Supporting Information

Temperature Dependences and Enthalpic Discrimination of Homochiral Pairwise Interactions of Six α-Amino Acid Enantiomers in Pure Water

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Table S1. Experimental dilution enthalpies of of L-proline and D-proline in pure water at T = (288.15 to 323.15) K and under p = 0.1 MPa [a,b,c,d]

N	m_N / $\mathrm{mol \cdot kg^{-1}}$	m_N / $\mathrm{mol \cdot kg^{-1}}$	$\Delta H(m_{N-1} \rightarrow m_N)$ / $\mathrm{J \cdot mol^{-1}}$	N	m_N / $\mathrm{mol \cdot kg^{-1}}$	m_N / $\mathrm{mol \cdot kg^{-1}}$	$\Delta H(m_{N-1} \rightarrow m_N)$ / $\mathrm{J \cdot mol^{-1}}$
			L-proline				
	T = 288.15 K (m_0 = 0.6035 $\mathrm{mol \cdot kg^{-1}}$)				T = 293.15 K (m_0 = 0.6035 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00300	0.00895	-169.99(-0.01)	2	0.00300	0.00895	-182.47(-0.29)
3	0.00895	0.01484	-167.57(0.03)	3	0.00895	0.01484	-179.57(0.31)
4	0.01484	0.02067	-164.20(0.01)	4	0.01484	0.02067	-176.97(-0.36)
5	0.02067	0.02645	-160.52(0.37)	5	0.02067	0.02645	-172.47(-0.18)
6	0.02645	0.03216	-157.01(-0.05)	6	0.02645	0.03216	-168.69(-0.16)
7	0.03216	0.03781	-153.68(-0.42)	7	0.03216	0.03781	-164.10(-0.26)
8	0.03781	0.04340	-150.10(0.07)	8	0.03781	0.04340	-160.38(-0.38)
9	0.04340	0.04893	-148.10(-0.37)	9	0.04340	0.04893	-158.34(0.27)
10	0.04893	0.05441	-145.99(0.03)	10	0.04893	0.05441	-153.82(-0.11)
11	0.05441	0.05982	-142.53(0.00)	11	0.05441	0.05982	-150.99(-0.08)
12	0.05982	0.06517	-140.13(-0.07)	12	0.05982	0.06517	-148.07(0.25)
13	0.06517	0.07047	-137.34(-0.18)	13	0.06517	0.07047	-145.94(0.13)
14	0.07047	0.07570	-134.61(0.01)	14	0.07047	0.07570	-143.43(-0.03)
15	0.07570	0.08087	-131.91(0.15)	15	0.07570	0.08087	-139.70(0.08)
16	0.08087	0.08599	-129.54(0.07)	16	0.08087	0.08599	-137.15(0.00)
17	0.08599	0.09104	-127.15(-0.08)	17	0.08599	0.09104	-134.58(0.21)
18	0.09104	0.09603	-124.40(-0.10)	18	0.09104	0.09603	-132.36(-0.21)
19	0.09603	0.10097	-122.42(0.40)	19	0.09603	0.10097	-129.59(-0.36)
20	0.10097	0.10584	-119.76(0.18)	20	0.10097	0.10584	-126.74(-0.01)
	T = 298.15 K (m_0 = 0.6118 $\mathrm{mol \cdot kg^{-1}}$)				T = 303.15 K (m_0 = 0.6035 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00179	0.00772	-215.11(-1.90)	2	0.00300	0.00895	-208.18(0.14)
3	0.00772	0.01359	-210.97(-0.49)	3	0.00895	0.01484	-204.32(0.01)
4	0.01359	0.0194	-206.25(0.00)	4	0.01484	0.02067	-200.16(0.11)
5	0.0194	0.02516	-204.02(0.19)	5	0.02067	0.02645	-195.80(0.15)
6	0.02516	0.03085	-198.02(1.03)	6	0.02645	0.03216	-191.20(0.00)
7	0.03085	0.03648	-195.47(1.38)	7	0.03216	0.03781	-187.88(-0.19)
8	0.03648	0.04206	-190.86(1.75)	8	0.03781	0.04340	-184.91(-0.66)
9	0.04206	0.04757	-188.14(1.65)	9	0.04340	0.04893	-181.54(-0.11)
10	0.04757	0.05302	-183.86(1.02)	10	0.04893	0.05441	-178.52(-0.36)
11	0.05302	0.05842	-181.03(1.00)	11	0.05441	0.05982	-174.94(-0.70)

12	0.05842	0.06375	-177.52(0.83)	12	0.05982	0.06517	-170.85(-0.22)
13	0.06375	0.06903	-174.42(0.43)	13	0.06517	0.07047	-167.64(0.28)
14	0.06903	0.07425	-171.26(0.14)	14	0.07047	0.07570	-164.00(-0.14)
15	0.07425	0.07940	-166.47(-0.04)	15	0.07570	0.08087	-159.78(-0.04)
16	0.07940	0.08450	-164.87(-0.34)	16	0.08087	0.08599	-156.14(0.51)
17	0.08450	0.08954	-162.39(-0.91)	17	0.08599	0.09104	-153.44(0.12)
18	0.08954	0.09452	-159.27(0.01)	18	0.09104	0.09603	-151.10(-0.26)
19	0.09452	0.09943	-155.91(-0.11)	19	0.09603	0.10097	-149.11(0.09)
20	0.09943	0.10429	-153.61(0.12)	20	0.10097	0.10584	-146.36(0.10)
	T = 308.15 K (m_0 = 0.6035 mol·kg^{-1})				T = 313.15 K (m_0 = 0.6135 mol·kg^{-1})		
2	0.00300	0.00895	-221.50(-0.33)	2	0.00305	0.00910	-223.09(-0.17)
3	0.00895	0.01484	-218.67(-0.93)	3	0.00910	0.01509	-218.17(0.33)
4	0.01484	0.02067	-214.16(-1.15)	4	0.01509	0.02101	-215.25(-0.08)
5	0.02067	0.02645	-209.64(-1.06)	5	0.02101	0.02688	-208.75(0.73)
6	0.02645	0.03216	-205.43(-0.97)	6	0.02688	0.03269	-207.58(-0.15)
7	0.03216	0.03781	-201.63(-0.80)	7	0.03269	0.03843	-203.66(-0.16)
8	0.03781	0.04340	-196.82(-1.20)	8	0.03843	0.04412	-199.30(0.40)
9	0.04340	0.04893	-195.07(-0.24)	9	0.04412	0.04974	-194.77(-0.24)
10	0.04893	0.05441	-192.56(-1.87)	10	0.04974	0.05530	-187.83(1.76)
11	0.05441	0.05982	-186.97(-1.57)	11	0.05530	0.06081	-184.10(1.63)
12	0.05982	0.06517	-182.35(-1.33)	12	0.06081	0.06625	-182.72(0.19)
13	0.06517	0.07047	-179.99(-1.62)	13	0.06625	0.07163	-181.03(-0.71)
14	0.07047	0.07570	-176.57(-1.65)	14	0.07163	0.07695	-177.38(-0.95)
15	0.07570	0.08087	-172.66(-1.71)	15	0.07695	0.08220	-174.60(-0.37)
16	0.08087	0.08599	-169.46(-1.92)	16	0.08220	0.08740	-171.13(-1.14)
17	0.08599	0.09104	-166.51(-1.98)	17	0.08740	0.09254	-167.59(-0.11)
18	0.09104	0.09603	-163.55(-2.10)	18	0.09254	0.09761	-166.46(0.13)
19	0.09603	0.10097	-160.68(-2.03)	19	0.09761	0.10263	-162.02(0.32)
20	0.10097	0.10584	-156.68(-1.47)	20	0.10263	0.10758	-159.73(0.21)
	T = 318.15 K (m_0 = 0.6135 mol·kg^{-1})				T = 323.15 K (m_0 = 0.6497 mol·kg^{-1})		
2	0.00323	0.00963	-236.81(0.10)	2	0.00323	0.00963	-245.28(0.31)
3	0.00963	0.01598	-242.99(-2.55)	3	0.00963	0.01598	-242.59(0.27)
4	0.01598	0.02225	-226.39(0.87)	4	0.01598	0.02225	-240.44(0.29)
5	0.02225	0.02847	-218.10(1.25)	5	0.02225	0.02847	-236.52(0.20)
6	0.02847	0.03462	-224.75(0.45)	6	0.02847	0.03462	-230.02(0.15)

