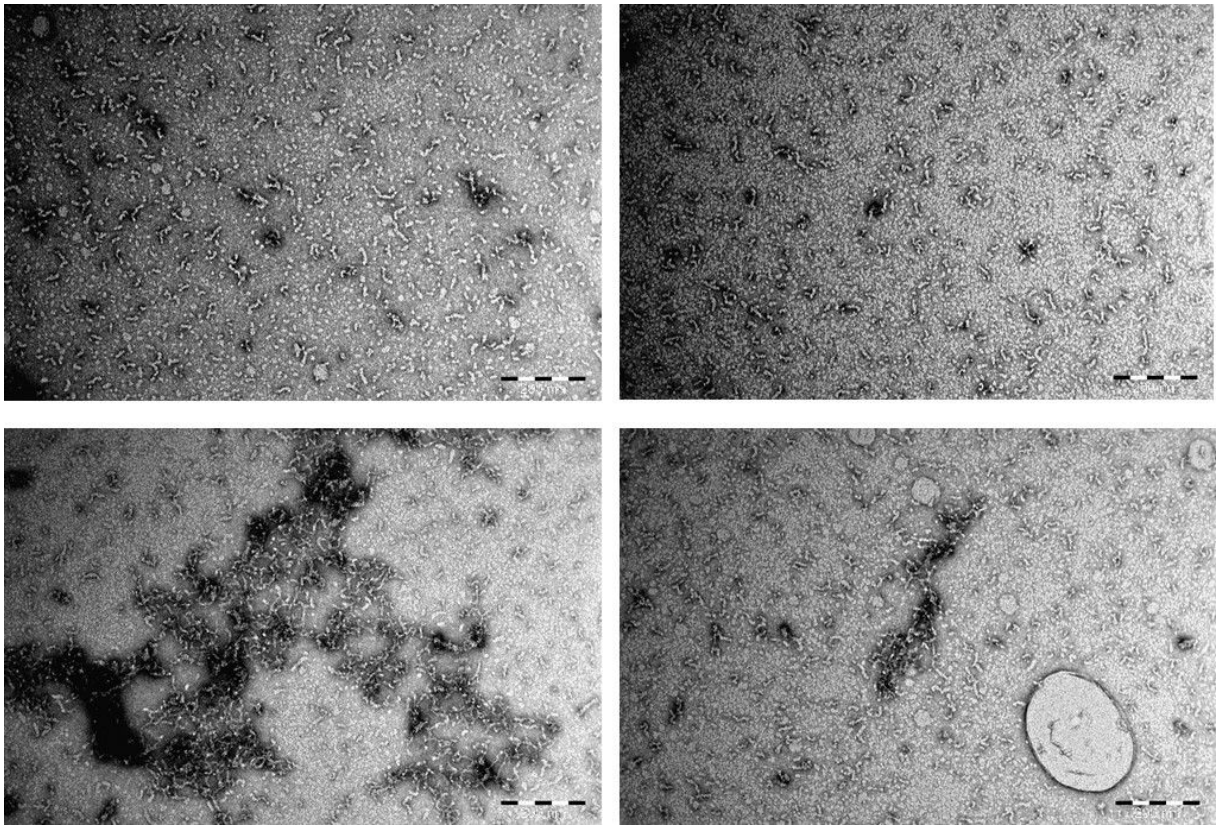

Figure S1. Morphology of amyloid proteins fibril derived from egg white (EW) boiled for 15 min ($EW_{100/15min}$). TEM images after the solubilisation with 0.01 M of hydrochloric acid of the $EW_{100/15min}$ pellet obtained during proteinase K incubation. Images shown different locations of the same grid. Scale bar: 200 nm.

