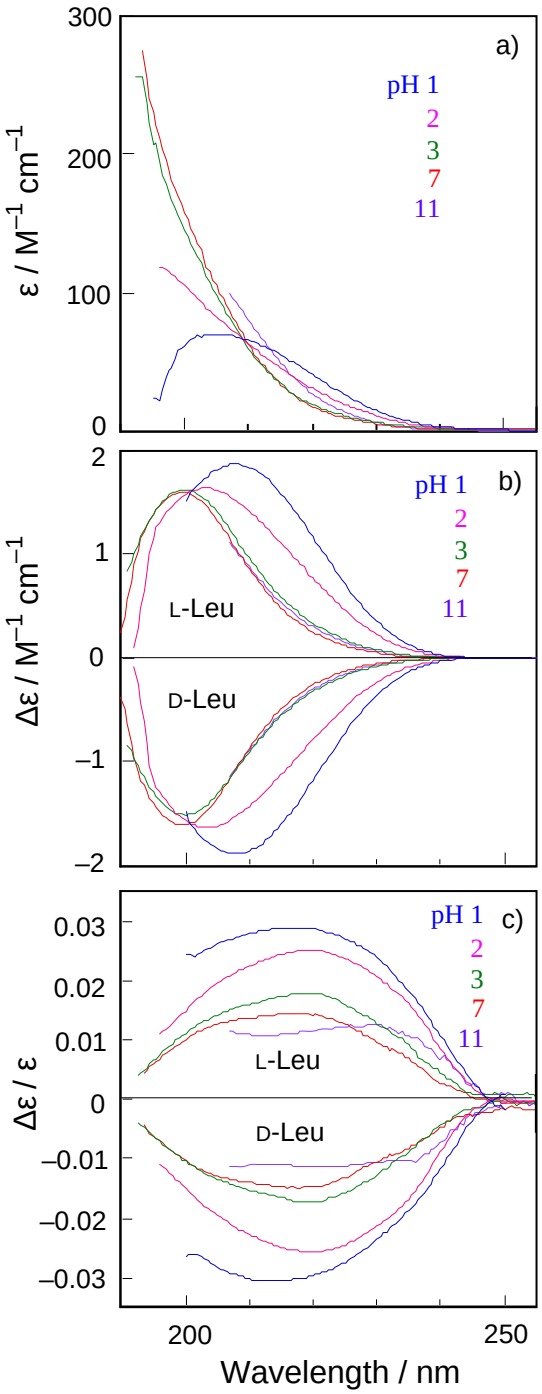
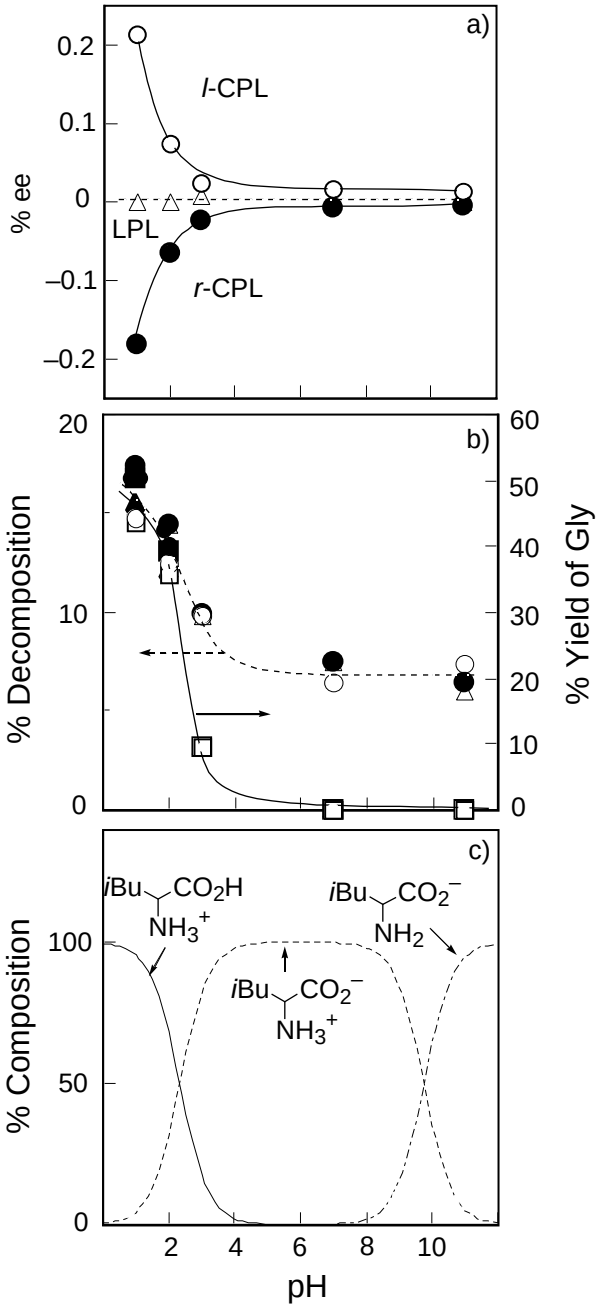
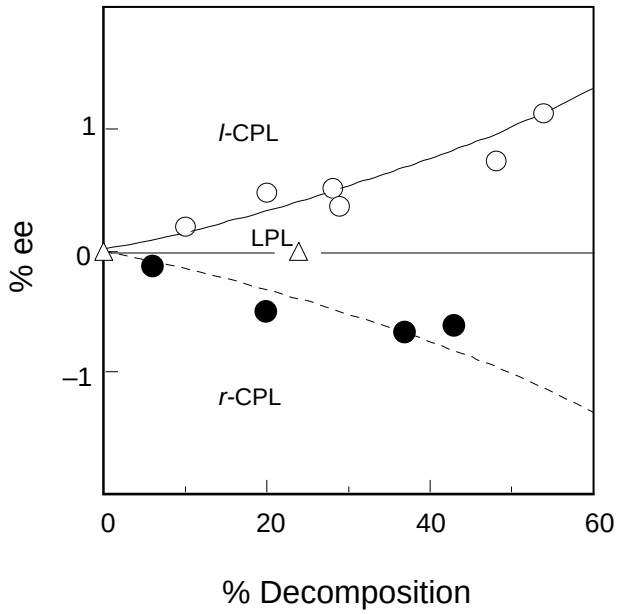
Supporting Information



