

Intrinsic pK_a Values for Ionizable Groups Found in Proteins

Group	Observed pK _a
α-Amino	6.8 – 8.0
α-Carboxyl	3.5 – 4.3
β-Carboxyl (Asp)	3.9 – 4.0
γ-Carboxyl (Glu)	4.3 – 4.5
δ-Guanido (Arg)	12.0
ε-Amino (Lys)	10.4 – 11.1
Imadazol (His)	6.0 – 7.0
Thiol (Cys)	9.0 – 9.5
Phenolic hydroxyl (Tyr)	10.0 – 10.3