7	0.03462	0.04070	-215.50(-0.09)	7	0.03462	0.04070	-222.13(0.92)
8	0.04070	0.04672	-211.83(-0.03)	8	0.04070	0.04672	-222.14(0.38)
9	0.04672	0.05268	-208.87(0.38)	9	0.04672	0.05268	-216.69(-0.35)
10	0.05268	0.05857	-208.24(-0.63)	10	0.05268	0.05857	-214.13(-0.64)
11	0.05857	0.06440	-201.39(0.45)	11	0.05857	0.06440	-208.00(-0.12)
12	0.06440	0.07016	-197.30(0.38)	12	0.06440	0.07016	-205.42(-0.68)
13	0.07016	0.07586	-192.42(0.66)	13	0.07016	0.07586	-200.83(-0.32)
14	0.07586	0.08149	-189.52(-0.32)	14	0.07586	0.08149	-197.83(0.42)
15	0.08149	0.08706	-184.78(0.72)	15	0.08149	0.08706	-193.55(0.47)
16	0.08706	0.09256	-182.92(0.61)	16	0.08706	0.09256	-189.83(0.22)
17	0.09256	0.09800	-179.40(0.16)	17	0.09256	0.09800	-185.49(-0.29)
18	0.09800	0.10338	-175.79(-0.28)	18	0.09800	0.10338	-183.44(-0.02)
19	0.10338	0.10869	-172.11(0.28)	19	0.10338	0.10869	-179.12(0.25)
20	0.10869	0.11394	-167.96(-0.09)	20	0.10869	0.11394	-175.36 (-0.24)

D-proline

T = 288.15 K (m_0 = 0.6541 mol·kg^{-1})				T = 293.15 K(m_0 = 0.6541 mol·kg^{-1})			
2	0.00325	0.00970	-154.84(0.02)	2	0.00325	0.00970	-168.65(0.01)
3	0.00970	0.01609	-153.49(-0.11)	3	0.00970	0.01609	-166.75(0.59)
4	0.01609	0.02241	-150.86(-0.09)	4	0.01609	0.02241	-164.51(-0.02)
5	0.02241	0.02866	-147.69(-0.28)	5	0.02241	0.02866	-159.97(0.05)
6	0.02866	0.03485	-144.31(0.08)	6	0.02866	0.03485	-156.17(0.59)
7	0.03485	0.04098	-141.47(-0.28)	7	0.03485	0.04098	-152.41(-0.04)
8	0.04098	0.04704	-138.42(-0.28)	8	0.04098	0.04704	-148.83(-0.13)
9	0.04704	0.05304	-135.06(-0.57)	9	0.04704	0.05304	-146.41(-0.07)
10	0.05304	0.05897	-132.18(-0.29)	10	0.05304	0.05897	-143.79(-0.05)
11	0.05897	0.06483	-129.38(-0.30)	11	0.05897	0.06483	-140.98(0.03)
12	0.06483	0.07063	-127.17(-0.19)	12	0.06483	0.07063	-138.41(0.09)
13	0.07063	0.07637	-125.07(-0.24)	13	0.07063	0.07637	-135.94(0.25)
14	0.07637	0.08204	-122.74(-0.05)	14	0.07637	0.08204	-133.56(0.18)
15	0.08204	0.08765	-120.22(0.00)	15	0.08204	0.08765	-130.39(0.09)
16	0.08765	0.09319	-118.10(0.41)	16	0.08765	0.09319	-127.84(0.15)
17	0.09319	0.09867	-115.89(0.27)	17	0.09319	0.09867	-125.15(0.12)
18	0.09867	0.10408	-113.69(0.30)	18	0.09867	0.10408	-122.58(0.02)
19	0.10408	0.10943	-111.08(-0.17)	19	0.10408	0.10943	-120.17(0.02)
20	0.10943	0.11471	-108.25(-0.02)	20	0.10943	0.11471	-117.93(0.13)

T = 298.15 K (m_0 = 0.6118 mol·kg^{-1})

2	0.00304	0.00907	-193.36(0.74)
3	0.00907	0.01505	-192.59(0.11)
4	0.01505	0.02096	-187.99(-0.12)
5	0.02096	0.02681	-184.89(0.00)
6	0.02681	0.03260	-179.77(-0.22)
7	0.03260	0.03833	-175.80(0.11)
8	0.03833	0.04400	-172.39(0.14)
9	0.04400	0.04961	-169.13(0.11)
10	0.04961	0.05516	-165.49(0.28)
11	0.05516	0.06064	-161.87(0.20)
12	0.06064	0.06607	-158.89(-0.55)
13	0.06607	0.07144	-156.09(0.23)
14	0.07144	0.07674	-153.00(0.27)
15	0.07674	0.08199	-149.83(0.28)
16	0.08199	0.08717	-145.49(0.60)
17	0.08717	0.09229	-145.25(0.06)
18	0.09229	0.09736	-142.75(0.12)
19	0.09736	0.10236	-137.75(0.91)
20	0.10236	0.10730	-136.88(-0.78)

T = 303.15 K (m_0 = 0.6541 mol·kg^{-1})

2	0.00325	0.00970	-190.05(0.14)
3	0.00970	0.01609	-187.41(-0.15)
4	0.01609	0.02241	-184.06(0.02)
5	0.02241	0.02866	-180.43(-0.03)
6	0.02866	0.03485	-175.24(-0.29)
7	0.03485	0.04098	-170.99(-0.46)
8	0.04098	0.04704	-167.93(0.18)
9	0.04704	0.05304	-164.80(-0.17)
10	0.05304	0.05897	-161.96(-0.31)
11	0.05897	0.06483	-159.23(0.09)
12	0.06483	0.07063	-156.04(-0.46)
13	0.07063	0.07637	-152.62(0.01)
14	0.07637	0.08204	-150.04(-0.12)
15	0.08204	0.08765	-147.17(-0.34)
16	0.08765	0.09319	-144.70(-0.37)
17	0.09319	0.09867	-142.59(-0.14)
18	0.09867	0.10408	-139.40(0.47)
19	0.10408	0.10943	-136.99(0.46)
20	0.10943	0.11471	-133.54(0.28)

T = 308.15 K (m_0 = 0.6284 mol·kg^{-1})

2	0.00312	0.00932	-181.92(-0.13)
3	0.00932	0.01545	-177.68 (0.06)
4	0.01545	0.02152	-174.07(-0.09)
5	0.02152	0.02753	-170.49(-0.33)
6	0.02753	0.03348	-166.36(-0.24)
7	0.03348	0.03937	-162.45(0.33)
8	0.03937	0.04519	-159.02(0.27)
9	0.04519	0.05095	-155.98(0.05)
10	0.05095	0.05665	-153.09(-0.06)
11	0.05665	0.06228	-150.34(-0.12)
12	0.06228	0.06786	-147.75(0.19)
13	0.06786	0.07337	-145.37(0.08)
14	0.07337	0.07881	-142.41(0.22)
15	0.07881	0.08420	-139.53(0.00)

