

## **Translocation studies of phosphonic acid antibiotic through OmpF and its mutants**

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OmpF (Outer membrane Protein F) is a majorly expressed outer membrane porin of *Escherichia coli*, which allows the translocation of hydrophilic molecules with molecular weight less than 600 Da. Here, we studied the translocation of phosphonic acid antibiotic (Fosfomycin) through OmpF and its derived mutants. To this end, We employed applied-field and metadynamics simulations to investigate the transport properties of fosfomycin through OmpF and its mutant channels. Our results suggest that the positively charged residues in the constriction region, plays an active role in the translocation of anionic antibiotics.