Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information: Developing End-Point Methods for Absolute Binding Free Energy Calculation Using the Boltzmann-Quasiharmonic Model

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Table S1. The coefficient of determination R^2 and averaged unsigned errors (AUE, in kcal/mol) in the absolute binding free energies from different end-point calculations relative to the experimental results. For comparison, the results obtained using the PMF method are also included.

	BQH/ PBSA	QHIC/ PBSA	QHCC/ PBSA	NMA/ PBSA	BQH/ 3D-RISM	QHIC/ 3D-RISM	QHCC/ 3D-RISM	NMA/ 3D-RISM	PMF[b]
R^2	0.62	0.69	0.48	0.27	0.50	0.63	0.32	0.01	0.69
AUE	2.40	1.98	3.11	8.99	5.53	4.80	5.24	13.23	1.48

Table S2. The coefficients of determination R^2 in the estimated absolute binding free energies from the QHIC/PBSA and BQH/PBSA compared with the those reported in the SAMPL8 challenge[a].

Method	R^2
DDM/AMOEBA/BAR	0.78
ATM/GAFF2-AM1BCC/TIP3P/HREM	0.79
PMF/GAFF2-AM1BCC/TIP3P/MD-US	0.69
QHIC/PBSA[b]	0.69
BQH/PBSA[b]	0.62
AM1BCC/MMPBSA/TIP4PEW/MD	0.02
ML/NNET/CORINA-descriptors-8	0.54
SILCS/LGFE/TIP3P/GCMC-MD	0.26
DDM/C36/TIP3P/MD/MBAR	0.034
MD/ParamChem/TIP3P/REUS/	0.012

a. *https://github.com/samplchallenges/SAMPL8/blob/master/host_guest/Analysis/Ranked_Accuracy/GDCC/StatisticsTables/statistics.csv*

b. *Reported in the present study.*

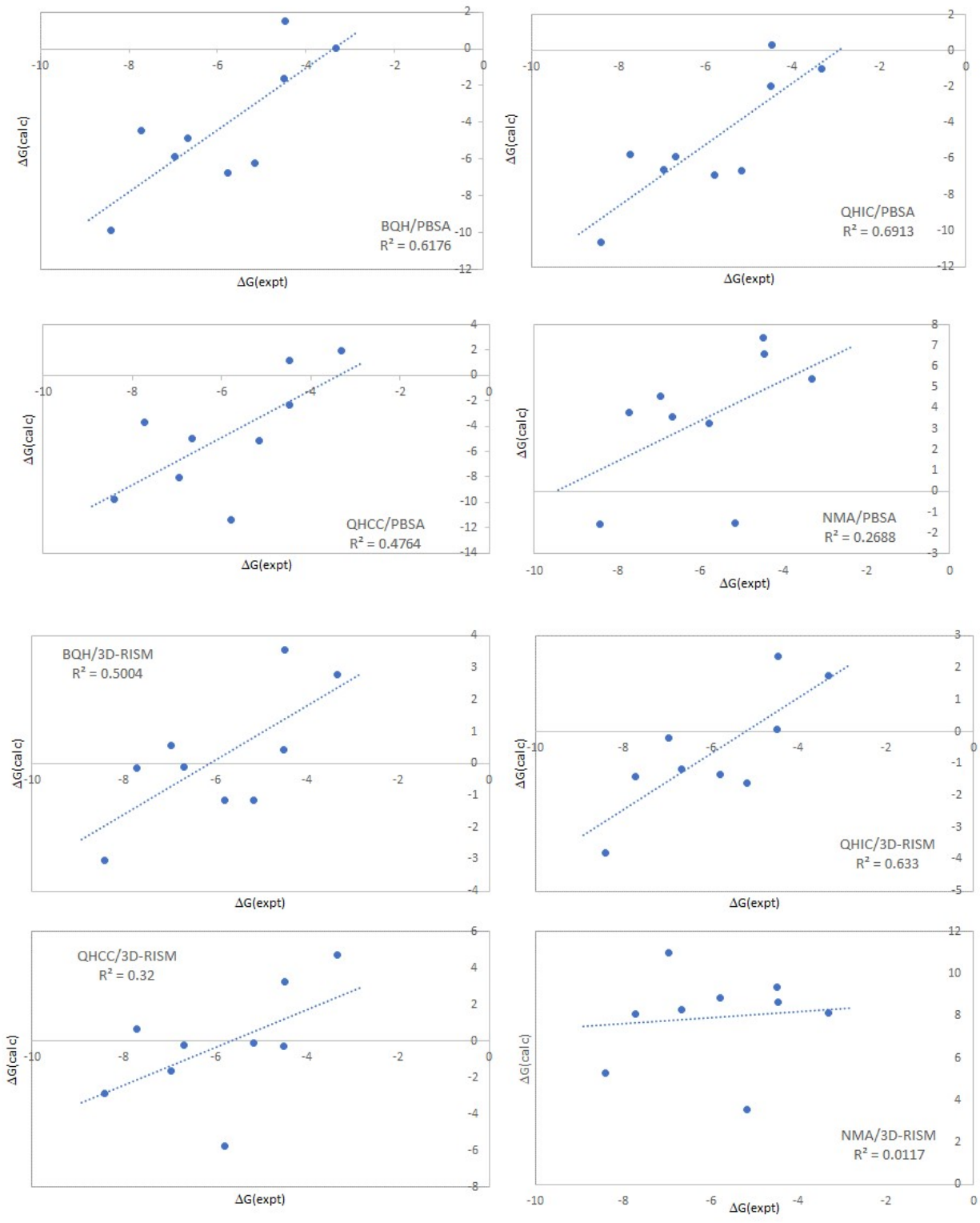

Figure S1. Correlations of the absolute binding free energies from the end-point calculations with the experimental values.

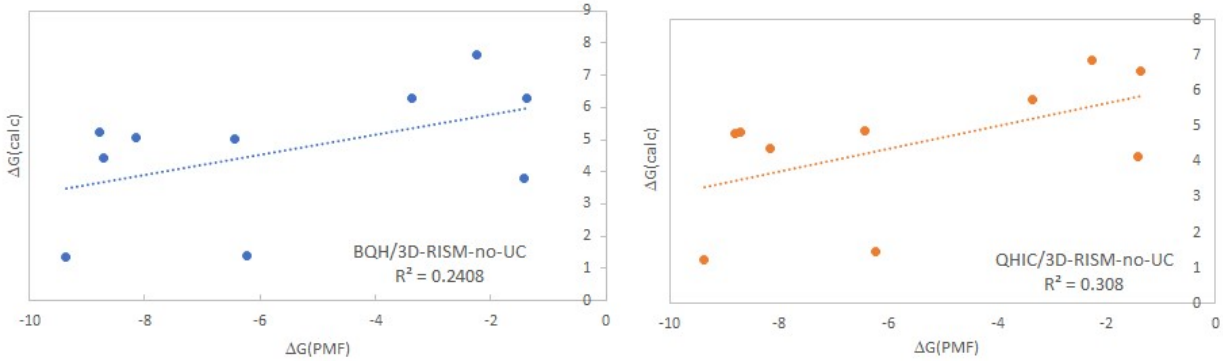

Figure S2. Correlations between the absolute binding free energies obtained using BQH/3D-RISM and QHIC/3D-RISM without the partial molar volume correction[55, 56] and the PMF results.