T = 313.15 K (m_0 = 0.6284 mol·kg^{-1})

2	0.00312	0.00932	-192.19(-0.59)
3	0.00932	0.01545	-191.65(0.11)
4	0.01545	0.02152	-187.26(0.29)
5	0.02152	0.02753	-182.94(0.23)
6	0.02753	0.03348	-178.47(-0.51)
7	0.03348	0.03937	-174.98(-0.76)
8	0.03937	0.04519	-169.61(0.08)
9	0.04519	0.05095	-167.37(-0.07)
10	0.05095	0.05665	-163.12(-0.34)
11	0.05665	0.06228	-159.89(-1.10)
12	0.06228	0.06786	-158.56(0.02)
13	0.06786	0.07337	-156.23(-0.52)
14	0.07337	0.07881	-153.76(-0.37)
15	0.07881	0.08420	-149.53(0.21)

16	0.08420	0.08952	-137.58(-0.20)	16	0.08420	0.08952	-147.65(-0.24)
17	0.08952	0.09479	-134.90(-0.17)	17	0.08952	0.09479	-144.80(0.01)
18	0.09479	0.09999	-132.99(-0.06)	18	0.09479	0.09999	-142.25(0.08)
19	0.09999	0.10512	-130.58(-0.18)	19	0.09999	0.10512	-139.51(0.31)
20	0.10512	0.11020	-127.53(0.00)	20	0.10512	0.11020	-136.67(0.21)
	T = 318.15 K (m_0 = 0.6284 $\mathrm{mol \cdot kg^{-1}}$)				T = 323.15 K (m_0 = 0.6250 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00312	0.00932	-211.37(-4.07)	2	0.00310	0.00927	-240.56(0.60)
3	0.00932	0.01545	-210.14(-4.18)	3	0.00927	0.01537	-237.35(0.21)
4	0.01545	0.02152	-207.92(-4.48)	4	0.01537	0.02141	-232.63(-0.30)
5	0.02152	0.02753	-204.38(-3.82)	5	0.02141	0.02738	-229.60(0.48)
6	0.02753	0.03348	-195.77(-6.14)	6	0.02738	0.03330	-224.29(0.71)
7	0.03348	0.03937	-192.81(-4.76)	7	0.03330	0.03915	-220.43 (0.21)
8	0.03937	0.04519	-187.76(-4.04)	8	0.03915	0.04494	-215.80(1.02)
9	0.04519	0.05095	-186.85(-4.86)	9	0.04494	0.05067	-206.26(2.44)
10	0.05095	0.05665	-183.25(-4.78)	10	0.05067	0.05634	-202.08(2.10)
11	0.05665	0.06228	-179.64(-4.68)	11	0.05634	0.06194	-201.92(0.64)
12	0.06228	0.06786	-173.92(-6.16)	12	0.06194	0.06749	-200.08(-0.05)
13	0.06786	0.07337	-172.60(-4.81)	13	0.06749	0.07297	-193.81(1.16)
14	0.07337	0.07881	-170.03(-5.04)	14	0.07297	0.07839	-192.03(0.54)
15	0.07881	0.08420	-167.13(-5.37)	15	0.07839	0.08374	-187.12(0.94)
16	0.08420	0.08952	-163.95(-4.76)	16	0.08374	0.08904	-183.66(0.36)
17	0.08952	0.09479	-160.90(-4.26)	17	0.08904	0.09427	-181.59(0.03)
18	0.09479	0.09999	-158.02(-5.33)	18	0.09427	0.09944	-179.92(-0.08)
19	0.09999	0.10512	-154.51(-5.40)	19	0.09944	0.10455	-175.00(-0.10)
20	0.10512	0.11020	-153.24(-3.08)	20	0.10455	0.10960	-171.95(-0.74)

[a] The atmospheric pressure was determined by a Fortin barometer (FM-52, Russell Scientific Instruments).

[b] The molality m is defined as moles of the solute per mass (kg) of solvent. m_0 is the molality of titrant solution in the injection syringe of ITC. $m_{N\text{-}1}$ and m_N are molalities of solutions in the measuring cell after the (N-1)th and the Nth titrations (N=2, 3, 4…).

[c] The values in parentheses are the evaluated relative deviations (δ) between experimental and calculated values of $\Delta H(m_{N-1} \rightarrow m_N)$, denoted here respectively by $\Delta H(\mathrm{exptl})$ and $\Delta H(\mathrm{calcd})$, $\delta = 100\{[\Delta H(\mathrm{exptl}) - \Delta H(\mathrm{calcd})] / \Delta H(\mathrm{exptl})\}$, in which the values of $\Delta H(\mathrm{calcd})$ were calculated according to equation 4 in the text.

[d] The estimated standard uncertainties (u) are $u(T)$=0.01 K, $u(p)$ = 5 kPa, $u(m)$=0.0001 mol·kg^{-1}.

The combined standard uncertainties of $\Delta H(\text{exptl})$, $u(\Delta H(\text{exptl}))$ = 0.05 J· mol^{-1}.

Table S2. Experimental dilution enthalpies of of L-alanine and D-alanine in pure water at T = (288.15 to 323.15) K and under p = 0.1 MPa [a,b,c,d]

N	m_N / mol · kg^{-1}	m_N / mol · kg^{-1}	$\Delta H(m_{N-1} \to m_N)$ / J · mol^{-1}	N	m_N / mol · kg^{-1}	m_N / mol · kg^{-1}	$\Delta H(m_{N-1} \to m_N)$ / J · mol^{-1}
			L-alaine				
	T = 288.15 K (m_0 = 0.5990 mol· kg^{-1})				T=293.15K (m_0 = 0.5990 mol· kg^{-1})		
2	0.00298	0.00888	-69.98(-1.42)	2	0.00298	0.00888	-95.92(0.28)
3	0.00888	0.01473	-68.56(-1.17)	3	0.00888	0.01473	-93.42(0.02)
4	0.01473	0.02052	-66.85(-1.21)	4	0.01473	0.02052	-91.45(0.14)
5	0.02052	0.02624	-65.46(-1.23)	5	0.02052	0.02624	-89.16(0.04)
6	0.02624	0.03191	-63.98(-1.35)	6	0.02624	0.03191	-86.75(0.65)
7	0.03191	0.03752	-62.93(-1.54)	7	0.03191	0.03752	-84.75(1.09)
8	0.03752	0.04307	-61.38(-2.02)	8	0.03752	0.04307	-82.46(0.96)
9	0.04307	0.04856	-60.45(-2.11)	9	0.04307	0.04856	-80.61(0.49)
10	0.04856	0.05399	-59.29(-1.60)	10	0.04856	0.05399	-79.02(0.09)
11	0.05399	0.05937	-57.91(-1.65)	11	0.05399	0.05937	-77.59(0.30)
12	0.05937	0.06468	-56.83(-1.20)	12	0.05937	0.06468	-76.08(0.09)
13	0.06468	0.06993	-55.83(-1.42)	13	0.06468	0.06993	-74.55(0.17)
14	0.06993	0.07512	-55.01(-1.50)	14	0.06993	0.07512	-73.54(-0.03)
15	0.07512	0.08026	-53.78(-1.05)	15	0.07512	0.08026	-72.07(-0.11)
16	0.08026	0.08533	-52.95(-1.34)	16	0.08026	0.08533	-70.77(-0.21)
17	0.08533	0.09035	-51.99(-0.94)	17	0.08533	0.09035	-69.36(0.13)
18	0.09035	0.09530	-51.07(-1.14)	18	0.09035	0.09530	-68.17(0.27)
19	0.09530	0.10020	-50.33(-0.90)	19	0.09530	0.10020	-67.11(-0.02)
20	0.10020	0.10504	-49.45(-0.91)	20	0.10020	0.10504	-65.83(-0.17)
	T = 298.15 K (m_0 = 0.5997 mol· kg^{-1})				T = 303.15 K (m_0 = 0.5997 mol· kg^{-1})		
2	0.00298	0.00889	-121.27(0.27)	2	0.00298	0.00889	-147.24(0.43)
3	0.00889	0.01475	-117.91(-0.04)	3	0.00889	0.01475	-142.76(0.72)
4	0.01475	0.02054	-114.40(-0.04)	4	0.01475	0.02054	-140.41(0.75)
5	0.02054	0.02628	-111.92(0.07)	5	0.02054	0.02628	-136.63(1.03)
6	0.02628	0.03195	-108.33(0.09)	6	0.02628	0.03195	-132.20(-0.40)
7	0.03195	0.03757	-107.68(0.07)	7	0.03195	0.03757	-129.83(-0.10)

