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Purification of Proteins with Unknown Function: Problems Arising with Substrate and/or Cofactor Binding. Elizaveta Karpova; Norbert Schormann, Songlin Li, QingXian Zhou, Chi-Hao Luan, Ming Luo, Univ. of Alabama at Birmingham, Center for Biophysical Sciences and Engineering, Birmingham, AL 35294.

Structural genomic initiative proposes to solve three-dimensional structures of proteins quickly and at low cost. Fast protein purification is one of the important steps to accomplish this task. IMAC column and gel filtration chromatography is a two step purification procedure that can lead to the growth of acceptable crystals. However, this procedure can also lead to the growth of low resolution crystals or to the absence of crystals at all. One of the reasons is binding of substrates and/or cofactors to the target protein of which the function is unknown. We will discuss how to test the presence of substrates and/or cofactors quickly and to overcome this problem.