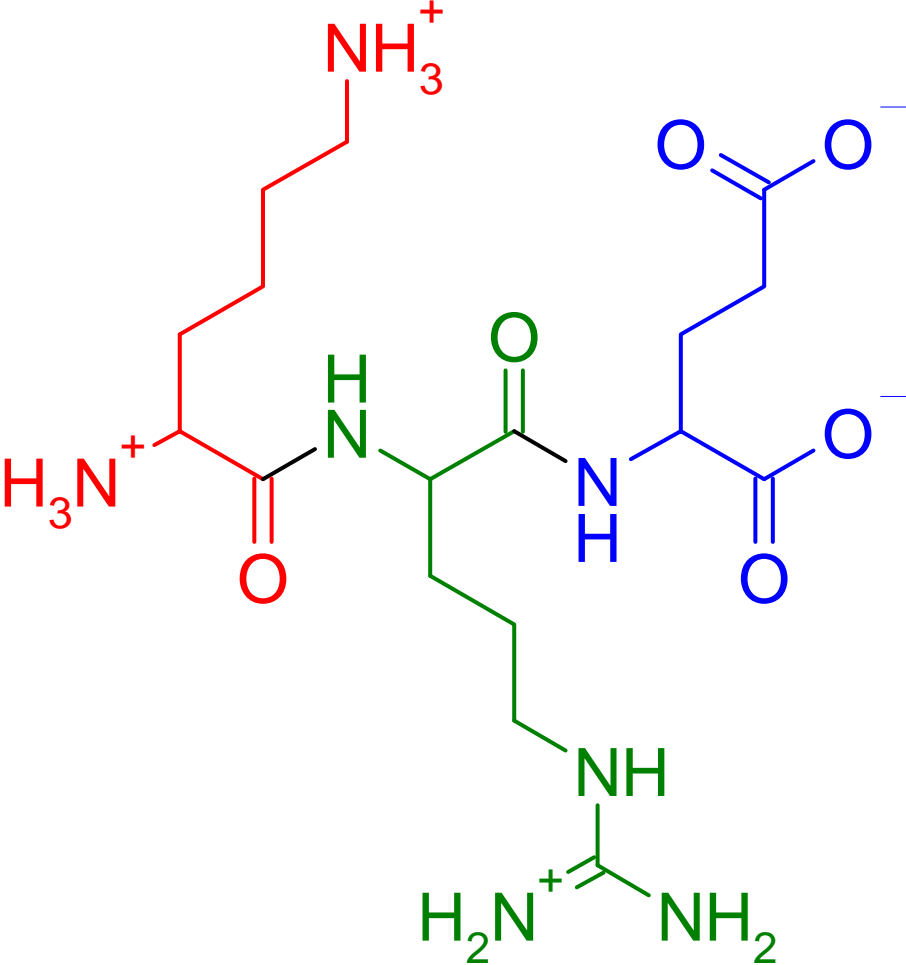


Lys

Arg

Glu



Lys

Arg

Glu

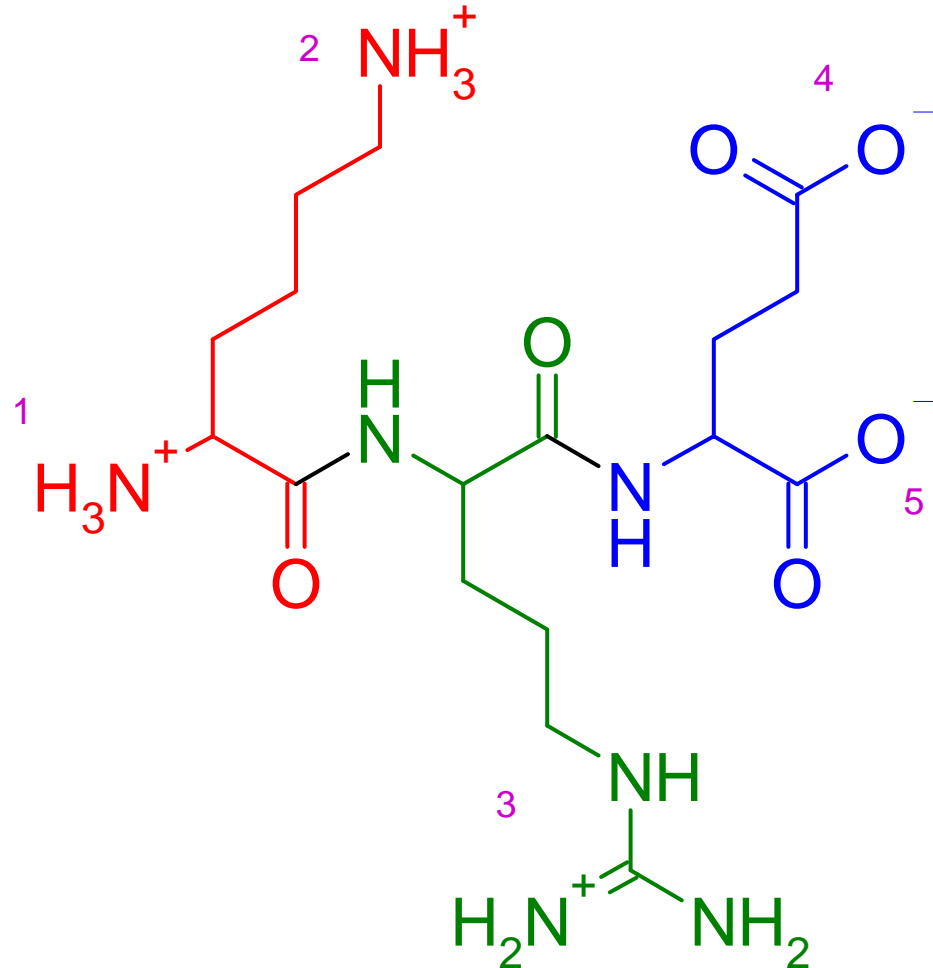
