**Supplementary Information for:**

# Comparison of bovine serum albumin and chitosan effect on calcium phosphate formation in the presence of silver nanoparticles

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**Content of listed material:**

**Figure SI 9.** SEM micrographs of crystalline precipitates formed in the precipitation systems containing bovine serum albumin.

**Figure SI 10.** SEM micrographs of crystalline precipitates formed in the precipitation systems containing chitosan.

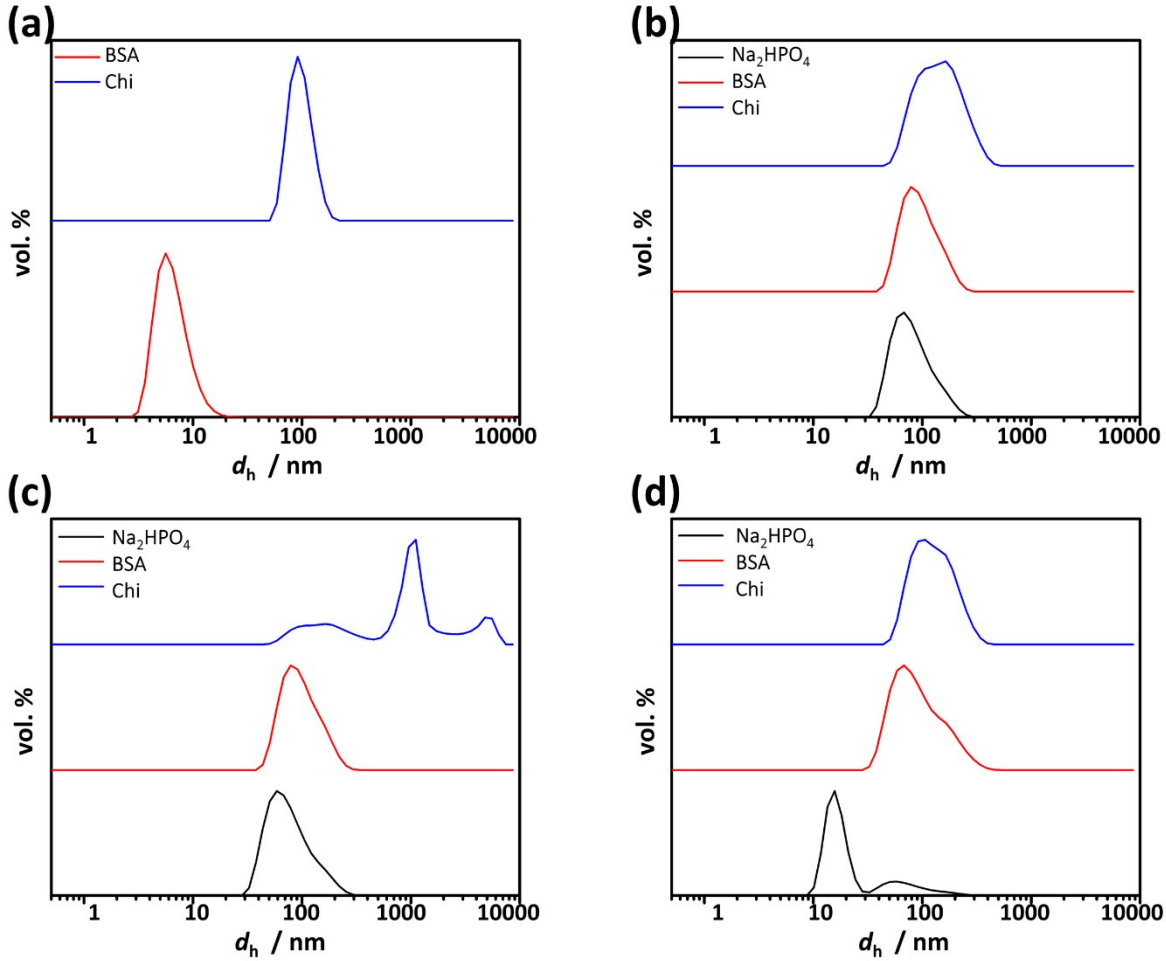


**Figure SI 1.** Volume size distribution of a) BSA and Chi, silver nanoparticles (AgNPs), stabilized with b) sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPS), c) poly(vinylpyrrolidone) (PVP-AgNPS), d) citrate (cit-AgNPs) suspended in anionic reactant solution ($c(Na_2HPO_4) = 8 \cdot 10^{-3}$ mol dm$^{-3}$, $\gamma$(AgNPs) = 20 mg dm$^{-3}$, pH 7.4) in the presence or absence of bovine serum albumin (BSA, $\gamma$ = 200 mg dm$^{-3}$) or chitosan (Chi, $\gamma$ = 50 mg dm$^{-3}$) at 25 °C.