8	0.03757	0.04312	-104.95(-0.49)	8	0.03757	0.04312	-128.72(-1.00)
9	0.04312	0.04862	-102.73(-0.03)	9	0.04312	0.04862	-124.43(-0.12)
10	0.04862	0.05406	-100.83(0.02)	10	0.04862	0.05406	-121.72(-0.01)
11	0.05406	0.05944	-98.88(0.38)	11	0.05406	0.05944	-119.62(-0.35)
12	0.05944	0.06475	-96.42(0.12)	12	0.05944	0.06475	-117.01(-0.33)
13	0.06475	0.07001	-94.56(0.27)	13	0.06475	0.07001	-114.99(0.76)
14	0.07001	0.07521	-93.53(0.64)	14	0.07001	0.07521	-113.37(-0.13)
15	0.07521	0.08035	-91.18(0.27)	15	0.07521	0.08035	-110.46(0.49)
16	0.08035	0.08543	-89.56(0.23)	16	0.08035	0.08543	-108.79(1.31)
17	0.08543	0.09045	-87.84(0.17)	17	0.08543	0.09045	-106.27(0.59)
18	0.09045	0.09542	-86.36(0.46)	18	0.09045	0.09542	-104.24(0.95)
19	0.09542	0.10032	-84.60(0.07)	19	0.09542	0.10032	-102.13(0.58)
20	0.10032	0.10516	-83.05(0.50)	20	0.10032	0.10516	-100.13(0.60)
	T = 308.15 K (m_0 = 0.5997 mol·kg^{-1})				T = 313.15 K (m_0=0.5997 mol·kg^{-1})		
2	0.00298	0.00889	-170.28(-1.23)	2	0.00298	0.00889	-186.52(0.44)
3	0.00889	0.01475	-165.64(-0.76)	3	0.00889	0.01475	-183.90(-0.81)
4	0.01475	0.02054	-163.06(-0.64)	4	0.01475	0.02054	-178.38(-1.29)
5	0.02054	0.02628	-152.18(1.61)	5	0.02054	0.02628	-174.49(0.55)
6	0.02628	0.03195	-153.34(0.24)	6	0.02628	0.03195	-171.25(-0.39)
7	0.03195	0.03757	-150.68(0.18)	7	0.03195	0.03757	-167.49(0.38)
8	0.03757	0.04312	-146.19(0.43)	8	0.03757	0.04312	-162.52(-0.10)
9	0.04312	0.04862	-143.95(0.02)	9	0.04312	0.04862	-161.05(0.27)
10	0.04862	0.05406	-141.03(-0.31)	10	0.04862	0.05406	-157.76(0.49)
11	0.05406	0.05944	-138.51(0.23)	11	0.05406	0.05944	-153.70(-0.10)
12	0.05944	0.06475	-134.88(0.22)	12	0.05944	0.06475	-149.72(-0.88)
13	0.06475	0.07001	-132.55(-0.26)	13	0.06475	0.07001	-145.69(0.85)
14	0.07001	0.07521	-130.03(-0.04)	14	0.07001	0.07521	-144.33(0.00)
15	0.07521	0.08035	-127.09(-0.23)	15	0.07521	0.08035	-139.82(0.55)
16	0.08035	0.08543	-124.84(0.12)	16	0.08035	0.08543	-139.20(-0.02)
17	0.08543	0.09045	-122.37(-0.29)	17	0.08543	0.09045	-136.54(-0.73)
18	0.09045	0.09542	-119.73(-0.49)	18	0.09045	0.09542	-133.78(-0.29)
19	0.09542	0.10032	-117.94(-0.10)	19	0.09542	0.10032	-131.24(-0.43)
20	0.10032	0.10516	-115.24(0.16)	20	0.10032	0.10516	-128.00(-0.37)
	T = 318.15 K (m_0 = 0.6001 mol·kg^{-1})				T = 323.15 K (m_0 = 0.6117 mol·kg^{-1})		
2	0.00298	0.00890	-205.88(-0.30)	2	0.00304	0.00907	-223.20(-0.17)

3	0.00890	0.01476	-202.04(-0.31)	3	0.00907	0.01504	-219.79(-0.29)
4	0.01476	0.02055	-196.09(-0.41)	4	0.01504	0.02095	-214.36(-0.14)
5	0.02055	0.02629	-191.39(0.10)	5	0.02095	0.02680	-208.22(0.41)
6	0.02629	0.03197	-190.46(-0.03)	6	0.02680	0.03259	-207.35(-0.44)
7	0.03197	0.03759	-184.94(0.04)	7	0.03259	0.03832	-201.94(0.36)
8	0.03759	0.04315	-178.04(-0.58)	8	0.03832	0.04399	-192.53(0.65)
9	0.04315	0.04865	-174.75(-0.27)	9	0.04399	0.04960	-189.21(0.20)
10	0.04865	0.05409	-171.80(-0.45)	10	0.04960	0.05515	-187.17(0.56)
11	0.05409	0.05947	-168.02(-0.39)	11	0.05515	0.06063	-183.78(-0.14)
12	0.05947	0.06480	-162.99(-0.11)	12	0.06063	0.06606	-178.98(0.67)
13	0.06480	0.07006	-161.02(-0.17)	13	0.06606	0.07142	-174.43(0.45)
14	0.07006	0.07526	-158.16(-0.44)	14	0.07142	0.07673	-171.43(0.28)
15	0.07526	0.08041	-154.70(-0.51)	15	0.07673	0.08197	-167.48(0.30)
16	0.08041	0.08549	-151.80(-0.38)	16	0.08197	0.08715	-163.74(0.70)
17	0.08549	0.09051	-148.95(-0.69)	17	0.08715	0.09228	-160.89(0.55)
18	0.09051	0.09548	-145.71(-0.59)	18	0.09228	0.09734	-156.43(-0.11)
19	0.09548	0.10038	-142.99(-0.21)	19	0.09734	0.10234	-153.95(0.53)
20	0.10038	0.10523	-138.00(0.63)	20	0.10234	0.10728	-151.33(0.48)