$$pK_{a1} = 9.2$$

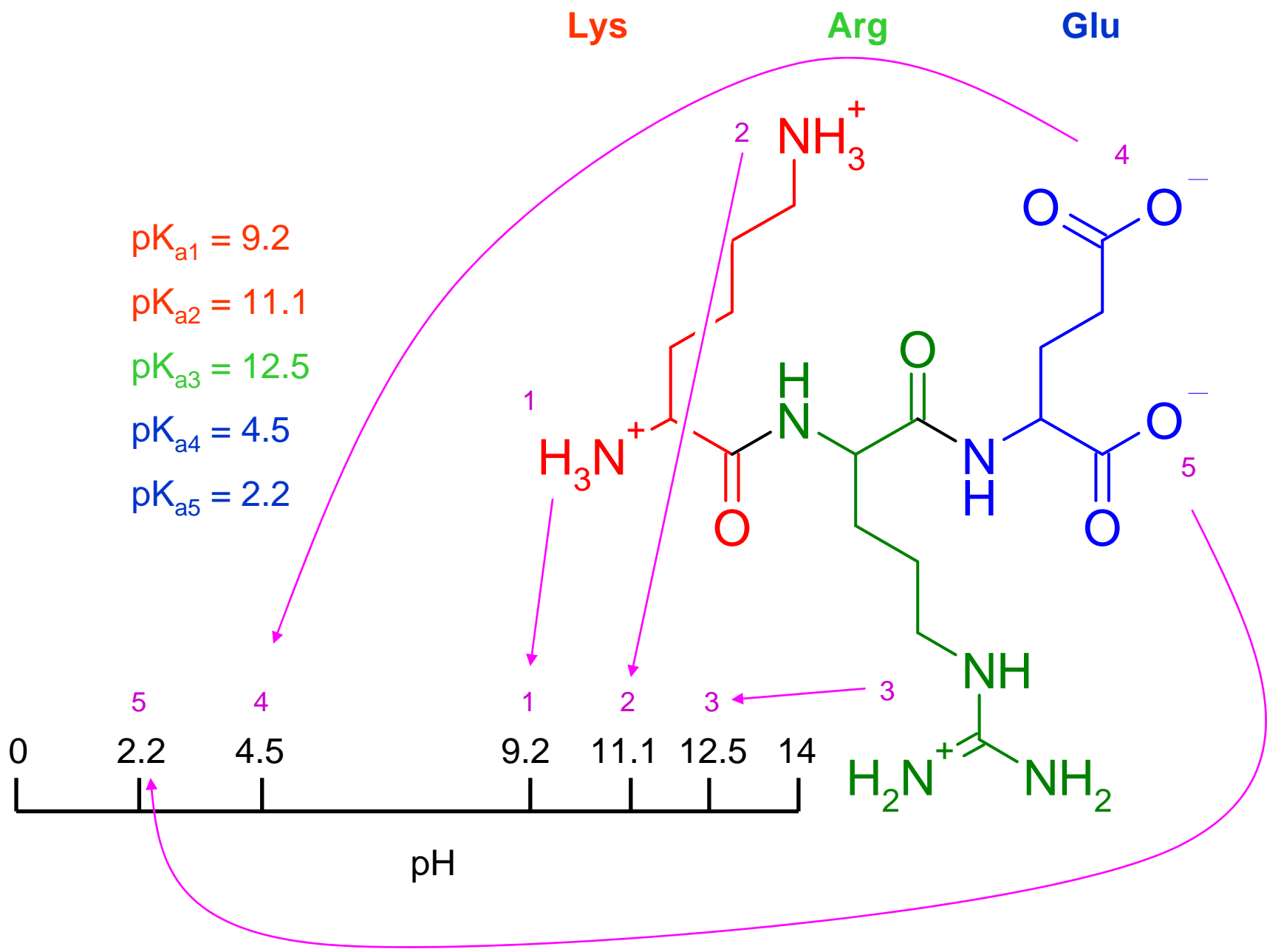
$$pK_{a2} = 11.1$$

$$pK_{a3} = 12.5$$

$$pK_{a4} = 4.5$$