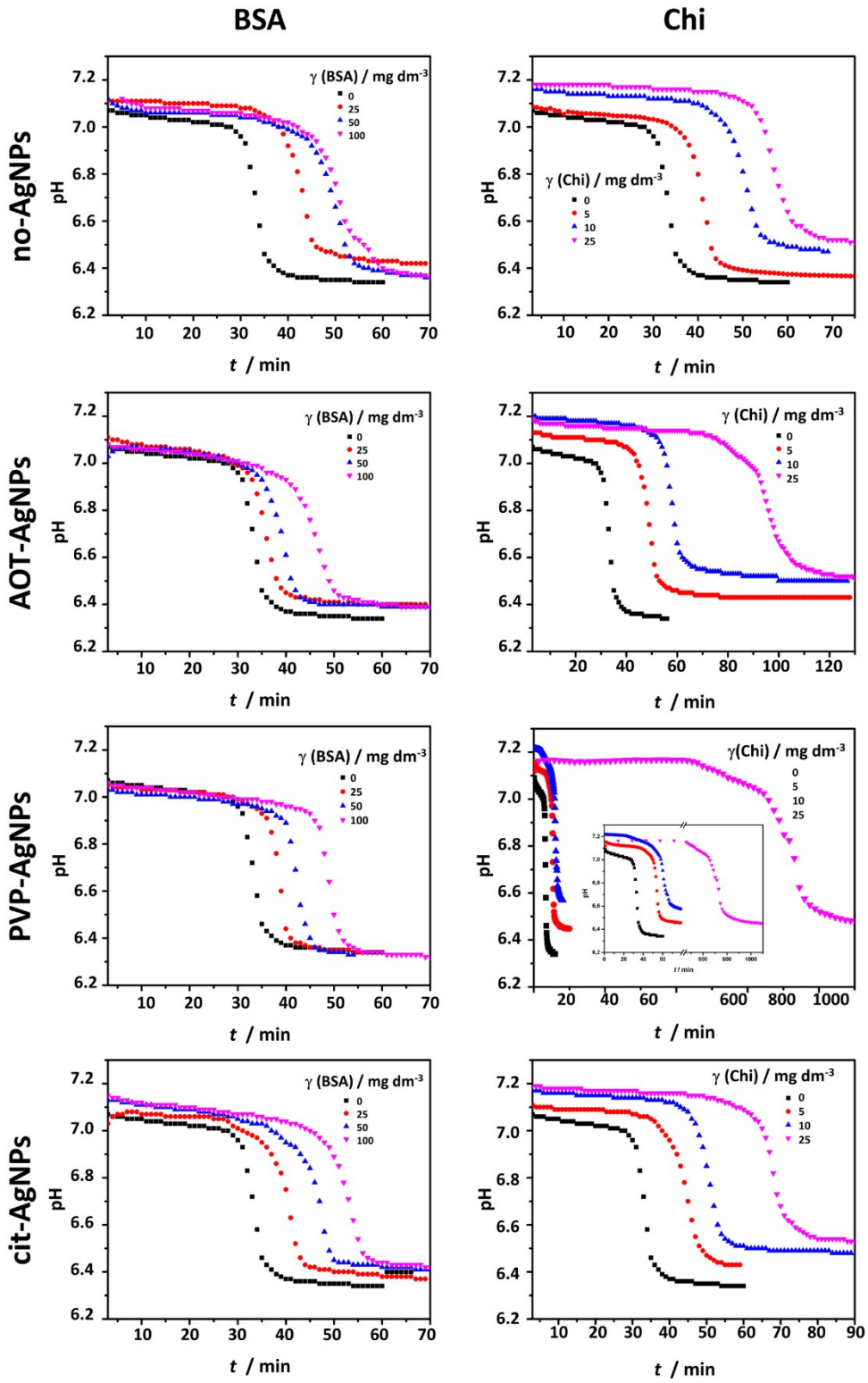


**Figure SI 2.** Representative pH vs. time curves obtained in the control system and in the presence of different concentrations of bovine serum albumin (BSA) and chitosan (Chi) in the presence or absence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). $c(CaCl_2) = c(Na_2HPO_4) = 4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