D-alaine

	T = 288.15 K (m_0 = 0.6022 $\mathrm{mol \cdot kg^{-1}}$)				T = 293.15 K (m_0 = 0.5976 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00299	0.00893	-69.91(-0.45)	2	0.00297	0.00886	-95.96(-0.21)
3	0.00893	0.01481	-68.06(0.41)	3	0.00886	0.01470	-93.24(0.10)
4	0.01481	0.02063	-66.17(0.66)	4	0.01470	0.02047	-90.56(-0.36)
5	0.02063	0.02638	-64.78(0.60)	5	0.02047	0.02619	-89.05(-0.84)
6	0.02638	0.03208	-63.56(-0.24)	6	0.02619	0.03184	-86.78(0.02)
7	0.03208	0.03772	-62.29(0.68)	7	0.03184	0.03744	-85.37(0.23)
8	0.03772	0.04330	-60.80(0.86)	8	0.03744	0.04298	-82.44(-0.25)
9	0.04330	0.04882	-58.66(0.51)	9	0.04298	0.04845	-81.53(-0.35)
10	0.04882	0.05428	-58.78(0.56)	10	0.04845	0.05387	-79.97(-0.12)
11	0.05428	0.05968	-57.80(0.80)	11	0.05387	0.05923	-78.10(0.02)
12	0.05968	0.06502	-57.09(-0.03)	12	0.05923	0.06453	-76.84(-0.19)
13	0.06502	0.07030	-55.74(0.78)	13	0.06453	0.06977	-75.18(-0.04)
14	0.07030	0.07553	-55.02(0.57)	14	0.06977	0.07496	-74.26(-0.50)
15	0.07553	0.08069	-53.61(0.48)	15	0.07496	0.08008	-72.54(-0.17)
16	0.08069	0.08579	-52.70(0.28)	16	0.08008	0.08514	-71.24(-0.26)
17	0.08579	0.09083	-51.85(0.39)	17	0.08514	0.09015	-70.13(-0.21)

18	0.09083	0.09581	-51.14(0.12)	18	0.09015	0.09509	-68.93(-0.35)
19	0.09581	0.10074	-50.25(0.13)	19	0.09509	0.09998	-67.87(-0.45)
20	0.10074	0.10560	-49.40(0.18)	20	0.09998	0.10480	-66.33(-0.43)
	T = 298.15 K (m_0 = 0.5976 $\mathrm{mol \cdot kg^{-1}}$)				T = 303.15 K (m_0=0.5976 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00297	0.00886	-120.53(-0.04)	2	0.00297	0.00886	-142.38(0.18)
3	0.00886	0.01470	-117.39(-0.21)	3	0.00886	0.01470	-138.61(0.43)
4	0.01470	0.02047	-112.92(0.04)	4	0.01470	0.02047	-134.69(-0.49)
5	0.02047	0.02619	-110.59(-0.04)	5	0.02047	0.02619	-132.12(-0.38)
6	0.02619	0.03184	-107.86(0.23)	6	0.02619	0.03184	-127.56(0.13)
7	0.03184	0.03744	-106.01(0.00)	7	0.03184	0.03744	-126.99(-0.52)
8	0.03744	0.04298	-102.91(-0.08)	8	0.03744	0.04298	-123.22(0.16)
9	0.04298	0.04845	-101.52(-0.01)	9	0.04298	0.04845	-121.64(0.22)
10	0.04845	0.05387	-99.66(0.25)	10	0.04845	0.05387	-118.83(0.12)
11	0.05387	0.05923	-97.44(0.05)	11	0.05387	0.05923	-115.90(0.31)
12	0.05923	0.06453	-95.66(0.00)	12	0.05923	0.06453	-113.70(-0.08)
13	0.06453	0.06977	-93.70(-0.03)	13	0.06453	0.06977	-111.41(-0.27)
14	0.06977	0.07496	-91.86(-0.04)	14	0.06977	0.07496	-109.20(0.27)
15	0.07496	0.08008	-89.91(-0.02)	15	0.07496	0.08008	-107.06(-0.18)
16	0.08008	0.08514	-88.45(-0.27)	16	0.08008	0.08514	-104.95(-0.03)
17	0.08514	0.09015	-86.52(0.03)	17	0.08514	0.09015	-103.13(-0.15)
18	0.09015	0.09509	-84.86(0.12)	18	0.09015	0.09509	-101.27(0.31)
19	0.09509	0.09998	-83.58(-0.09)	19	0.09509	0.09998	-99.93(0.23)
20	0.09998	0.10480	-81.74(0.01)	20	0.09998	0.10480	-97.91(0.59)
	T = 308.15 K (m_0 = 0.6043 $\mathrm{mol \cdot kg^{-1}}$)				T =313.15 K (m_0 = 0.6043 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00298	0.00889	-168.11(0.62)	2	0.00298	0.00889	-185.56(0.50)
3	0.00889	0.01475	-162.89(0.11)	3	0.00889	0.01475	-183.83(-0.79)
4	0.01475	0.02054	-158.13(0.41)	4	0.01475	0.02054	-178.61(-0.91)
5	0.02054	0.02628	-155.13(0.00)	5	0.02054	0.02628	-173.94(-0.43)
6	0.02628	0.03195	-151.06(0.48)	6	0.02628	0.03195	-169.07(-0.10)
7	0.03195	0.03757	-148.95(0.86)	7	0.03195	0.03757	-166.49(0.13)
8	0.03757	0.04313	-144.02(0.30)	8	0.03757	0.04313	-162.04(-0.02)
9	0.04313	0.04862	-141.66(-0.44)	9	0.04313	0.04862	-159.44(0.18)
10	0.04862	0.05406	-139.49(-0.10)	10	0.04862	0.05406	-156.17(0.10)
11	0.05406	0.05944	-136.32(-0.46)	11	0.05406	0.05944	-153.12(-0.09)
12	0.05944	0.06476	-133.40(-0.42)	12	0.05944	0.06476	-150.31(0.06)

13	0.06476	0.07002	-131.23(0.06)	13	0.06476	0.07002	-143.68(1.63)
14	0.07002	0.07522	-128.27(-0.79)	14	0.07002	0.07522	-144.34(-0.37)
15	0.07522	0.08036	-125.54(-0.93)	15	0.07522	0.08036	-141.22(-0.62)
16	0.08036	0.08544	-122.81(-0.41)	16	0.08036	0.08544	-138.45(-0.62)
17	0.08544	0.09046	-121.83(0.32)	17	0.08544	0.09046	-135.61(-0.50)
18	0.09046	0.09542	-120.21(0.12)	18	0.09046	0.09542	-133.03(-0.44)
19	0.09542	0.10032	-118.78(-0.41)	19	0.09542	0.10032	-130.59(-0.25)
20	0.10032	0.10516	-115.08(0.70)	20	0.10032	0.10516	-127.56(-0.71)
	T = 318.15 K (m_0 = 0.6043 $\mathrm{mol \cdot kg^{-1}}$)				T = 323.15 K (m_0 = 0.6043 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00298	0.00889	-205.56(0.17)	2	0.00300	0.00896	-223.62(0.00)
3	0.00889	0.01475	-201.49(0.14)	3	0.00896	0.01486	-218.48(0.17)
4	0.01475	0.02054	-196.36(-0.24)	4	0.01486	0.02070	-213.10(0.11)
5	0.02054	0.02628	-191.99(-0.01)	5	0.02070	0.02648	-209.03(-0.30)
6	0.02628	0.03195	-188.06(0.29)	6	0.02648	0.03220	-202.79(-0.17)
7	0.03195	0.03757	-185.53(-0.20)	7	0.03220	0.03786	-200.30(0.00)
8	0.03757	0.04313	-178.58(0.05)	8	0.03786	0.04346	-193.70(-0.32)
9	0.04313	0.04862	-176.61(-0.34)	9	0.04346	0.04899	-188.38(-0.32)
10	0.04862	0.05406	-174.22(-0.84)	10	0.04899	0.05447	-185.67(-0.04)
11	0.05406	0.05944	-170.02(-0.62)	11	0.05447	0.05989	-180.76(0.41)
12	0.05944	0.06476	-164.08(0.32)	12	0.05989	0.06525	-175.70(-0.28)
13	0.06476	0.07002	-161.51(-0.04)	13	0.06525	0.07055	-173.61(-0.17)
14	0.07002	0.07522	-157.66(-0.48)	14	0.07055	0.07579	-170.06(0.11)
15	0.07522	0.08036	-153.79(-0.62)	15	0.07579	0.08097	-166.48(-0.36)
16	0.08036	0.08544	-150.26(1.23)	16	0.08097	0.08609	-165.44(0.09)
17	0.08544	0.09046	-149.14(0.57)	17	0.08609	0.09115	-161.03(0.45)
18	0.09046	0.09542	-145.63(-0.09)	18	0.09115	0.09615	-157.00(0.21)
19	0.09542	0.10032	-142.75(0.44)	19	0.09615	0.10109	-152.80(0.42)
20	0.10032	0.10516	-143.28(-2.22)	20	0.10109	0.10597	-149.40(0.27)