$$pK_{a5} = 2.2$$



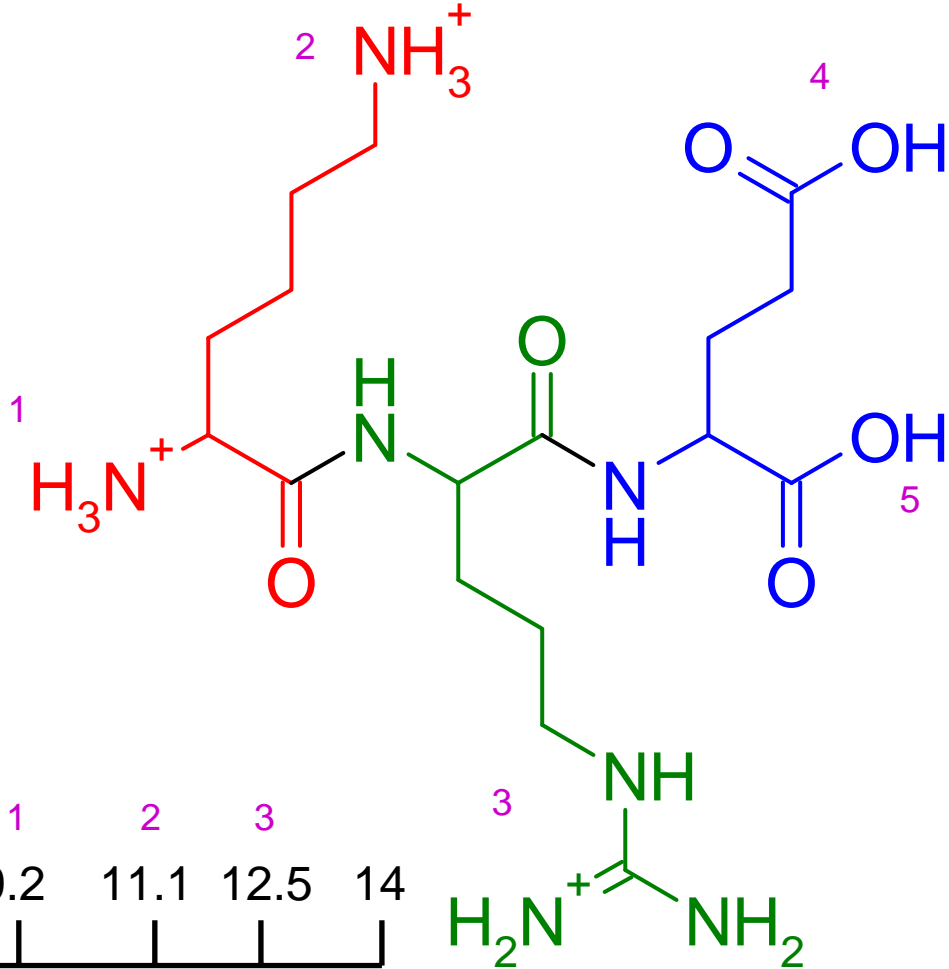


Lys

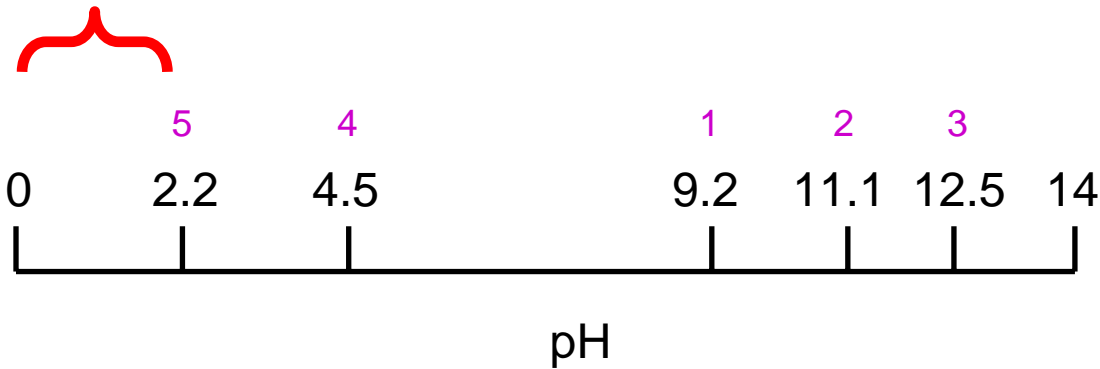
Arg

Glu

1	+