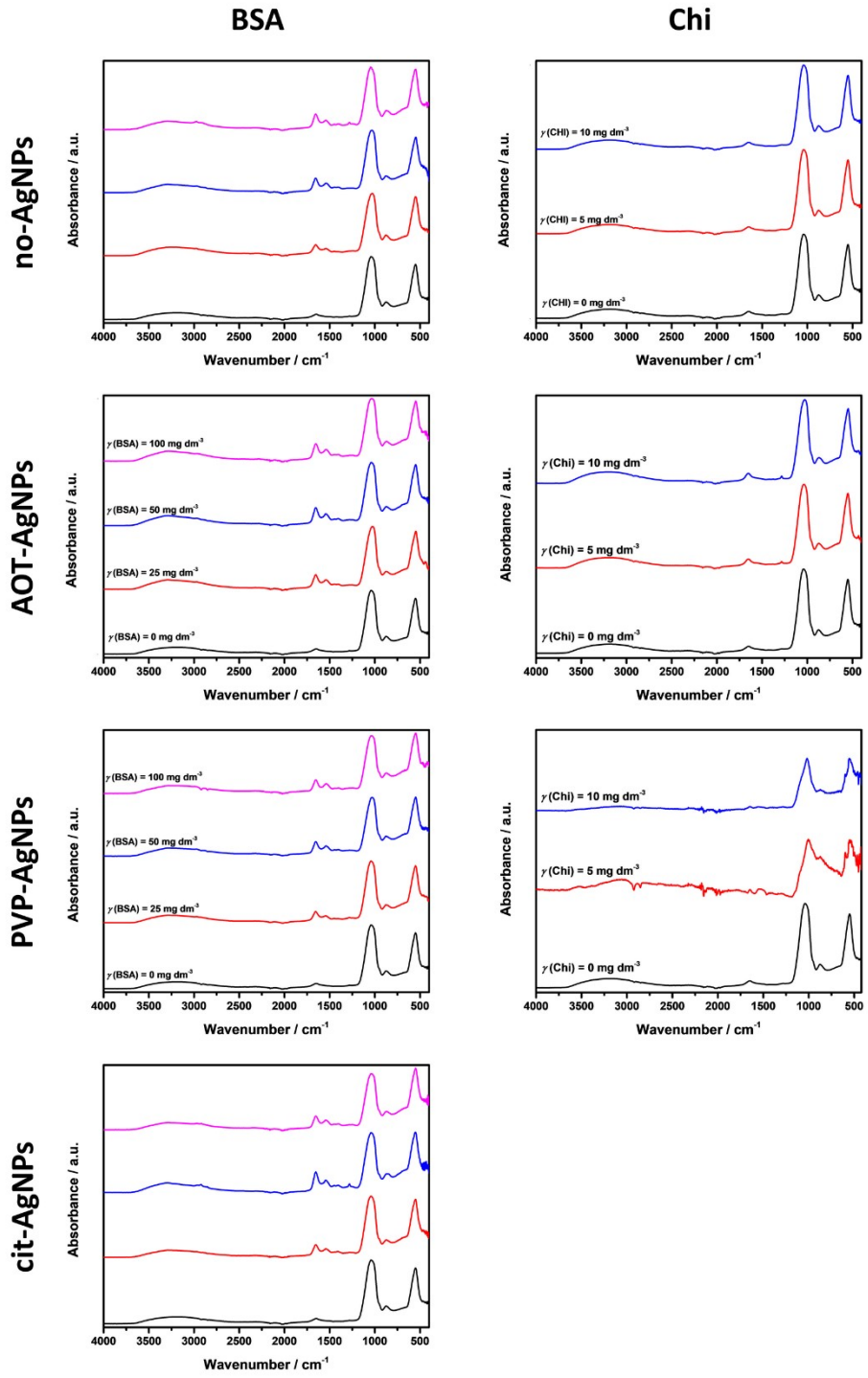


**Figure SI 3.** FTIR spectra of amorphous precipitates obtained in the control system and the presence of the different concentrations of bovine serum albumin (BSA) or chitosan (Chi) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4) = 4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

