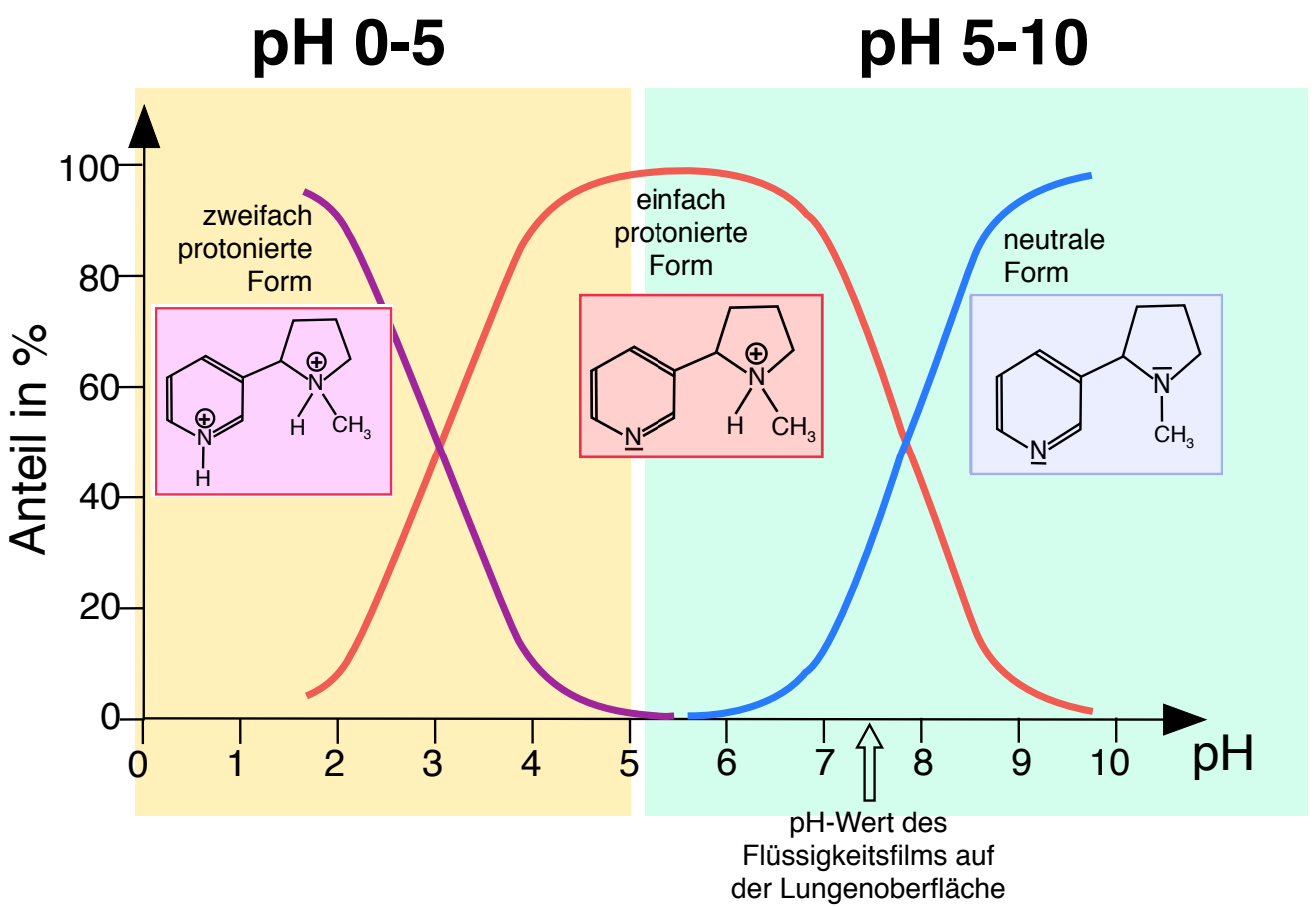


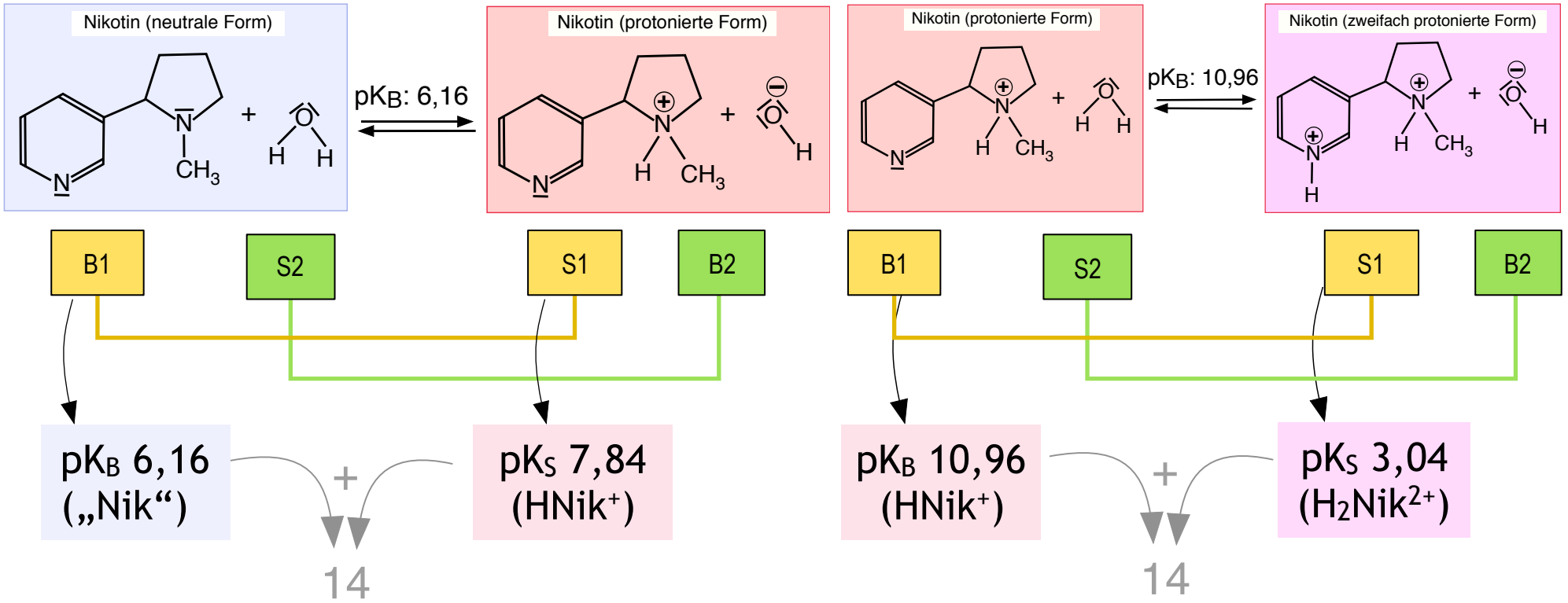
$$H_2Nik^{2+} + H_2O \rightleftharpoons