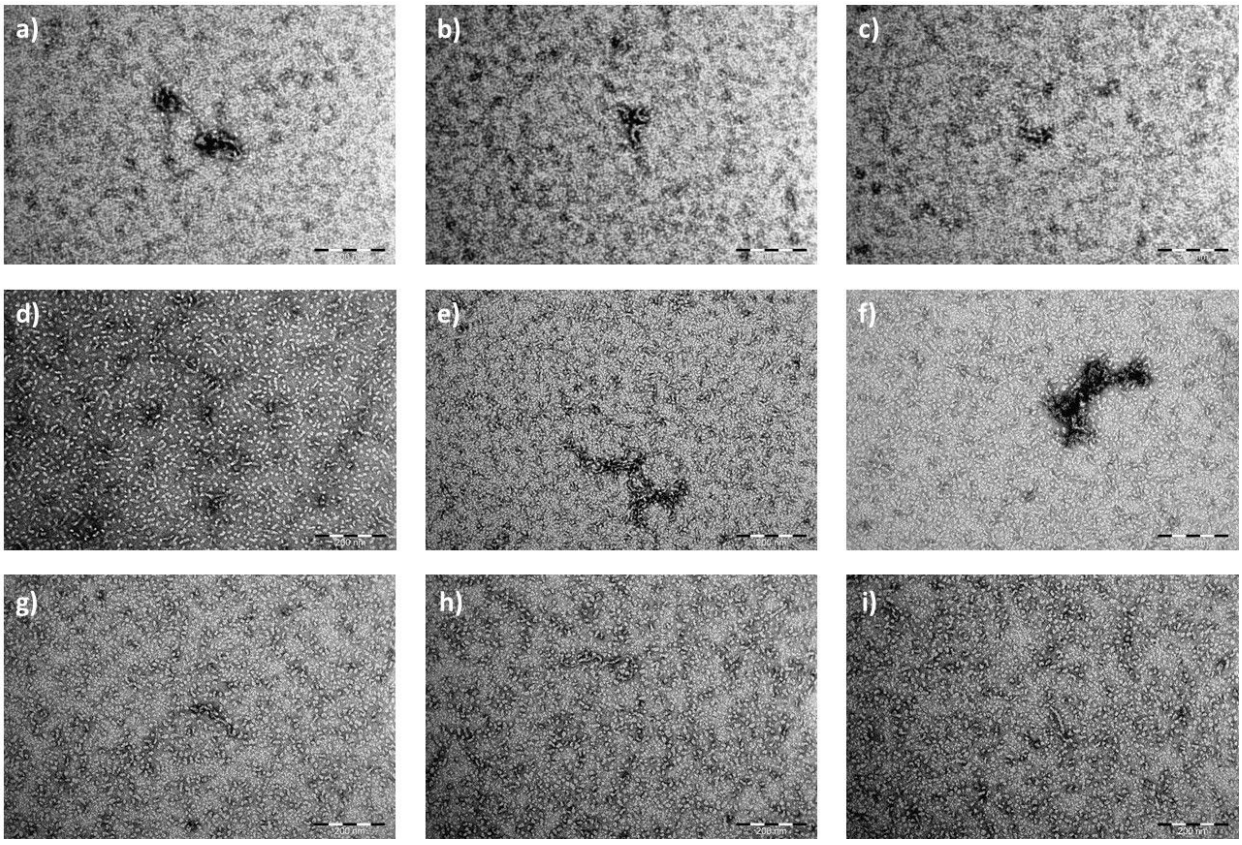

Figure S2. Protein fibril morphology of unheated, heated and boiled ovalbumin (OVA). TEM images of unheated [(a) to (c)] and heated ovalbumin for 22 h at 78 °C [(d) to (f);

$OVA_{78/22h}$] and for 15 min at 100 °C [(g) to (i); $OVA_{100/15min}$]. Images per row are from different locations in the same grid. Scale bar: 200 nm.

