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by

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***Four-Body Contact Potentials derived from Two Protein Databases to
Discriminate Native structures from Decoys***

ABSTRACT

We have developed a new scheme to derive four-body contact potentials, primarily with the intention of devising a way to consider protein interactions as being more cooperative, but also with the intention of distinguishing between surface and buried residues. The four-body contact potentials can discriminate native structures from partially unfolded or deliberately misfolded structures. We used two protein datasets, one with resolution $\approx 1.5\text{\AA}$ and the other with resolution $\approx 2.5\text{\AA}$, to separately derive two sets of four-body contact potentials. Surprisingly, the latter one shows better Z-score in fold recognition.