[a] The atmospheric pressure was determined by a Fortin barometer (FM-52, Russell Scientific Instruments).

[b] The molality m is defined as moles of the solute per mass (kg) of solvent. m_0 is the molality of titrant solution in the injection syringe of ITC. $m_{N\text{-}1}$ and m_N are molalities of solutions in the measuring cell after the (N-1)th and the Nth titrations (N=2, 3, 4…).

[c] The values in parentheses are the evaluated relative deviations (δ) between experimental and

calculated values of $\Delta H(m_{N-1} \rightarrow m_N)$, denoted here respectively by $\Delta H(\text{exptl})$ and $\Delta H(\text{calcd})$, $\delta = 100\{[\Delta H(\text{exptl}) - \Delta H(\text{calcd})] / \Delta H(\text{exptl})\}$, in which the values of $\Delta H(\text{calcd})$ were calculated according to equation 4 in the text.

[d] The estimated standard uncertainties (u) are $u(T)$=0.01 K, $u(p)$ = 5 kPa, $u(m)$=0.0001 mol·kg^{-1}. The combined standard uncertainties of $\Delta H(\text{exptl})$, $u(\Delta H(\text{exptl}))$ = 0.05 J· mol^{-1}.

Table S3. Experimental dilution enthalpies of of L-serine and D-serine in pure water at T = (288.15 to 308.15) K and under p = 0.1 MPa [a,b,c,d]

N	m_N / mol · kg^{-1}	m_N / mol · kg^{-1}	$\Delta H(m_{N-1} \rightarrow m_N)$ / J · mol^{-1}	N	m_N / mol · kg^{-1}	m_N / mol · kg^{-1}	$\Delta H(m_{N-1} \rightarrow m_N)$ / J · mol^{-1}
			L-serine				
	T = 288.15 K (m_0 = 0.4482 mol· kg^{-1})				T = 293.15 K (m_0 = 0.4482 mol· kg^{-1})		
2	0.00223	0.00665	393.33(0.05)	2	0.00223	0.00665	333.02(-0.05)
3	0.00665	0.01102	386.26(-0.12)	3	0.00665	0.01102	327.07(-0.05)
4	0.01102	0.01535	375.17(0.09)	4	0.01102	0.01535	317.30(-0.06)
5	0.01535	0.01964	365.13(-0.07)	5	0.01535	0.01964	310.09(0.01)
6	0.01964	0.02388	358.31(-0.05)	6	0.01964	0.02388	302.59(-0.10)
7	0.02388	0.02808	351.97(-0.16)	7	0.02388	0.02808	297.68(0.04)
8	0.02808	0.03223	340.41(0.03)	8	0.02808	0.03223	287.96(-0.02)
9	0.03223	0.03634	335.19(-0.10)	9	0.03223	0.03634	283.62(-0.04)
10	0.03634	0.04041	328.91(0.07)	10	0.03634	0.04041	278.11(0.06)
11	0.04041	0.04443	319.90(-0.02)	11	0.04041	0.04443	271.27(-0.18)
12	0.04443	0.04840	313.12(-0.19)	12	0.04443	0.04840	265.53(-0.07)
13	0.04840	0.05233	307.11(-0.04)	13	0.04840	0.05233	259.38(0.00)
14	0.05233	0.05622	300.93(-0.17)	14	0.05233	0.05622	254.78(-0.14)
15	0.05622	0.06006	293.78(-0.07)	15	0.05622	0.06006	248.99(-0.11)
16	0.06006	0.06386	287.81(-0.01)	16	0.06006	0.06386	243.47(-0.14)
17	0.06386	0.06761	281.29(-0.16)	17	0.06386	0.06761	239.36(-0.11)
18	0.06761	0.07132	276.02(-0.05)	18	0.06761	0.07132	233.17(-0.12)
19	0.07132	0.07499	270.09(-0.11)	19	0.07132	0.07499	228.65(0.03)
20	0.07499	0.07861	263.98(-0.01)	20	0.07499	0.07861	223.60(-0.12)
	T = 298.15 K (m_0 = 0.4482 mol· kg^{-1})				T = 303.15 K (m_0 = 0.4530 mol· kg^{-1})		
2	0.00223	0.00665	283.90(-0.04)	2	0.00225	0.00672	239.72(-0.16)

3	0.00665	0.01102	279.17(-0.02)	3	0.00672	0.01114	234.52(0.13)
4	0.01102	0.01535	271.21(-0.05)	4	0.01114	0.01552	227.72(-0.17)
5	0.01535	0.01964	264.91(0.06)	5	0.01552	0.01985	222.38(0.03)
6	0.01964	0.02388	258.24(0.18)	6	0.01985	0.02414	216.77(-0.07)
7	0.02388	0.02808	253.47(0.22)	7	0.02414	0.02838	212.91(0.32)
8	0.02808	0.03223	245.63(0.31)	8	0.02838	0.03258	205.86(0.33)
9	0.03223	0.03634	241.66(0.22)	9	0.03258	0.03673	201.93(-0.09)
10	0.03634	0.04041	237.49(0.01)	10	0.03673	0.04083	200.56(0.49)
11	0.04041	0.04443	231.09(0.27)	11	0.04083	0.04490	193.94(0.19)
12	0.04443	0.04840	225.94(0.03)	12	0.04490	0.04891	189.85(0.08)
13	0.04840	0.05233	221.54(0.16)	13	0.04891	0.05289	186.48(0.11)
14	0.05233	0.05622	217.65(0.08)	14	0.05289	0.05682	182.50(0.27)
15	0.05622	0.06006	211.44(0.35)	15	0.05682	0.06070	178.43(0.08)
16	0.06006	0.06386	207.53(0.18)	16	0.06070	0.06454	174.68(0.08)
17	0.06386	0.06761	203.88(0.10)	17	0.06454	0.06833	172.03(-0.26)
18	0.06761	0.07132	198.85(0.10)	18	0.06833	0.07208	167.41(-0.07)
19	0.07132	0.07499	194.93(-0.09)	19	0.07208	0.07578	163.99(0.10)
20	0.07499	0.07861	189.79(0.33)	20	0.07578	0.07944	160.74(-0.01)