HNik^{+} + H_3O^{+}$$

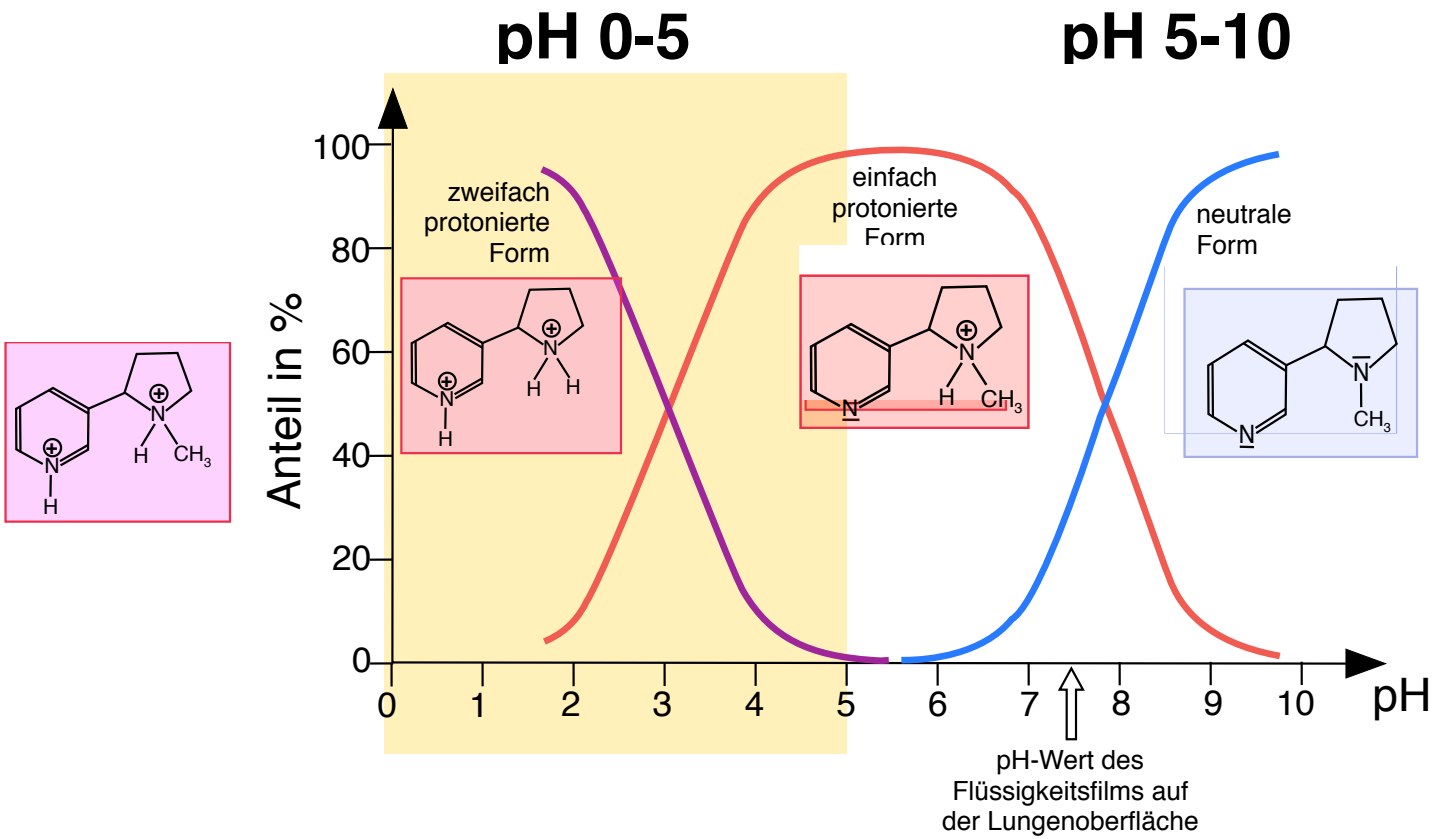
$$HNik^{+} + H_2O \rightleftharpoons Nik + H_3O^{+}$$