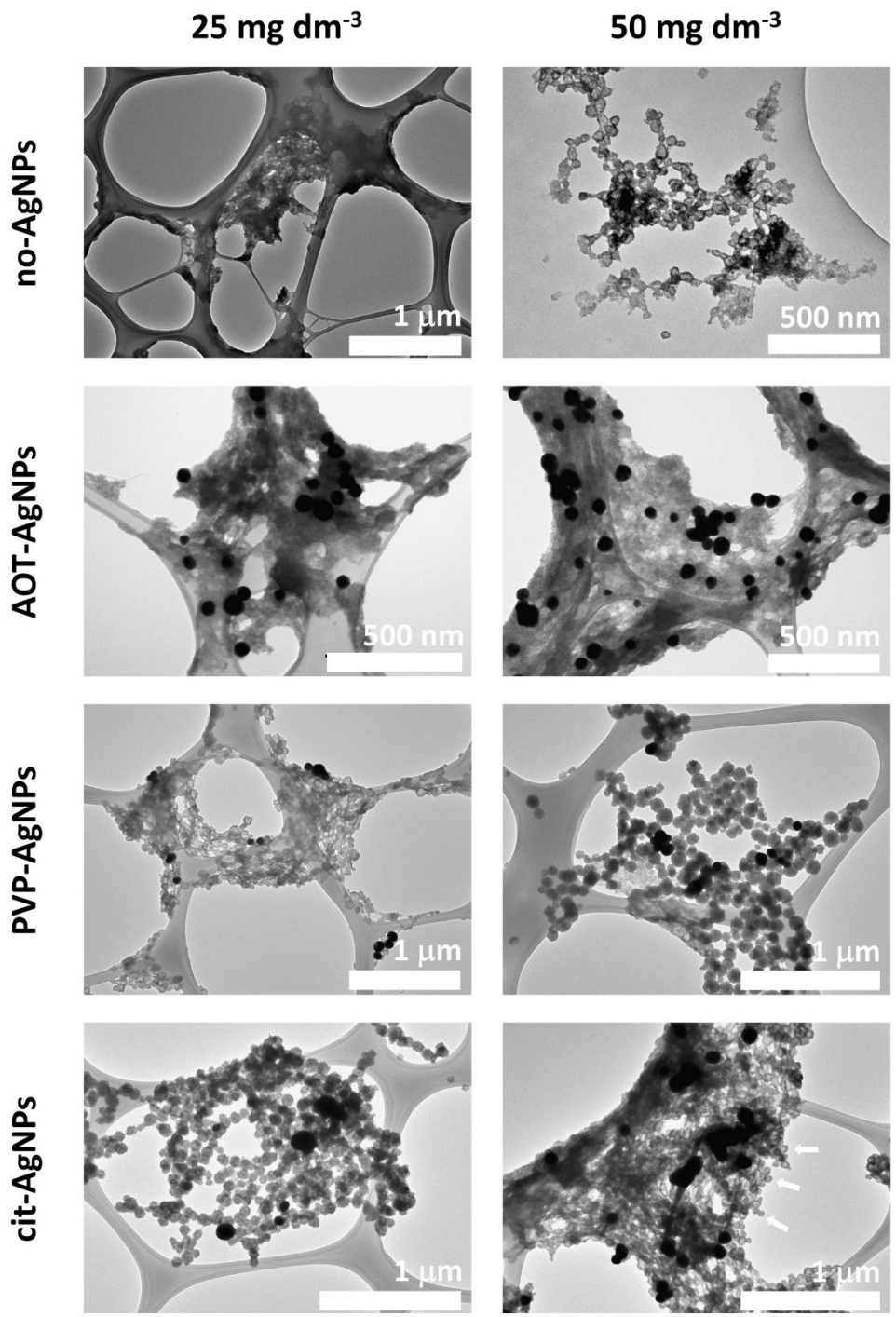


**Figure SI 4.** TEM micrographs of amorphous precipitates obtained in the control system and the presence of the different concentrations of bovine serum albumin (BSA) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c$($Na_2HPO_4$) = $4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C. White arrows point to spherical ACP particles.

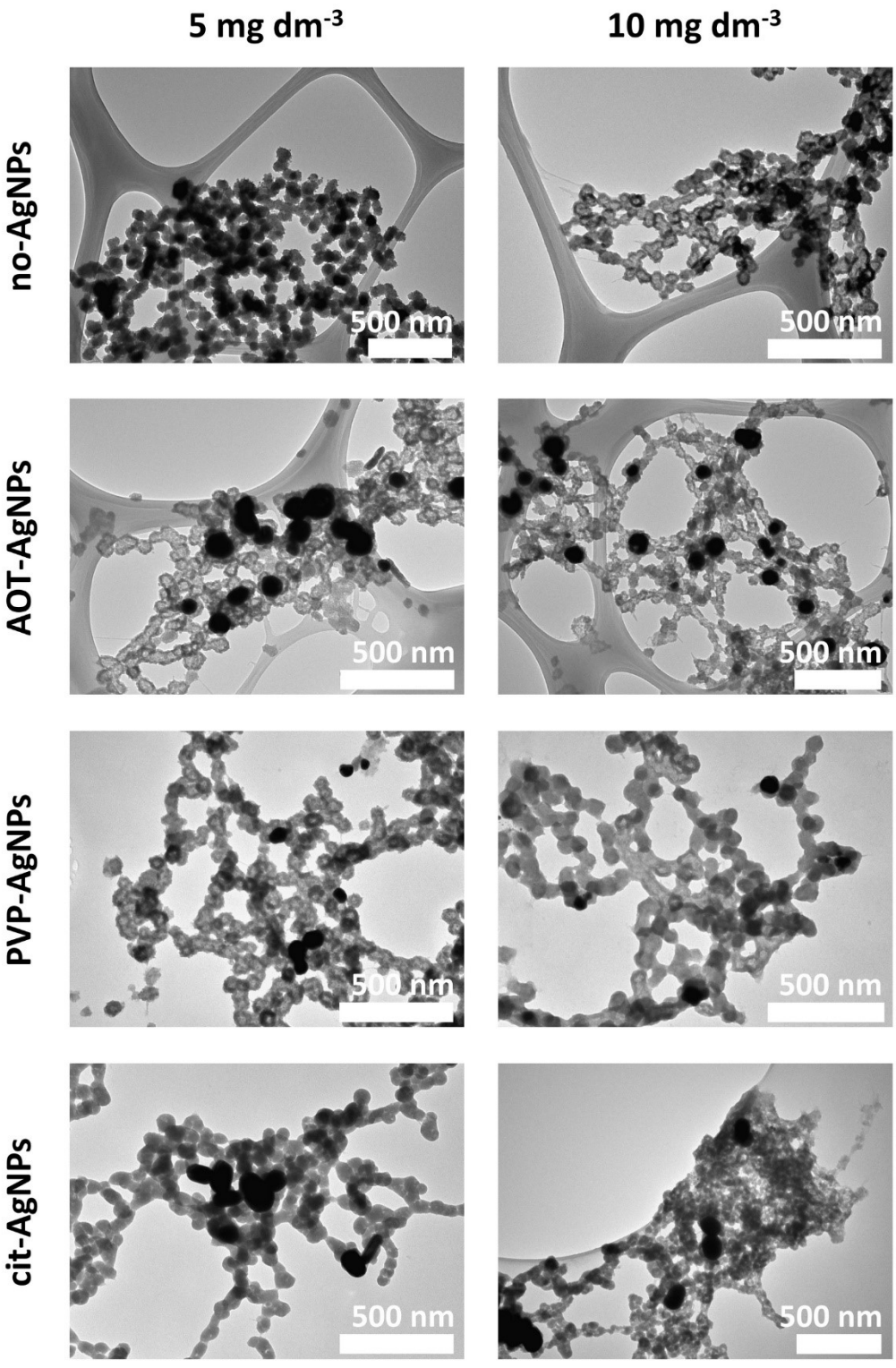


**Figure SI 5.** TEM micrographs of amorphous precipitates obtained in the control system and in the presence of the different concentrations of chitosan (Chi) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4) = 4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

