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Rigidity and pH dependent Morphology of Beta-Lactoglobulin Spherulites LISA GAYETSKY, DOUGLAS ARMSTEAD, Westminster College — Beta-Lactoglobulin is a milk protein that will denature in acidic solution (less than 2.0 pH) and if heated for extended periods (greater than 18 hours) it will form radial structures called Spherulites. Spherulites, along with the amyloid fibrils that compose them, are of practical importance because they form in the human body and cause the amyloidosis diseases. Different amyloidosis are caused by different types of denatured proteins occurring in different parts of the body. Since it is believed that Spherulite formation is a generic protein characteristic, Beta-Lactoglobulin is a legitimate and easy to use protein to study these structures. In this study we are quantifying the shape of Beta-Lactoglobulin Spherulites to determine if the pH of the protein solution has an impact on the morphology due to side chain interactions or other causes. We are also testing the rigidity of these structures to determine the relevance of small shape changes.

Lisa Gayetsky
Westminster College

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