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Crystal Structure of Penicillin-binding Protein (PBP) Related Factor A from *Bacillus Subtilis*. Thirumuruhan Radhakannan, Udipi Ramagopal, Steven Almo, Center for Synchrotron Biosciences, Albert Einstein College of Medicine, 1300, Morris Park Ave, Bronx, NY 10461 USA.

The penicillin-binding protein (PBP) related factor A (PrfA) also known as RecU, is found to play an important role in cell wall synthesis, chromosome segregation, and DNA recombination and repair in *Bacillus subtilis*. As a part of New York Structural Genomics Research Consortium (NYSGR) initiative, and considering its importance, this protein is selected as one of the targets. The protein crystallized from PEG 8000, Tris/HCl, pH 8.5, space group P6₅, a = b = 74.30, c = 155.81 Å diffracted to 2.3 Å resolution. Crystal structure was determined by SIRAS method using the isomorphous derivative data and refined to R(cryst) = 0.189, R(free) = 0.245. The closest structural homologs of PrfA is found to be holliday junction resolvase (1GEF 12% identity, Z-score = 8.5, RMSD = 2.9 Å). The overall structure of PrfA is a compact α/β sandwich with a deep cleft and exists as dimer. The details of the PrfA structure will be presented.