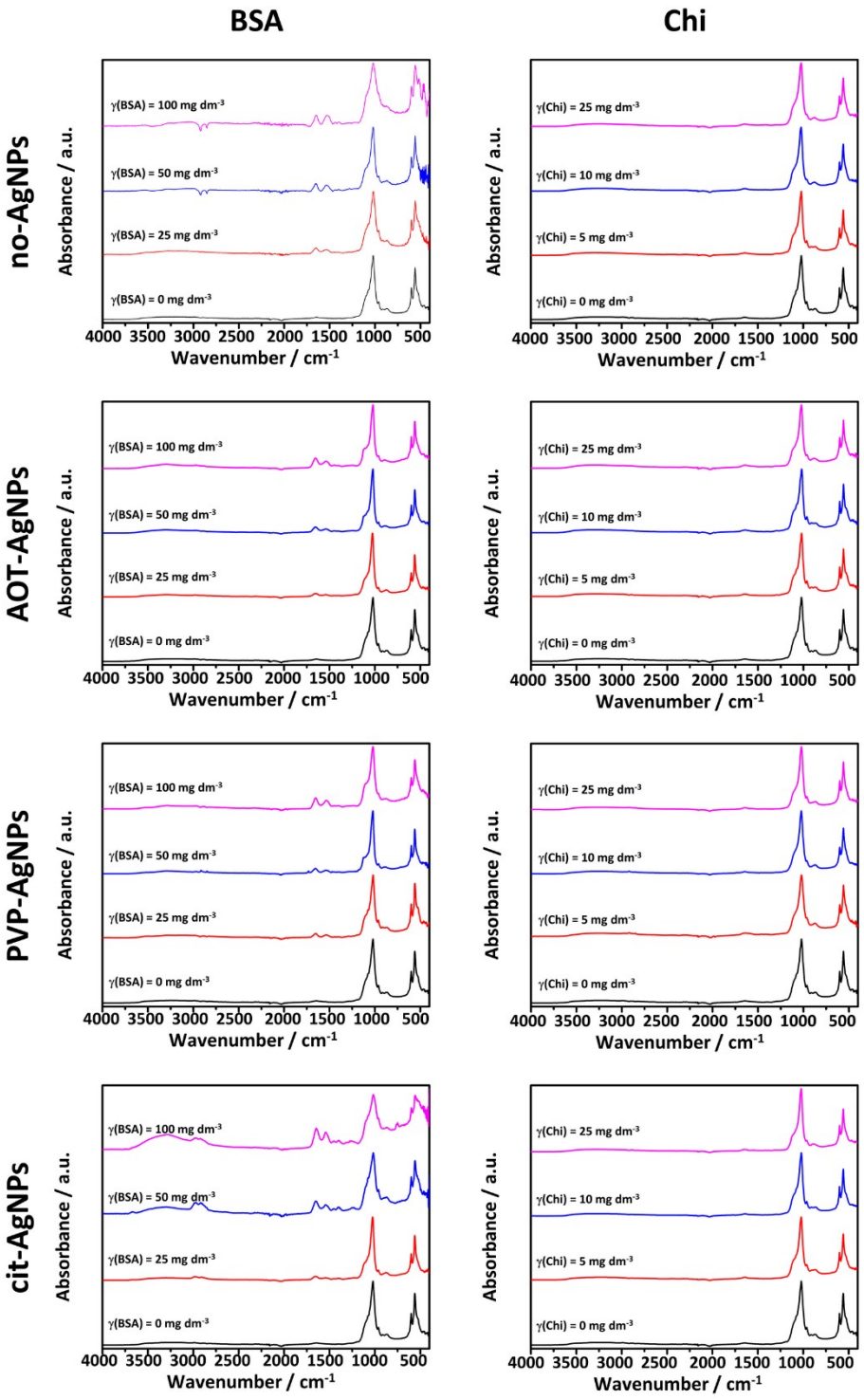


**Figure SI 6.** FTIR spectra of crystalline precipitates obtained in the control system and in the presence of the different concentrations of bovine serum albumin (BSA) or chitosan (Chi) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4)$ = $4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

