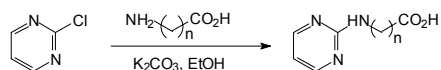
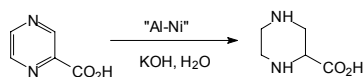


Supplementary Scheme 1 Graphical scheme of the methods of synthesis of the novel amino acids

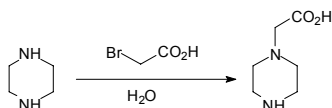
a)



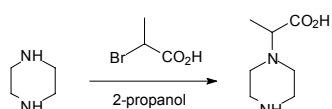
b)



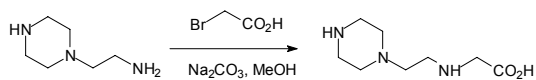
c)



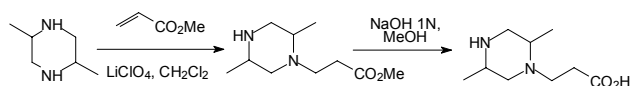
d)



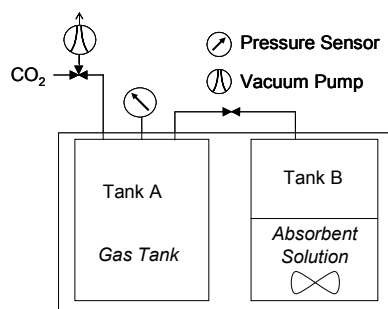
e)



f)