2	+
3	+
4	0
5	0



pH = ~1



Lys

Arg

Glu

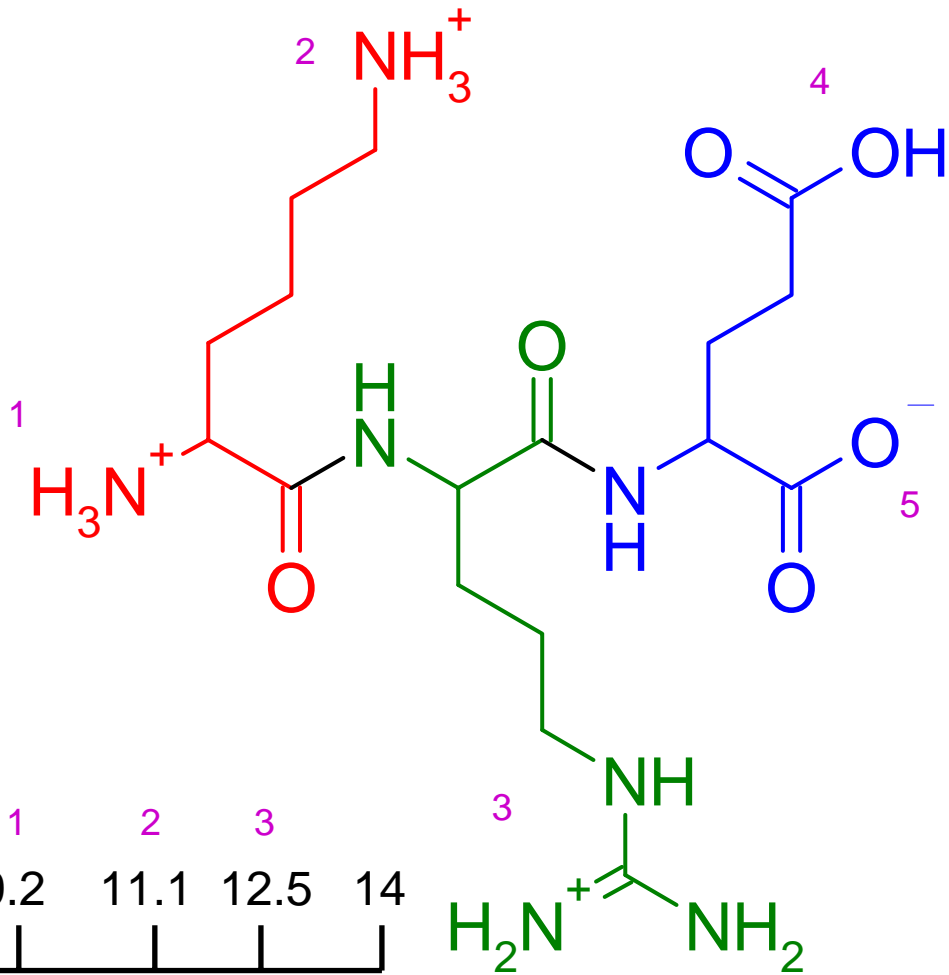
- 1 +
- 2 +
- 3 +
- 4 0
- 5 -

