Interaction of tear lipocalin with lysozyme and lactoferrin.

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Source
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Abstract
The interaction of human tear lipocalin with lysozyme and lactoferrin was studied by electron paramagnetic resonance (EPR) spectroscopy.

TL mutants I98C and F99C were spin labeled with MTSL and its derivative. The spectra demonstrated that at sites C98 and C99 the mobility of the nitroxides was reduced in the presence of lysozyme, lactoferrin, but not albumin. The reduced mobility was manifested as a reduction in side chain motion and backbone fluctuations. The overall correlation time of tear lipocalin, measured by MTSL derivative-labeled F99C, was prolonged in the presence of lysozyme and lactoferrin indicating that the interaction involves direct contact. The effect was mitigated at high salt concentration suggesting an electrostatic interaction of the molecules. The reduction in side chain mobility at C98 and C99 of tear lipocalin was observed in tears.

Taken together, the data indicate that tear lipocalin interacts with both lysozyme and lactoferrin and suggest that they may function in concert with one another.

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