

Abstract Submitted
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Characterization of DNA-protein interactions using high-throughput sequencing data from pulldown experiments¹ BLYTHE MORELAND, Ohio State Univ - Columbus, KENJI OMAN, Fred Hutchinson Cancer Research Center, JOHN CURFMAN, PEARLLY YAN, RALF BUNDSCHUH, Ohio State Univ - Columbus — Methyl-binding domain (MBD) protein pulldown experiments have been a valuable tool in measuring the levels of methylated CpG dinucleotides. Due to the frequent use of this technique, high-throughput sequencing data sets are available that allow a detailed quantitative characterization of the underlying interaction between methylated DNA and MBD proteins. Analyzing such data sets, we first found that two such proteins cannot bind closer to each other than 2 bp, consistent with structural models of the DNA-protein interaction. Second, the large amount of sequencing data allowed us to find rather weak but nevertheless clearly statistically significant sequence preferences for several bases around the required CpG. These results demonstrate that pulldown sequencing is a high-precision tool in characterizing DNA-protein interactions.

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