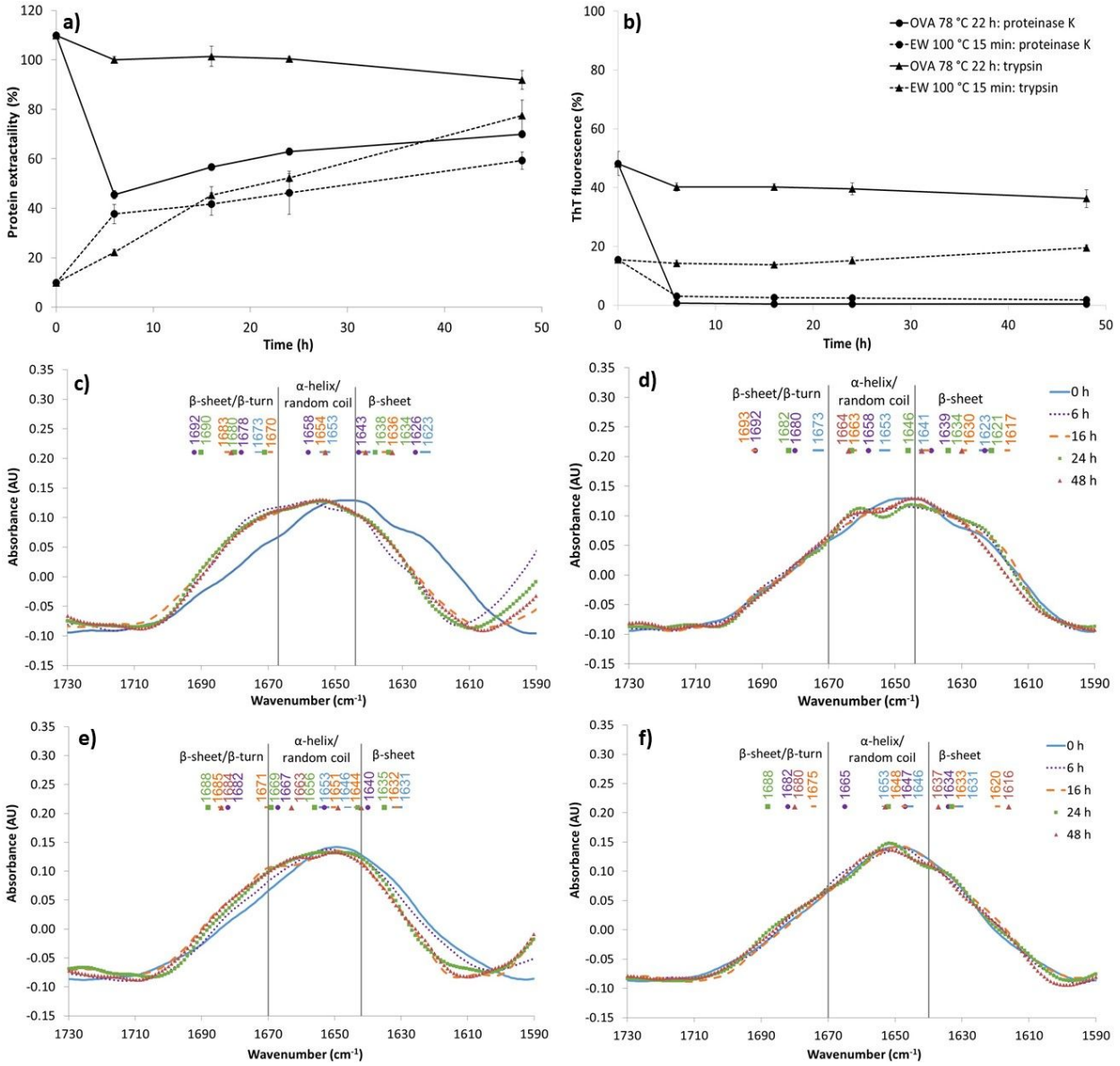

Figure S3. Impact of proteases on protein fibril extractability of heated ovalbumin ($OVA_{78/22h}$) and boiled egg white ($EW_{100/15min}$) over time. Protein extractability (a) and thioflavin T (ThT) [b] of $OVA_{78/22h}$ and $EW_{100/15min}$ treated with proteinase K and trypsin over time. FTIR spectrum of $OVA_{78/22h}$ [(c) and (d)] and $EW_{100/15min}$ [(e) and (f)] treated with proteinase K [(c) and (e)] and trypsin [(d) and (e)]. Wavenumbers shown are detected

with the peak picking tool based on the second derivate. Vertical lines in c, d, e and f separate the wavenumbers assigned to the secondary structure of proteins. AU, arbitrary units.