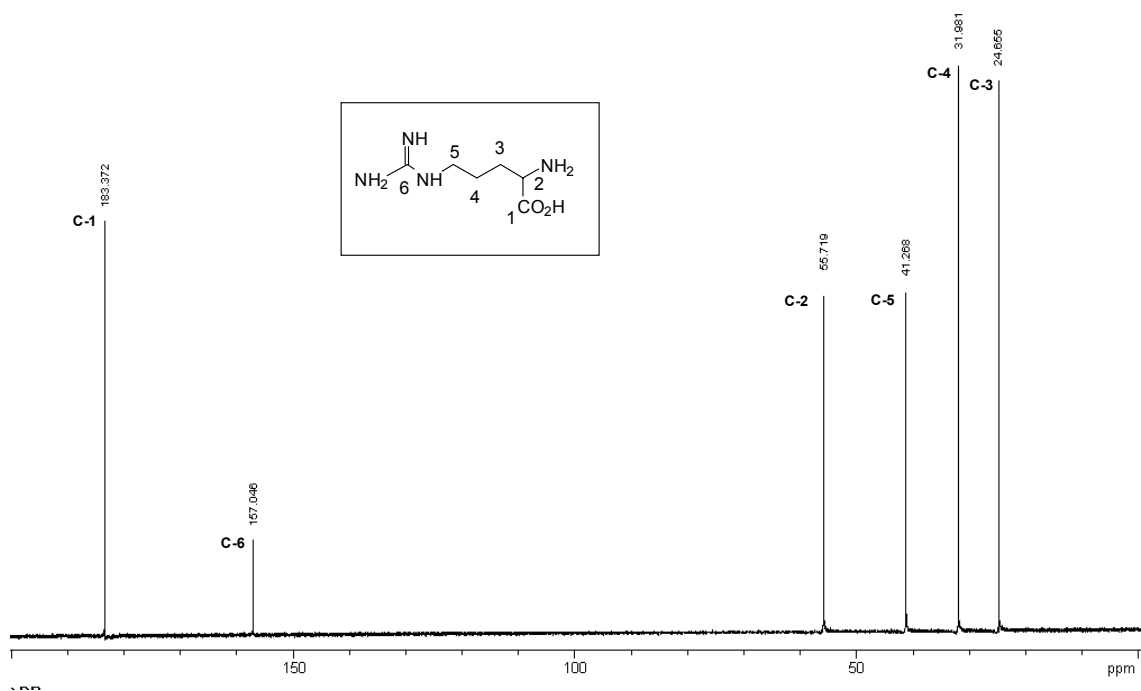


Supplementary Figure 1 Absorption equilibrium set-up sketch

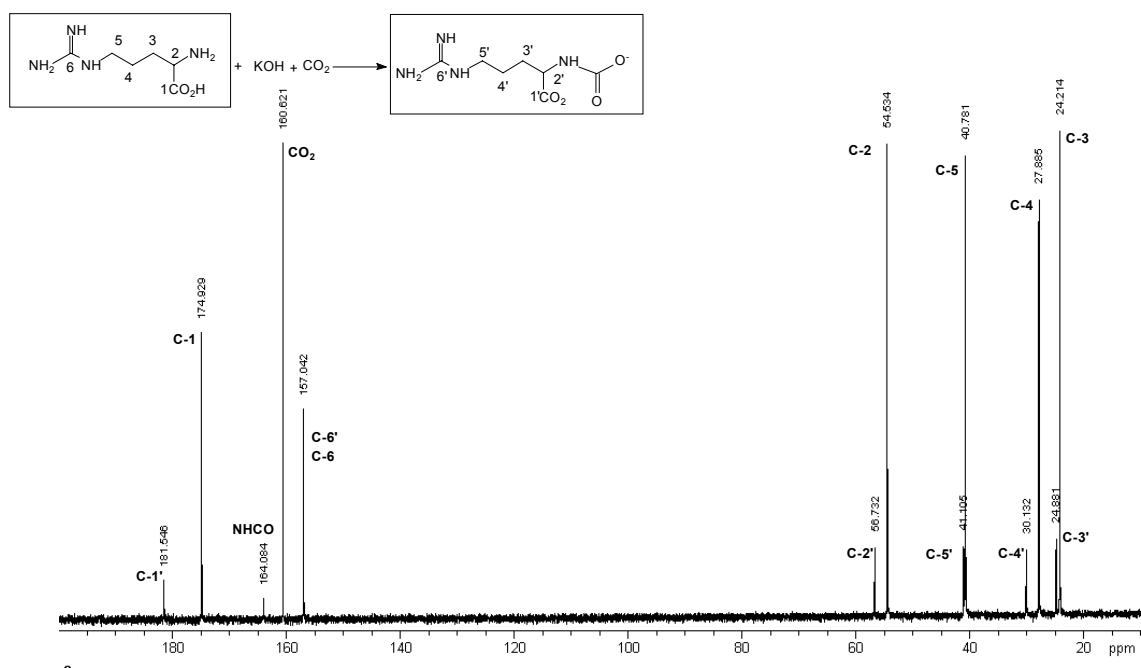


Supplementary Figure 2 ^{13}C -NMR spectrum (75MHz) of LA-arginine (a) and ^{13}C -NMR spectrum (75MHz) of CO_2 -treated LA-arginine (b) and KOH (1eq), in D_2O at 20°C .

a)



b)



Supplementary Table 1 DFT Electronic energy values (Kcal/mol) of complexes determined by B3LYP/6-31G* with BSSE correction

	ΔE_{elc} -amino acid	ΔE_{elc} -amino acid anion
Glycine	-3.85	-8.15
Proline	-4.23	-9.46
BAPA	-3.94	-6.20
GABA	-4.68	-5.50
Taurine	-2.46	-4.02
Serine	-2.79 NH ₂	-2.30 NH ₂
	-2.53 OH	-4.78 OH
Threonine	-2.58 NH ₂	-2.46 NH ₂
	-2.20 OH	-4.17 OH
Ornithine	-3.17 NH ₂ (1)	-0.07 NH ₂ (1)
	-4.00 NH ₂ (2)	-10.95 NH ₂ (2)
Histidine	-0.26 NH ₂ (1)	-1.88 NH ₂ (1)
	-2.71 NH (2)	-5.65 NH (2)
Arginine	-3.93 NH ₂ (1)	-12.69 NH ₂ (1)
	-1.87 NH (2)	
	-4.72 NH (3)	
	-3.32 NH ₂ (4)	
MEA	-3.74 NH ₂	
	-3.93 OH	
NH ₃ ⁺	-3.05	