pH = ~3

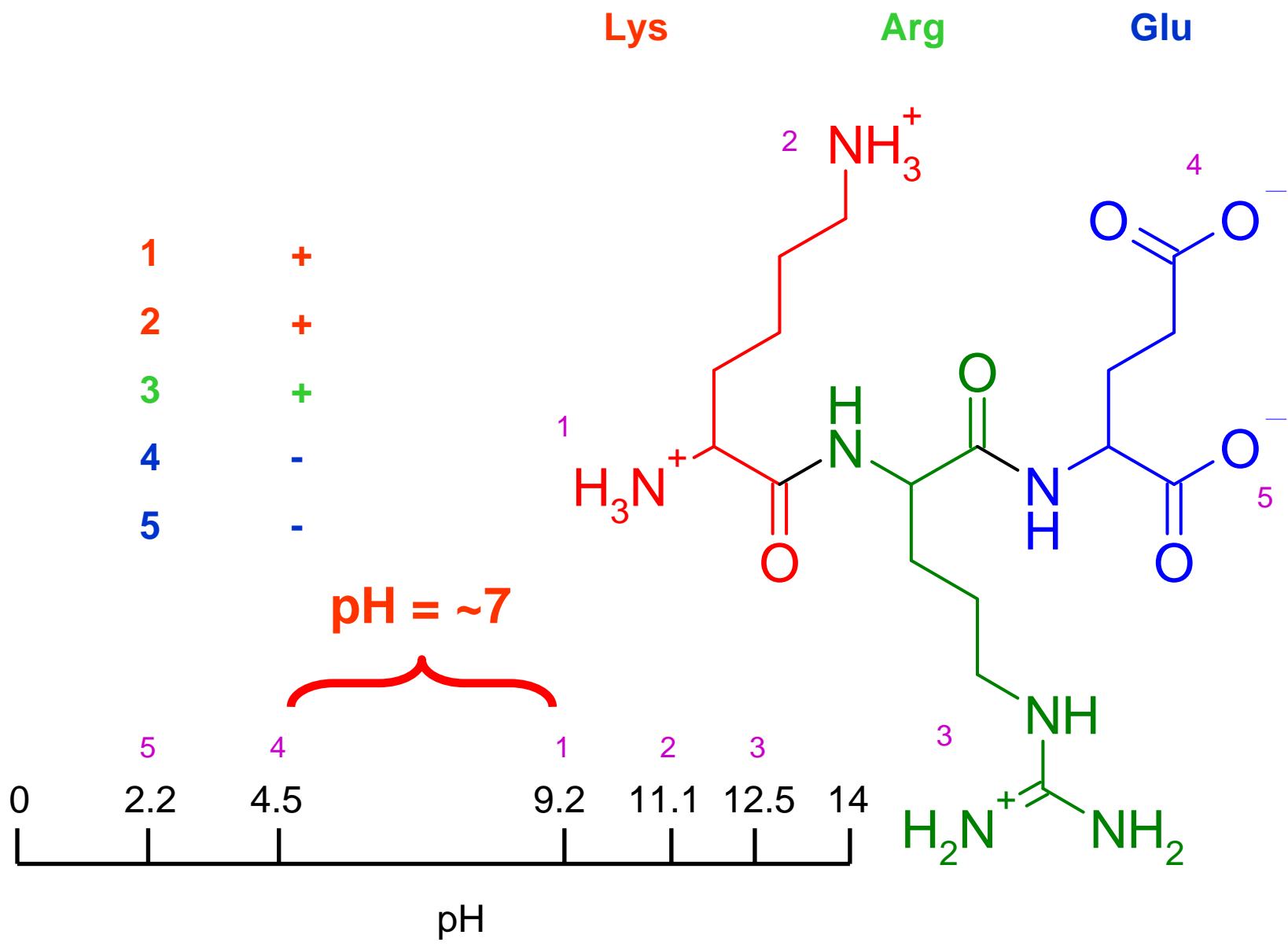


5 4
2.2 4.5

1 2 3
9.2 11.1 12.5 14



pH



5

4

1

2

3

3

0