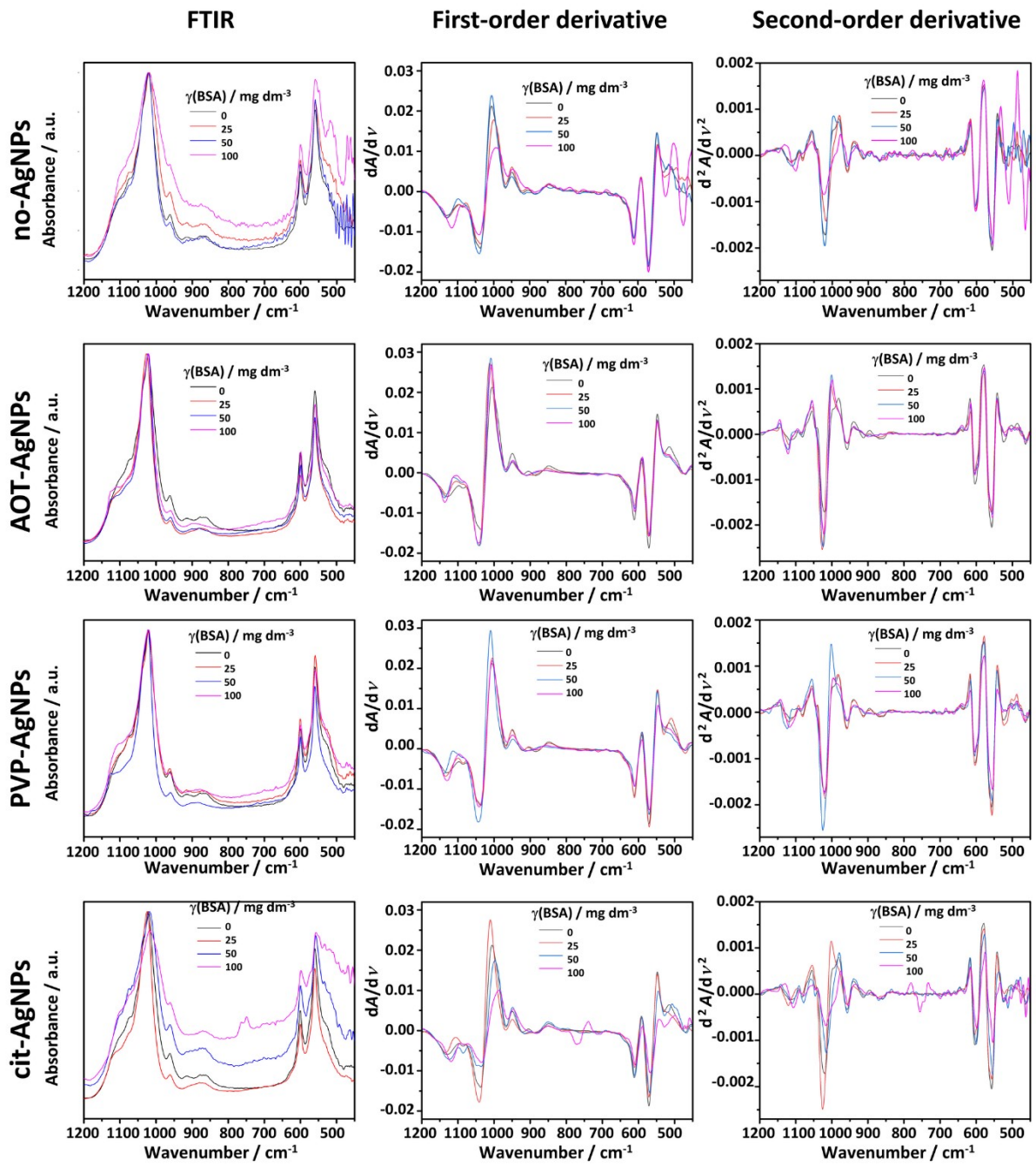


**Figure SI 7.** FTIR spectra and corresponding first- and second-order derivatives of crystalline precipitates obtained in the control system and in the presence of the different concentrations of bovine serum albumin (BSA) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4) = 4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