T = 308.15 K (m_0 = 0.4530 $\mathrm{mol \cdot kg^{-1}}$)				T = 313.15 K (m_0 = 0.4530 $\mathrm{mol \cdot kg^{-1}}$)			
2	0.00225	0.00672	199.24(0.16)	2	0.00225	0.00672	161.80(-0.60)
3	0.00672	0.01114	196.22(0.01)	3	0.00672	0.01114	155.45(0.26)
4	0.01114	0.01552	190.55(0.00)	4	0.01114	0.01552	152.72(-0.41)
5	0.01552	0.01985	185.44(0.21)	5	0.01552	0.01985	151.20(-0.73)
6	0.01985	0.02414	181.27(-0.04)	6	0.01985	0.02414	145.99(-0.54)
7	0.02414	0.02838	177.43(-0.15)	7	0.02414	0.02838	142.70(-0.30)
8	0.02838	0.03258	171.24(0.38)	8	0.02838	0.03258	136.91(-0.41)
9	0.03258	0.03673	168.52(0.03)	9	0.03258	0.03673	134.73(-0.59)
10	0.03673	0.04083	165.80(0.05)	10	0.03673	0.04083	130.75(-0.16)
11	0.04083	0.04490	161.38(-0.16)	11	0.04083	0.04490	128.67(-0.43)
12	0.04490	0.04891	157.74(0.14)	12	0.04490	0.04891	126.84(0.69)
13	0.04891	0.05289	154.56(-0.15)	13	0.04891	0.05289	124.15(0.66)
14	0.05289	0.05682	151.87(0.21)	14	0.05289	0.05682	121.57(0.44)
15	0.05682	0.06070	147.79(-0.26)	15	0.05682	0.06070	118.91(0.03)
16	0.06070	0.06454	144.26(-0.47)	16	0.06070	0.06454	116.59(0.20)
17	0.06454	0.06833	143.03(0.14)	17	0.06454	0.06833	114.24(0.41)
18	0.06833	0.07208	139.08(0.47)	18	0.06833	0.07208	111.85(0.67)

19	0.07208	0.07578	136.45(0.28)	19	0.07208	0.07578	109.55(0.37)
20	0.07578	0.07944	133.79(0.03)	20	0.07578	0.07944	106.17(0.28)
	T = 318.15 K (m_0 = 0.4545 $\mathrm{mol \cdot kg^{-1}}$)				T = 323.15 K (m_0 = 0.6413 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00226	0.00674	128.97(-0.78)	2	0.00319	0.00951	147.84(-0.35)
3	0.00674	0.01118	125.92(-0.29)	3	0.00951	0.01577	143.81(-0.55)
4	0.01118	0.01557	123.50(0.43)	4	0.01577	0.02197	139.21(-0.15)
5	0.01557	0.01991	120.35(1.22)	5	0.02197	0.02810	135.27(-0.53)
6	0.01991	0.02422	120.12(0.02)	6	0.02810	0.03417	133.03(-0.35)
7	0.02422	0.02847	116.16(0.51)	7	0.03417	0.04018	130.08(-0.30)
8	0.02847	0.03268	111.46(-1.09)	8	0.04018	0.04612	124.76(-0.29)
9	0.03268	0.03685	108.61(0.18)	9	0.04612	0.05200	122.34(-0.09)
10	0.03685	0.04097	107.91(-0.13)	10	0.05200	0.05781	121.05(-0.30)
11	0.04097	0.04505	105.46(-0.17)	11	0.05781	0.06356	117.18(-0.39)
12	0.04505	0.04908	102.90(-0.04)	12	0.06356	0.06925	114.65(-0.50)
13	0.04908	0.05306	100.53(0.00)	13	0.06925	0.07487	112.64(-0.49)
14	0.05306	0.05701	99.27(-0.14)	14	0.07487	0.08044	110.69(-0.57)
15	0.05701	0.06090	96.56(0.39)	15	0.08044	0.08593	106.97(-0.43)
16	0.06090	0.06475	94.50(0.51)	16	0.08593	0.09137	105.06(-0.62)
17	0.06475	0.06856	92.72(0.50)	17	0.09137	0.09673	103.21(-0.62)
18	0.06856	0.07232	91.18(-0.14)	18	0.09673	0.10204	100.35(-0.58)
19	0.07232	0.07603	88.64(0.67)	19	0.10204	0.10728	98.37(-0.49)
20	0.07603	0.07970	86.46(0.64)	20	0.10728	0.11246	96.66(-0.66)

D-serine

	T = 288.15 K (m_0 = 0.4515 $\mathrm{mol \cdot kg^{-1}}$)				T = 293.15 K (m_0 = 0.4513 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00224	0.00670	389.22(0.06)	2	0.00224	0.00669	330.20(-0.20)
3	0.00670	0.01110	380.54(-0.06)	3	0.00669	0.01110	322.59(-0.30)
4	0.01110	0.01547	369.48(0.00)	4	0.01110	0.01546	313.41(-0.24)
5	0.01547	0.01978	360.45(0.00)	5	0.01546	0.01977	305.40(-0.27)
6	0.01978	0.02406	352.82(-0.19)	6	0.01977	0.02404	298.55(0.09)
7	0.02406	0.02828	346.07(0.00)	7	0.02404	0.02827	293.23(-0.03)
8	0.02828	0.03247	334.27(-0.05)	8	0.02827	0.03245	283.28(0.06)
9	0.03247	0.03661	329.01(0.01)	9	0.03245	0.03659	278.98(0.03)
10	0.03661	0.04070	323.39(0.09)	10	0.03659	0.04068	274.30(-0.02)
11	0.04070	0.04475	314.96(-0.02)	11	0.04068	0.04473	266.78(-0.03)
12	0.04475	0.04875	308.18(0.00)	12	0.04473	0.04873	261.60(-0.08)