2.2

4.5

9.2

11.1

12.5

14

H₂N⁺

NH₂

NH₃⁺

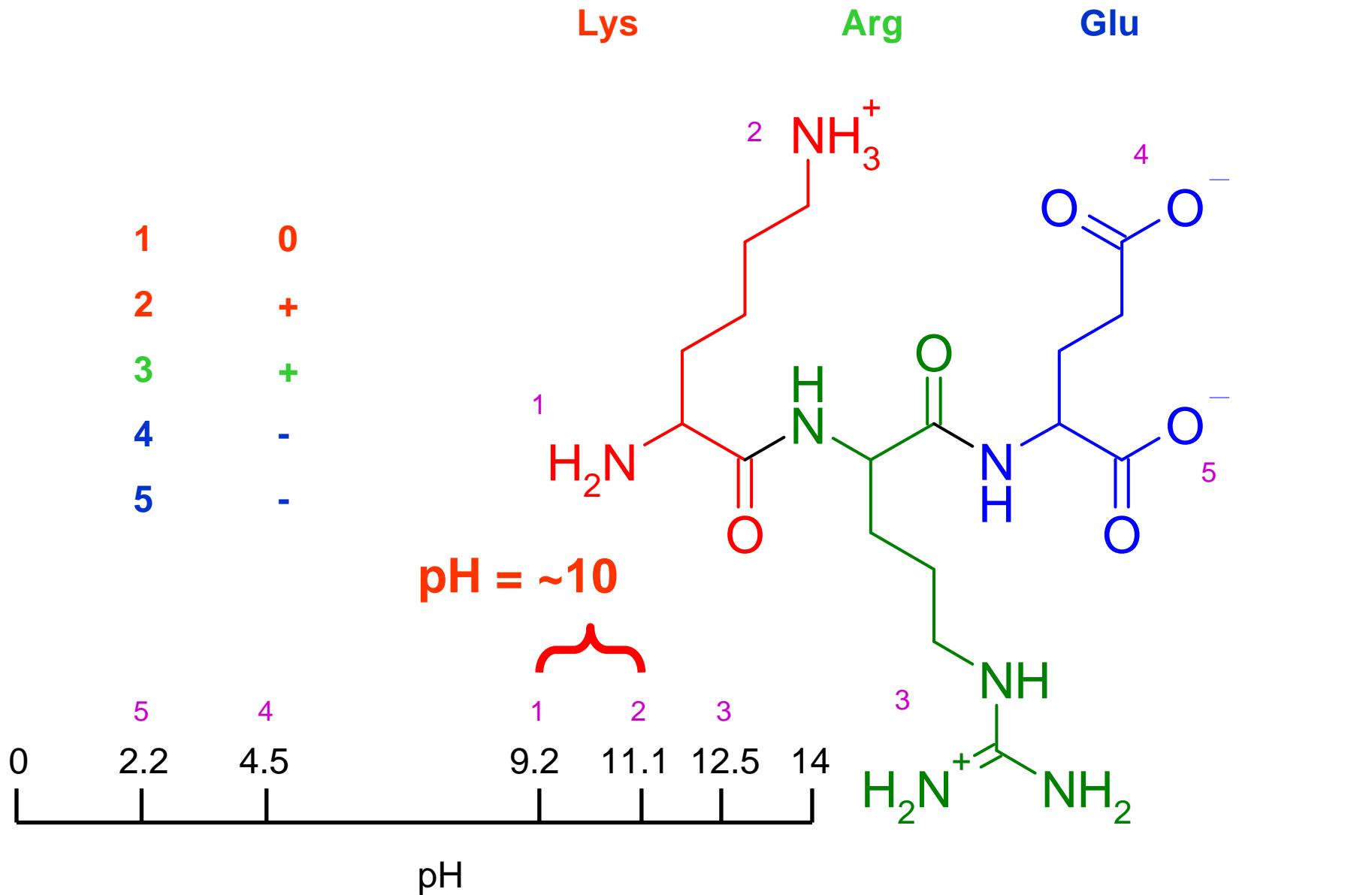
H₃N⁺

O⁻

O⁻

H₂N⁺

NH₂