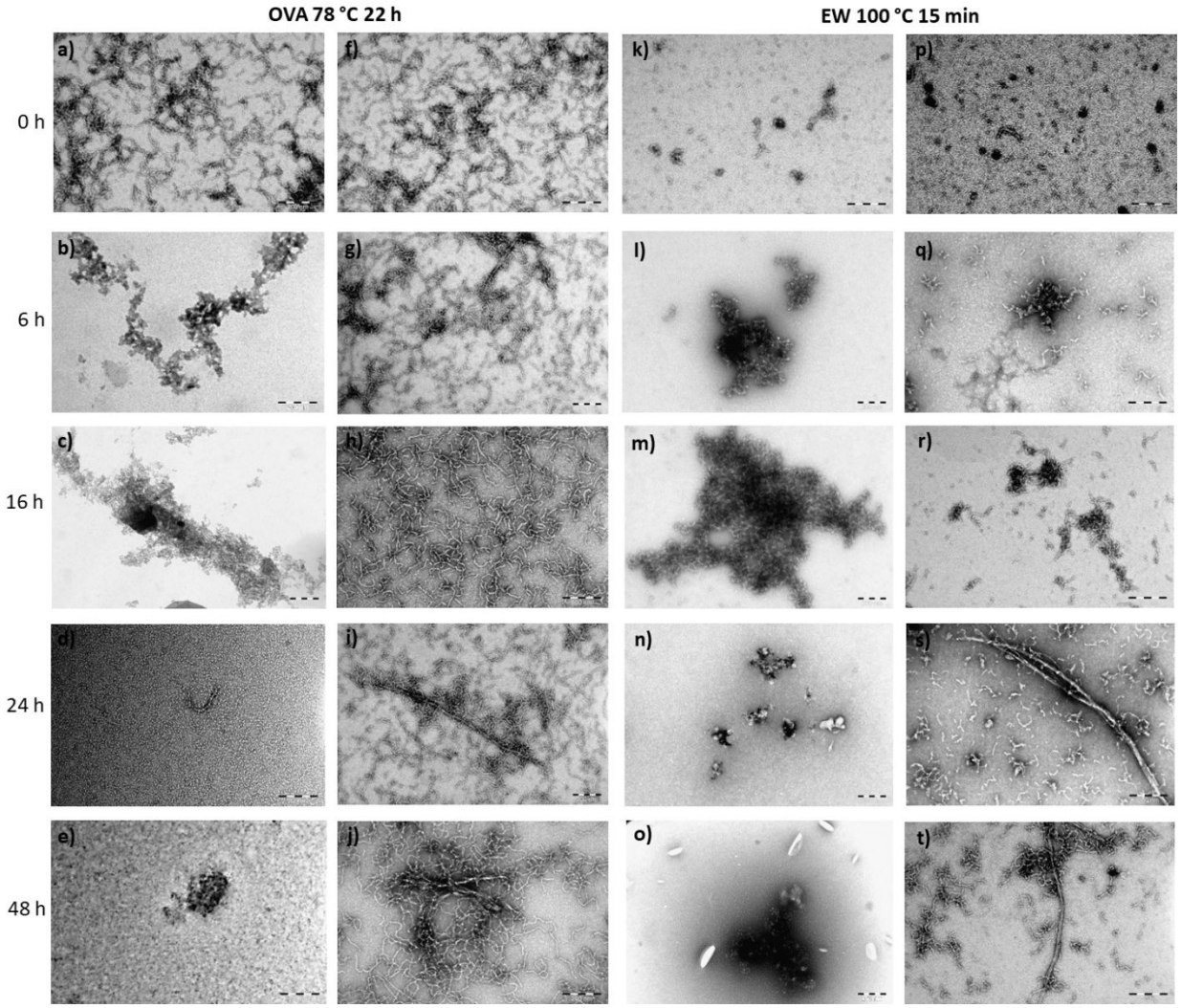

Figure S4. Protein fibril morphology of heated ovalbumin ($OVA_{78/22h}$) and boiled egg white ($EW_{100/15min}$) extracted with proteases. TEM images of $OVA_{78/22h}$ [(a) to (j)] and $EW_{100/15min}$

[(k) to (t)] treated with proteinase K [(a) to (e) and (k) to (o), respectively] trypsin [(f) to (j) and (p) to (t), respectively]. Scale bar: 200 nm.