13	0.04875	0.05271	301.77(0.06)	13	0.04873	0.05269	255.64(0.00)
14	0.05271	0.05663	296.04(-0.07)	14	0.05269	0.05660	251.27(-0.07)
15	0.05663	0.06050	288.73(-0.01)	15	0.05660	0.06047	244.76(-0.14)
16	0.06050	0.06432	282.78(0.02)	16	0.06047	0.06429	239.71(-0.05)
17	0.06432	0.06810	277.13(-0.01)	17	0.06429	0.06807	235.29(-0.16)
18	0.06810	0.07184	271.54(0.01)	18	0.06807	0.07181	230.40(0.17)
19	0.07184	0.07553	266.40(0.04)	19	0.07181	0.07549	225.40(0.02)
20	0.07553	0.07918	259.87(-0.07)	20	0.07549	0.07914	219.88(-0.07)
	T = 298.15 K (m_0 = 0.4541 $\mathrm{mol\cdot kg^{-1}}$)				T = 303.15 K (m_0 = 0.4456 $\mathrm{mol\cdot kg^{-1}}$)		
2	0.00226	0.00673	284.34(-0.07)	2	0.00221	0.00661	236.93(-0.11)
3	0.00673	0.01117	277.57(-0.30)	3	0.00661	0.01096	231.10(-0.08)
4	0.01117	0.01556	269.45(-0.17)	4	0.01096	0.01526	224.91(-0.05)
5	0.01556	0.01990	263.06(-0.50)	5	0.01526	0.01953	218.52(-0.18)
6	0.01990	0.02420	256.67(-0.15)	6	0.01953	0.02374	213.25(0.06)
7	0.02420	0.02845	252.72(-0.37)	7	0.02374	0.02792	210.09(-0.24)
8	0.02845	0.03266	243.82(-0.81)	8	0.02792	0.03205	202.44(0.12)
9	0.03266	0.03682	240.71(-0.26)	9	0.03205	0.03613	198.79(0.07)
10	0.03682	0.04094	235.96(-0.75)	10	0.03613	0.04017	195.61(-0.69)
11	0.04094	0.04501	230.17(-0.39)	11	0.04017	0.04417	189.63(0.60)
12	0.04501	0.04904	225.36(-0.38)	12	0.04417	0.04812	186.17(0.49)
13	0.04904	0.05302	220.67(-0.59)	13	0.04812	0.05203	183.46(0.14)
14	0.05302	0.05696	216.46(-0.45)	14	0.05203	0.05589	180.10(-0.16)
15	0.05696	0.06085	211.28(-0.59)	15	0.05589	0.05971	175.87(-0.10)
16	0.06085	0.06470	207.17(-0.68)	16	0.05971	0.06349	172.08(-0.08)
17	0.06470	0.06850	202.89(-0.60)	17	0.06349	0.06722	169.13(-0.33)
18	0.06850	0.07226	198.39(-0.67)	18	0.06722	0.07091	165.02(0.01)
19	0.07226	0.07597	194.03(-0.53)	19	0.07091	0.07455	161.72(-0.32)
20	0.07597	0.07964	190.03(-0.37)	20	0.07455	0.07815	158.54(-0.10)
	T = 308.15 K (m_0 = 0.4534 $\mathrm{mol\cdot kg^{-1}}$)				T = 313.15 K (m_0 = 0.4534 $\mathrm{mol\cdot kg^{-1}}$)		
2	0.00225	0.00672	198.79(-0.34)	2	0.00225	0.00672	161.42(-0.07)
3	0.00672	0.01115	192.95(-0.22)	3	0.00672	0.01115	156.88(-0.11)
4	0.01115	0.01553	187.18(-0.38)	4	0.01115	0.01553	151.69(0.14)
5	0.01553	0.01987	182.62(-0.63)	5	0.01553	0.01987	148.85(0.87)
6	0.01987	0.02416	176.90(-0.27)	6	0.01987	0.02416	143.18(1.69)
7	0.02416	0.02840	174.31(0.44)	7	0.02416	0.02840	141.77(0.62)

8	0.02840	0.03260	167.60(0.58)	8	0.02840	0.03260	137.41(-0.64)
9	0.03260	0.03676	165.28(0.26)	9	0.03260	0.03676	135.11(-0.56)
10	0.03676	0.04087	163.73(0.23)	10	0.03676	0.04087	133.10(-0.22)
11	0.04087	0.04494	159.03(0.03)	11	0.04087	0.04494	130.31(0.67)
12	0.04494	0.04896	155.59(0.16)	12	0.04494	0.04896	127.19(0.76)
13	0.04896	0.05294	152.34(0.32)	13	0.04896	0.05294	125.31(0.81)
14	0.05294	0.05687	149.23(0.37)	14	0.05294	0.05687	121.86(0.44)
15	0.05687	0.06075	145.34(0.28)	15	0.05687	0.06075	119.21(0.64)
16	0.06075	0.06459	142.23(-0.03)	16	0.06075	0.06459	116.76(0.67)
17	0.06459	0.06839	139.47(0.09)	17	0.06459	0.06839	114.96(0.82)
18	0.06839	0.07214	136.16(0.17)	18	0.06839	0.07214	111.73(0.37)
19	0.07214	0.07585	133.14(0.03)	19	0.07214	0.07585	109.70(0.56)
20	0.07585	0.07951	130.19(0.33)	20	0.07585	0.07951	106.99(0.71)
	T = 318.15 K (m_0 = 0.4818 $\mathrm{mol \cdot kg^{-1}}$)				T = 323.15 K (m_0 = 0.6450 $\mathrm{mol \cdot kg^{-1}}$)		
2	0.00239	0.00714	135.35(-0.98)	2	0.00320	0.00956	131.48(-0.18)
3	0.00714	0.01185	131.47(-1.29)	3	0.00956	0.01586	126.55(0.02)
4	0.01185	0.01650	126.92(-1.10)	4	0.01586	0.02209	122.41(0.11)
5	0.01650	0.02111	123.31(-1.22)	5	0.02209	0.02826	119.25(0.17)
6	0.02111	0.02567	121.36(-1.09)	6	0.02826	0.03436	117.14(0.27)
7	0.02567	0.03018	117.93(-0.71)	7	0.03436	0.04040	114.59(-0.08)
8	0.03018	0.03464	114.56(-1.21)	8	0.04040	0.04638	110.55(0.03)
9	0.03464	0.03906	111.12(0.17)	9	0.04638	0.05229	108.04(-0.19)
10	0.03906	0.04343	110.39(-1.40)	10	0.05229	0.05814	106.40(0.05)
11	0.04343	0.04775	107.65(-0.75)	11	0.05814	0.06392	103.72(0.20)
12	0.04775	0.05202	105.58(-0.72)	12	0.06392	0.06964	100.45(-0.37)
13	0.05202	0.05625	103.77(-0.40)	13	0.06964	0.07530	98.69(-0.45)
14	0.05625	0.06042	101.26(-1.35)	14	0.07530	0.08089	96.96(-0.44)
15	0.06042	0.06455	99.11(-1.03)	15	0.08089	0.08642	94.22(0.01)
16	0.06455	0.06863	97.63(0.15)	16	0.08642	0.09188	92.48(-0.15)
17	0.06863	0.07267	95.37(-1.07)	17	0.09188	0.09728	90.68(-0.32)
18	0.07267	0.07665	92.64(-0.92)	18	0.09728	0.10262	88.35(-0.30)
19	0.07665	0.08059	90.50(-0.87)	19	0.10262	0.10789	86.52(0.23)
20	0.08059	0.08448	89.04(-0.66)	20	0.10789	0.11310	85.68(-1.72)

[a] The atmospheric pressure was determined by a Fortin barometer (FM-52, Russell Scientific Instruments).

[b] The molality m is defined as moles of the solute per mass (kg) of solvent. m_0 is the molality of

titrant solution in the injection syringe of ITC. $m_{N\text{-}1}$ and m_N are molalities of solutions in the measuring cell after the (N-1)th and the Nth titrations (N=2, 3, 4…).

[c] The values in parentheses are the evaluated relative deviations (δ) between experimental and calculated values of $\Delta H(m_{N-1} \rightarrow m_N)$, denoted here respectively by $\Delta H(\text{exptl})$ and $\Delta H(\text{calcd})$, $\delta = 100\{[\Delta H(\text{exptl}) - \Delta H(\text{calcd})]/\Delta H(\text{exptl})\}$, in which the values of $\Delta H(\text{calcd})$ were calculated according to equation 4 in the text.

[d] The estimated standard uncertainties (u) are $u(T)$=0.01 K, $u(p)$ = 5 kPa, $u(m)$=0.0001 mol·kg^{-1}. The combined standard uncertainties of $\Delta H(\text{exptl})$, $u(\Delta H(\text{exptl}))$ = 0.05 J· mol^{-1}.

Table S4. Comparison of experimental results of h_{LL} and h_{DD} of the six α-amino acid enantiomers with literature data

	T/K	h_{LL} / J · kg · mol^{-2}			h_{DD} / J · kg · mol^{-2}		
		L-proline	L-alanine	L-serine	D-proline	D-alanine	D-serine
This work	298.15	285 (±1)	173 (±1)	-569 (±1)	244 (±3)	167 (±1)	-552 (±2)
References	298.15	409[1]	216[2]	-709[3]	409[1]	217[2]	—
	298.15	377[4]	206[3]	-740.32[5]	—	—	—

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