| **Alkaline phosphatase PafA** | | | | |
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| in silico: Supervised - May 29, 2023 to July 16, 2023 | | | | |
| **Acknowledgements:**  This dataset was provided by the Polly Fordyce Group, Stanford University, with guidance from Dr. Craig Markin and Prof. Polly Fordyce. | | | | |
| **Citation:**  Markin, C. J., Mokhtari, D. A., Sunden, F., Appel, M. J., Akiva, E., Longwell, S. A., Sabatti, C., Herschlag, D. & Fordyce, P. M. Revealing enzyme functional architecture via high-throughput microfluidic enzyme kinetics. Science 373, eabf8761 (2021) | | | | |
| **Additional documentation and resources:**  All data are available in a registered Open Science Foundation Repository (DOI: 10.17605/OSF.IO/QRN3C) | | | | |
| **Challenge Problem:**  Score activity for each of the three substrates. The range of scoring is arbitrary. | | | | |
| **Sequence Length:**  549 | **Mutation(s):**  No | **Classification:**  HYDROLASE | **EC Number:**  3.1.3.1 | **PDB Xtal Structure:** 5TJ3 |
| **Expression System:** Escherichia coli | | **Organism(s):** Elizabethkingia meningoseptica | | |
| **Target WT Sequence:**  MDIGIDSDPQKTNAVPRPKLVVGLVVDQMRWDYLYRYYSKYGEGGFKRMLNTGYSLNNVHIDYVPTVTAIGHTSIFTGSVPSIHGIAGNDWYDKELGKSVYCTSDETVQPVGTTSNSVGQHSPRNLWSTTVTDQLGLATNFTSKVVGVSLKDRASILPAGHNPTGAFWFDDTTGKFITSTYYTKELPKWVNDFNNKNVPAQLVANGWNTLLPINQYTESSEDNVEWEGLLGSKKTPTFPYTDLAKDYEAKKGLIRTTPFGNTLTLQMADAAIDGNQMGVDDITDFLTVNLASTDYVGHNFGPNSIEVEDTYLRLDRDLADFFNNLDKKVGKGNYLVFLSADHGAAHSVGFMQAHKMPTGFFVEDMKKEMNAKLKQKFGADNIIAAAMNYQVYFDRKVLADSKLELDDVRDYVMTELKKEPSVLYVLSTDEIWESSIPEPIKSRVINGYNWKRSGDIQIISKDGYLSAYSKKGTTHSVWNSYDSHIPLLFMGWGIKQGESNQPYHMTDIAPTVSSLLKIQFPSGAVGKPITEVIGRIEGRSAWSHPQFEK | | | | |
| **Substrates:**   * methyl phosphate (MeP) - chemistry limited substrate * Carboxy 4-methylumbelliferyl phosphate ester (cMUP) - binding limited substrate * methyl phosphodiester (MecMUP) - promiscuous substrate | | | | |