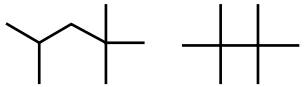
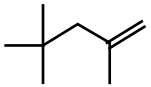
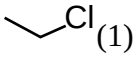
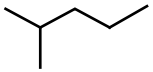
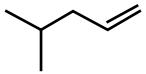
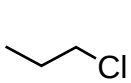
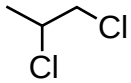
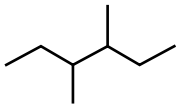
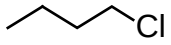
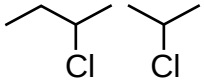
Supporting Information 1. Chiroptical Properties of D- and L-Leu at Various pHs: (a) UV spectrum of D- and L-Leu, (b) CD Spectrum of D- and L-Leu, (c) *g* Factor of D- and L-Leu.



Supporting Information 2. (a) pH Dependence of the % ee of Leu Irradiated with CPL at 215nm: (○) *l*-CPSR, (●) *r*-CPSR, (△) LPSR. (b) pH Dependence of Decomposition of Leu and Yield of Gly. Decomposition of Leu: (○) *l*-CPSR, (●) *r*-CPSR, (△) LPSR. Yield of Gly**:** (□) *l*-CPL, (■) *r*-CPL, (▲) LPL. (c) Relationship between Solution pH and % Composition of Each Ionic Species of Leu.



Supporting Information 3. The dependence of the % ee as a function of % decomposition upon irradiation of Leu at pH 1 with *l*- and *r*-CPL.

amino acid	% conv.	products (ratio)		
		alkane	alkene	alkyl chloride
Gly	3.9	0	0	0
Ala	14.5	0	0	
Leu	17.4	 (1) (2.3)	 (1.7)  (< 0.1)	 (1)  (1)
Val	23.6	 (1.3)	 (4.3)	 (7.7)  (8.7)  (1)
Ile	22.8	 (4)	 (< 0.3)	 (2.7)  (6.7) (1)

Supporting Information 4. Results of Product Analysis (GC-MS) of Aliphatic Amino Acids Irradiated with LPL at pH 1 (Doses: 60.0–60.8 mA h).