Nulový celkový náboj !

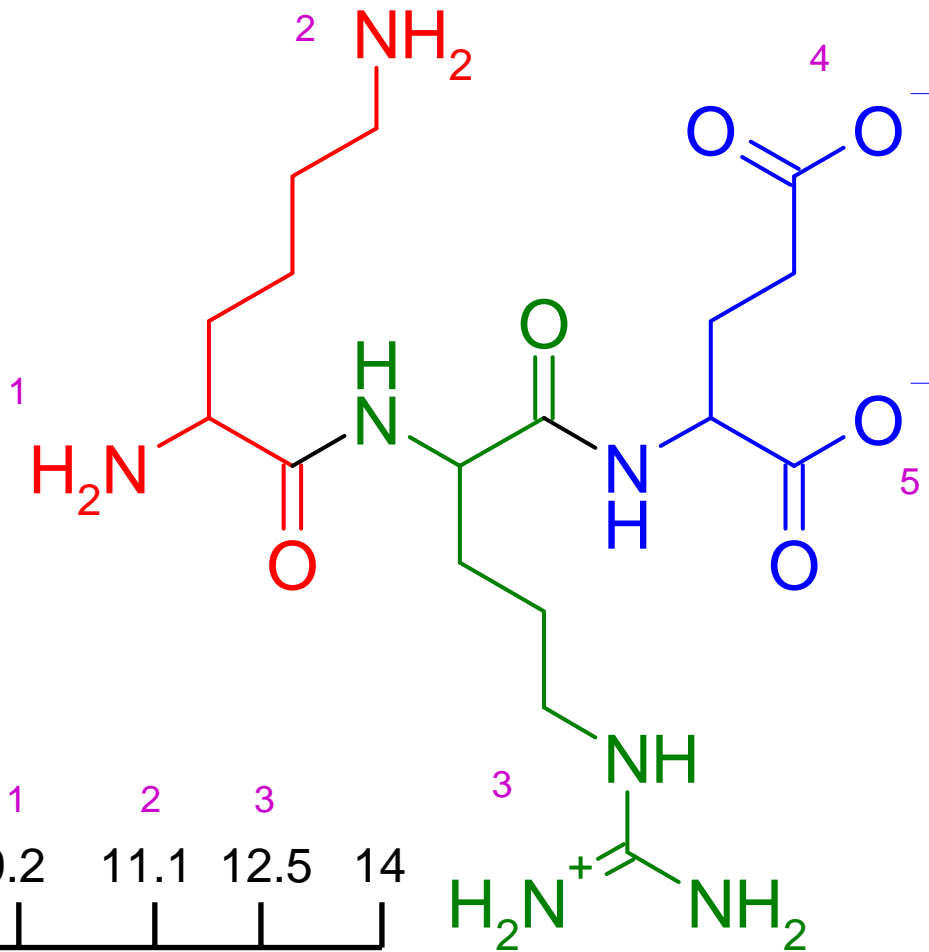
Isoelektrický bod: $pI = \frac{1}{2} (11.1 + 9.2) = 10.2$