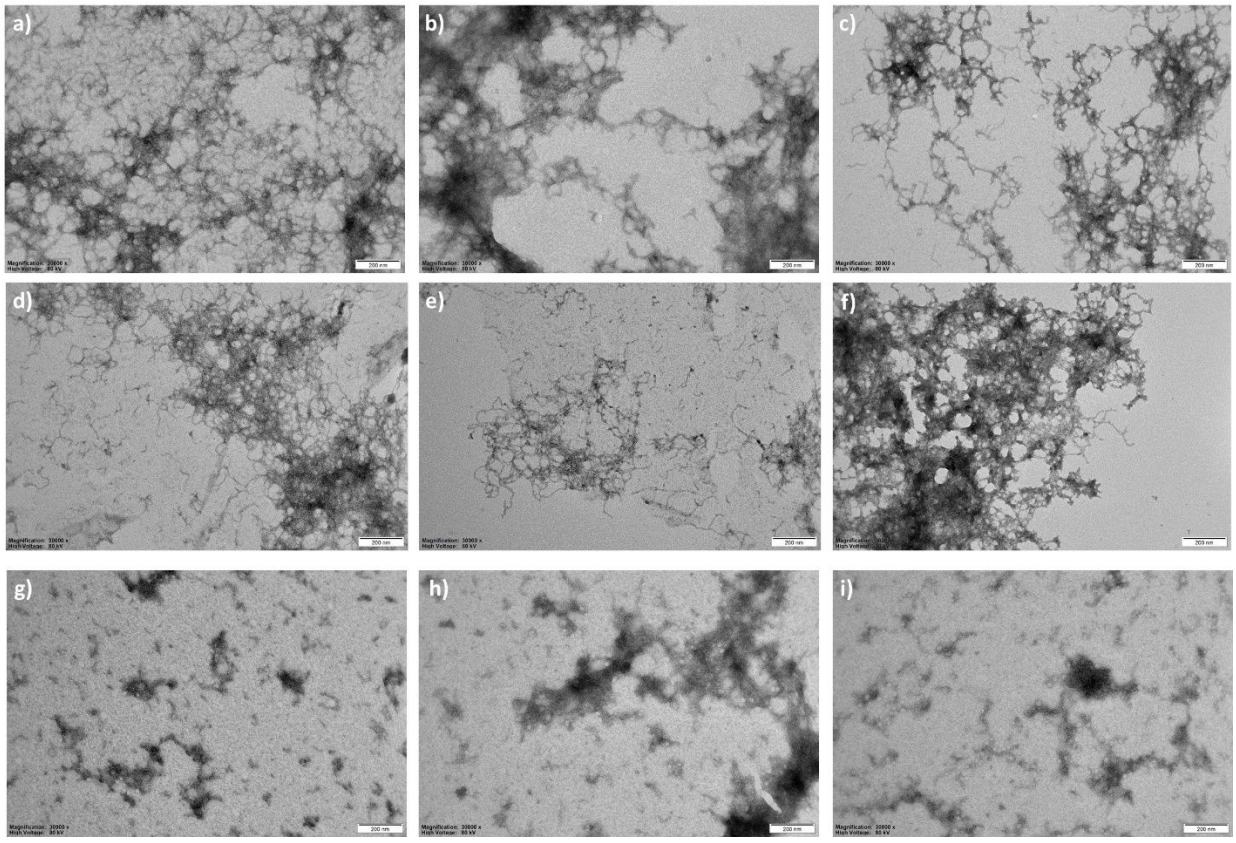

Figure S5. Protein fibril morphology of the SE-HPLC collected peaks after the enzymatic extraction of heated ovalbumin ($OVA_{78/22h}$) and boiled egg white ($EW_{100/15min}$). TEM images of SE-HPLC collected fractions (peak A in Figure 3) of $OVA_{78/22h}$ after shaking without enzymes [(a) to (c)] and of $OVA_{78/22h}$ [(d) to (f)] and $EW_{100/15min}$ [(g) to (i)] treated

with trypsin. Images per row are images from different locations in the same grid. Scale bar: 200 nm.

