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Allantoin and hydantoin as new protein aggregation suppressors and their mechanisms of action

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1. Protein aggregation is a serious problem in biotechnology and biological systems.
2. Allantoin and hydantoin suppressed heat-induced aggregation and inactivation of LYZ.
3. Hydantoin increased the solubility of aromatic amino acids more than arginine owing to the hydrophobic interactions between hydantoin and aromatic rings.
4. The aggregation suppressive effect of allantoin was more effective than that of arginine.
5. Allantoin and hydantoin did not suppress the aggregation of BCA, OVA and IgG, with heat and acid treatment.

Abbreviations used

TMAO: Trimethylamine N-oxide

IgG: Human immunoglobulin G

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