

Supplementary Information

Natural amino acids/H₂O as metal- and halide-free catalyst system for the synthesis of propylene carbonate from propylene oxide and CO₂ under moderate conditions

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Table S1. Coupling of PO with CO₂ catalyzed by various α -amino acids

| Entry | Amino acids | Yield (%) | |
|-------|-----------------|------------------------|------------------------|
| | | ^a Reference | ^b Reference |
| 1 | glycine | 86 | 20 |
| 2 | L-alanine | 50 | 19 |
| 3 | L-leucine | 100 | 63 |
| 4 | L-isoleucine | 95 | 62 |
| 5 | L-valine | 94 | 40 |
| 6 | L-proline | 100 | 51 |
| 7 | L-phenylalanine | 100 | 67 |
| 8 | L-tryptophan | 82 | 27 |
| 9 | L-methionine | 100 | 45 |
| 10 | L-asparagine | 88 | 7 |
| 11 | L-glutamine | 73 | 5 |
| 12 | L-cysteine | 89 | 10 |
| 13 | L-serine | 94 | 14 |
| 14 | L-threonine | 41 | 36 |
| 15 | L-tyrosine | 82 | 44 |
| 16 | L-aspartic acid | 67 | 18 |
| 17 | L-glutamic acid | 29 | 15 |
| 18 | L-arginine | 88 | 44 |
| 19 | L-histidine | 100 | 100 |
| 20 | L-lysine | 100 | 78 |

Reaction conditions: PO = 20 mmol, temperature = 130 °C, time = 48 h ^acatalyst amount = 0.6 mol%, CH₂Cl₂ = 1 mL, CO₂ pressure = 6 MPa ^bcatalyst amount = 0.8 mol%, CO₂ pressure = 8 MPa