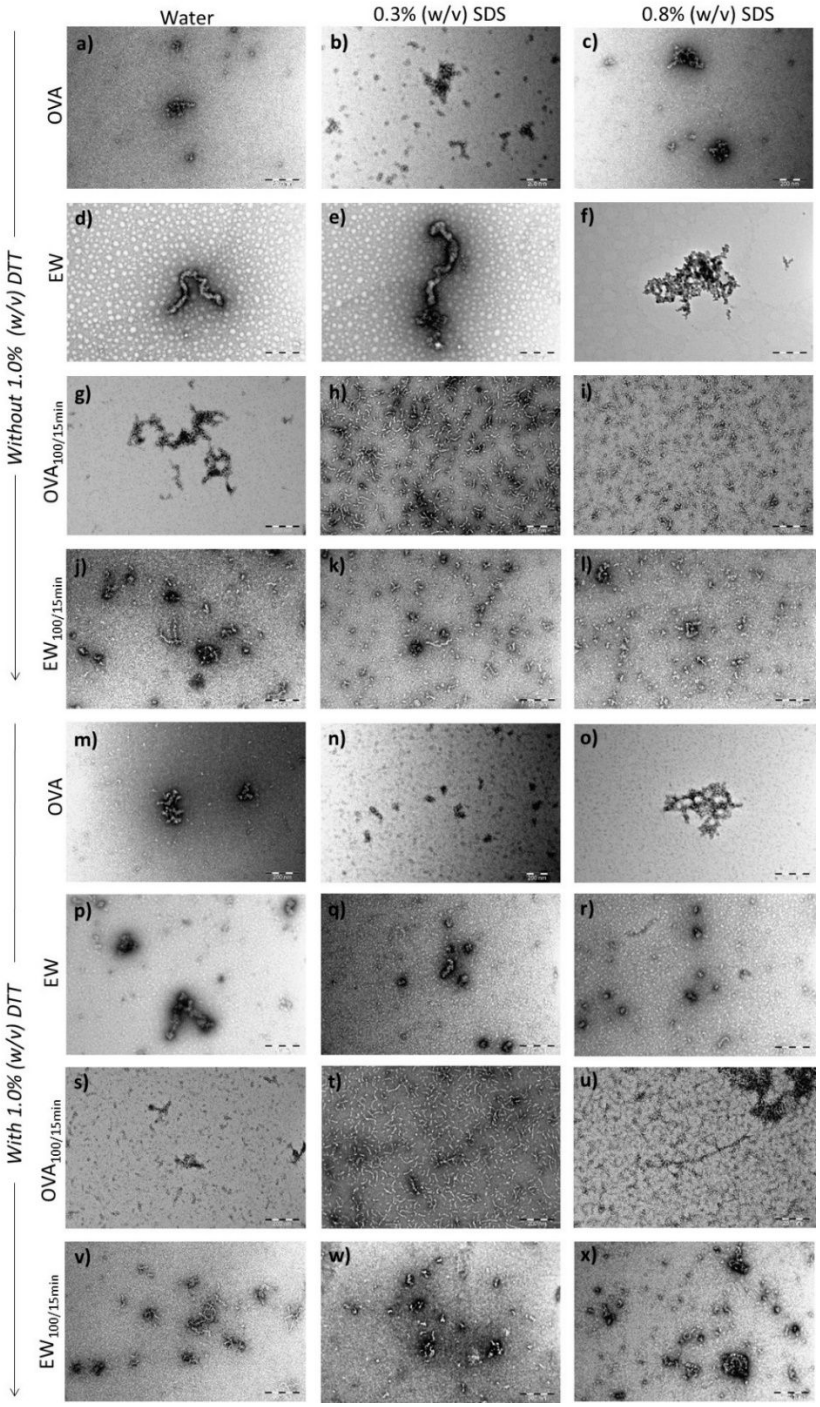

Figure S6. Protein fibril morphology of ovalbumin (OVA) and egg white (EW) unheated or boiled for 15 min ($OVA_{100/15min}$ and $EW_{100/15min}$) isolated/extracted with sodium dodecyl sulfate (SDS) and 1.0% (w/v) dithiothreitol (DTT). TEM images of unheated OVA [(a) to

(c) and (m) to (o)] and EW [(d) to (f) and (p) to (r)] or $OVA_{100/15min}$ [(g) to (i) and (s) to (u)] and $EW_{100/15min}$ [(j) to (l) and (r) to (x)] extracted with various concentrations of SDS without [(a) to (l)] and with 1.0% (w/v) DTT [(m) to (x)].