<table>
<thead>
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<th>ID: 6829</th>
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<tr>
<td><strong>Congress:</strong> 1st Tabriz International Life Science Conference and 12th Iran Biophysical Chemistry Conference</td>
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<tr>
<td><strong>Title:</strong> Structural studies of thermal inactivation and aggregation of lysozyme in the presence of spermine in neutral pH</td>
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<td><strong>Authors:</strong> Akram Hashemian, Behzad Shareghi, Sadegh Farhadian</td>
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<td><strong>Abstract:</strong> Proteins tend to form undesirable and uncontrollable aggregates at high temperature. Protein aggregation is a major problem in both biological and biomedical field involving proteins. In this study, we show that polyamines, such as spermine, effectively prevent thermal inactivation and aggregation of hen egg white lysozyme, a positively charged protein (pI = 11). In the presence of spermine, even in low concentration, after heat treatment at 98°C for 30 min, no aggregates were observed. In other word, with increasing of spermine, lysozyme aggregation was decreased from 65% to 3%. The residual activity after this heat treatment was about 50%, while it was very low (&lt;5%) in the absence of additives after the same heat treatment. The midpoint temperature of thermal unfolding (T&lt;sub&gt;m&lt;/sub&gt;) of lysozyme in the presence of spermine, after heat treatment, was increased with increasing of the concentration of this additive. These results imply that spermine is the most prominent additives for preventing the thermal aggregation and inactivation of heat labile proteins.</td>
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<td><strong>Spermine, Aggregation, Thermal inactivation, Lysozyme</strong></td>
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<td><strong>Presentation:</strong> Poster</td>
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