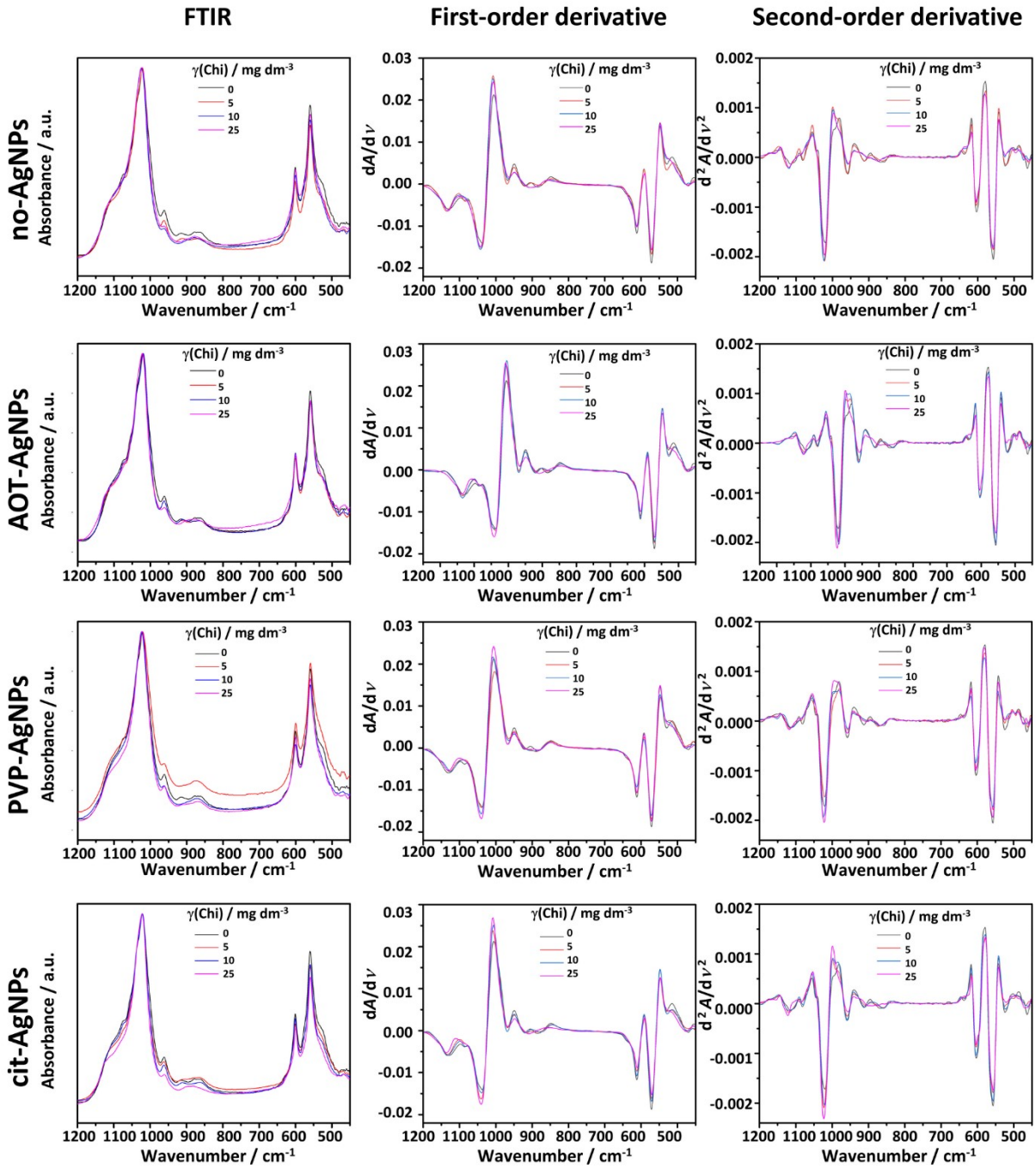


**Figure SI 8.** FTIR spectra and corresponding first- and second-order derivatives of crystalline precipitates obtained in the control system and in the presence of different concentrations of chitosan (Chi) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4) = 4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

