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Preliminary X-Ray Analysis of BphC1, an Extradiol Dioxygenase from *Sphingomonas* strain BN6. Patrick Miller, Kiira Ratia, Andrew Mesecar, The Center for Pharmaceutical Biotechnology, Univ. of Illinois at Chicago, Chicago, IL 60607 USA.

Extradiol dioxygenases (EDOs) catalyze the meta-cleavage of dihydroxy-substituted aromatic rings. The third gene of the biphenyl degradative pathway, *bphC*, codes an EDO that cleaves 2,3-dihydroxybiphenyl. One of two *bphC* gene products from *Sphingomonas* sp strain BN6, BphC1, differs from other known EDOs in that it is roughly half the size of *bphC* isolated from other organisms. Thus, BphC1 is hypothesized to be an ancient EDO that evolved through gene duplication. The native BphC1 gene product was cloned, expressed, and purified from *E.coli* using anion exchange and size exclusion chromatography. Numerous crystallization trials were performed, and initially two crystallization conditions resulted in plate-like crystals that were unsuitable for data collection. One of these initial conditions was optimized, resulting in thicker and less densely clustered plates from which single plates can be isolated. A complete data set to 1.9 Å resolution was collected at the Advanced Photon Source (14-BM-C). Native BphC1 forms orthorhombic crystals in Laue group P222. We were unable to solve the structure by molecular replacement using the available EDO structures. We are currently in the process of phase determination via heavy atom derivatives.