

Supporting Information Available

Figure S1 for the RMSD and some key internuclear distances *versus* the simulation time for wild-type HIV-1 protease binding with inhibitors; Figure S2 for comparison between the X-ray structures of the WT and mutated HIV-1 protease; Figure S3 for the RMSD and some key internuclear distances *versus* the simulation time for SQV binding with the I54M mutant, APV binding with the V82F mutant, and IDV binding with the R8Q mutant; Tables S1 to S9 for the detailed energetic results in comparison with the corresponding experimental data. Tables S10 for the comparison between the X-ray structures of the WT and mutated HIV-1 protease in the RMSD of the backbone and ligand atoms. This material is available free of charge *via* the Internet at <http://pubs.acs.org>.

References

- (1) Ho, D. D.; Toyoshima, T.; Mo, H.; Kempf, D. J.; Norbeck, D.; Chen, C. M.; Wideburg, N. E.; Burt, S. K.; Erickson, J. W.; Singh, M. K. *J. Virol.* **1994**, *68*, 2016-2020.
- (2) Chaix-Couturier, C.; Holtzer, C.; Phillips, K. A.; Durand-Zaleski, I.; Stansell, J. *Pharmacocon.* **2000**, *18*, 425-433.
- (3) Nitschko, H.; Gelderblom, H. R.; Schatzl, H.; Von-der-Helm, K. *Int. Conf. AIDS* **1991**, *7*, 16-21.
- (4) Supuran, C. T.; Innocenti, A.; Mastrolorenzo, A.; Scozzafava, A. *Mini-Rev. Med. Chem.* **2004**, *4*, 189-200.
- (5) Mastrolorenzo, A.; Rusconi, S.; Scozzafava, A.; Supuran, C. T. *Expert Opin. Ther. Pat.* **2006**, *16*, 1067-1091.
- (6) Ghosh, A. K.; Chapsal, B. D.; Weber, I. T.; Mitsuya, H. *Acc. Chem. Res.* **2008**, *41*, 78-86.