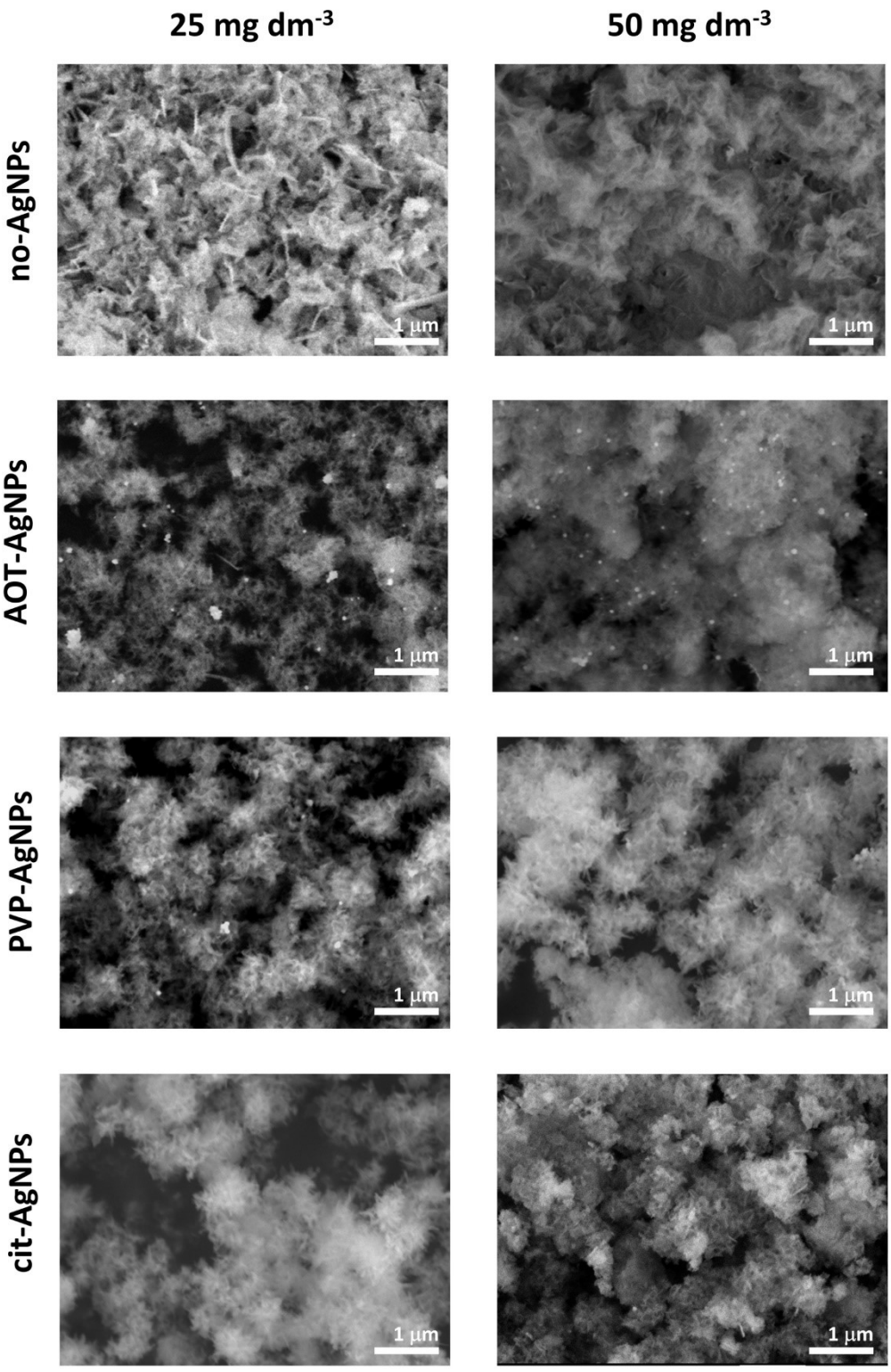


**Figure SI 9.** SEM micrographs of crystalline precipitates obtained in the control system and in the presence of the different concentrations of bovine serum albumin (BSA) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4)$ = $4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25 °C.

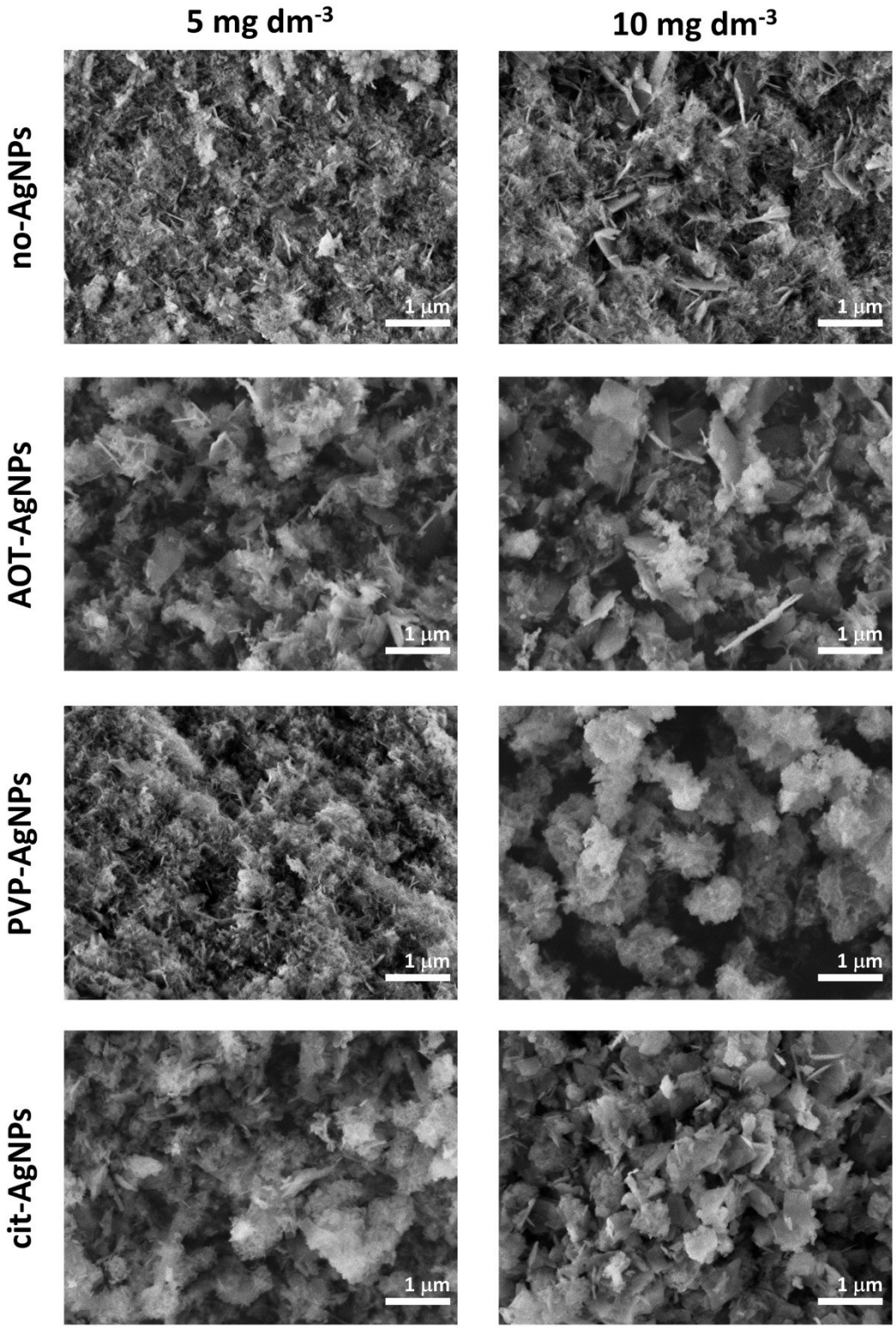


**Figure SI 10.** SEM micrographs of crystalline precipitates obtained in the control system and in the presence of different concentrations of chitosan (Chi) in the absence and presence of 10 mg $dm^{-3}$ of silver nanoparticles (AgNPs) stabilized with sodium bis(2-ethylhexyl) sulfosuccinate (AOT-AgNPs), poly(vinylpyrrolidone) (PVP-AgNPs), and citrate (cit-AgNPs). ($CaCl_2$) = $c(Na_2HPO_4)$ = $4 \cdot 10^{-3}$ mol $dm^{-3}$, pH 7.4, 25°C.