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**Penta-Coordinate Phosphorus Intermediates Analysis on Phospho-related Proteins**

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**摘要** In this paper, based on known crystal structures of square pyramid (SP) and trigonal bipyramid (TBP) penta coordinated phosphorus compounds containing amino acid side chains, such as amino, carboxyl, hydroxyl or thiol, a software for survey the P(5)-structure of phosphorylated proteins was derived. By this software, it was found that 382 of 398 phosphorus related kinases (96%) from current PDB could go through the penta-coordinated phosphorus transition state or intermediate.

**关键词** [penta-coordinate phosphorus intermediate](#), [square pyramid](#), [trigonal pyramid](#)

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**Abstract** In this paper, based on known crystal structures of square pyramid (SP) and trigonal bipyramid (TBP) penta coordinated phosphorus compounds containing amino acid side chains, such as amino, carboxyl, hydroxyl or thiol, a software for survey the P(5)-structure of phosphorylated proteins was derived. By this software, it was found that 382 of 398 phosphorus related kinases (96%) from current PDB could go through the penta-coordinated phosphorus transition state or intermediate.

**Key words** [penta-coordinate phosphorus intermediate](#) [square pyramid](#) [trigonal pyramid](#)

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