Lys

Arg

Glu

1 0
2 0
3 +
4 -
5 -



pH

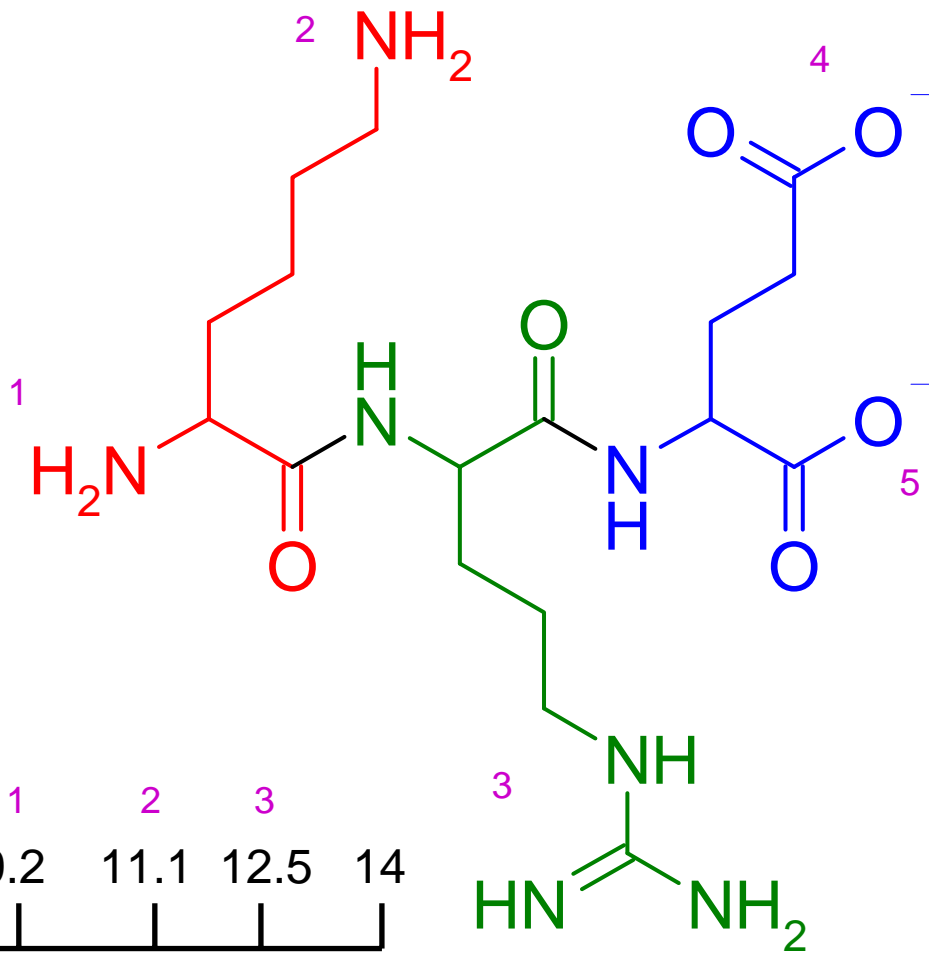
pH = ~12

Lys

Arg

Glu

1 0
2 0
3 0
4 -
5 -



0 2.2 4.5 9.2 11.1 12.5 14

pH

pH = ~13