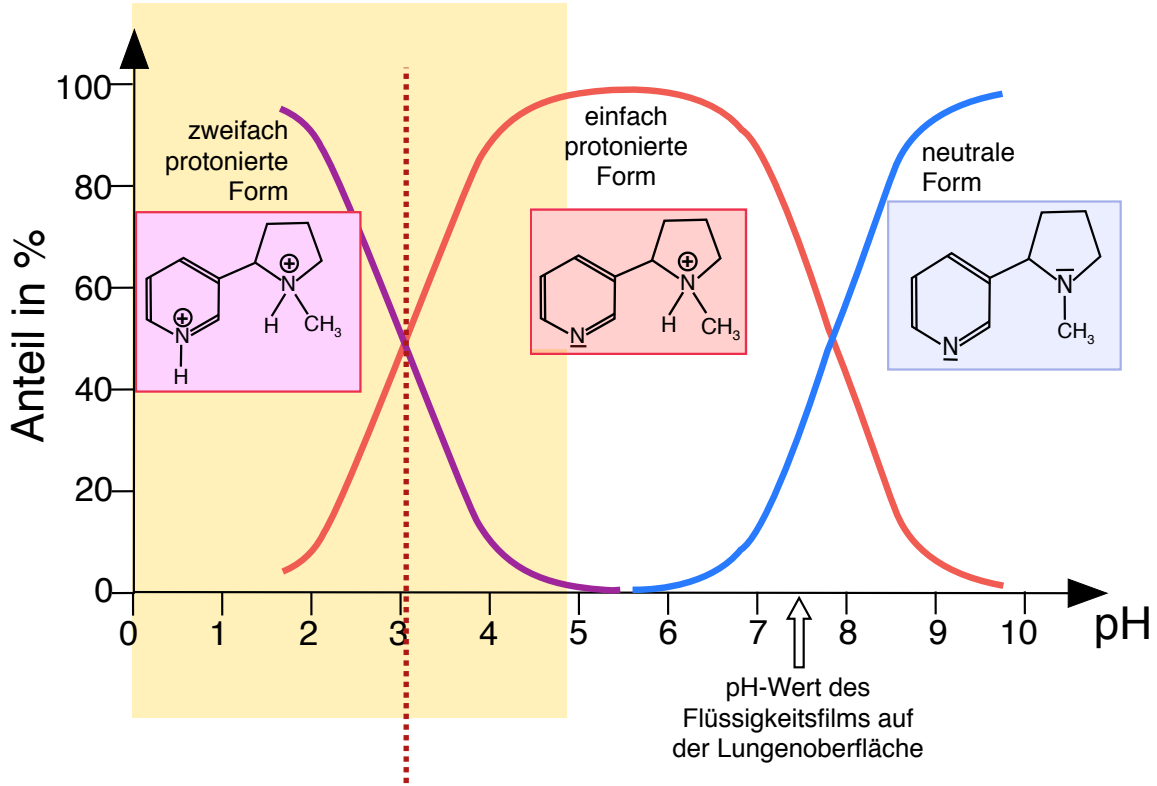
bzw.

$$HNik^{+} + OH^{-} \rightleftharpoons Nik + H_2O$$

Nikotin: korrespondierende Säure-Base-Paare




pH 0-5
pH 5-10
zweifach protonierte Form
einfach protonierte Form
neutrale Form
Anteil in %
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
pH
pH-Wert des Flüssigkeitsfilms auf der Lungenoberfläche



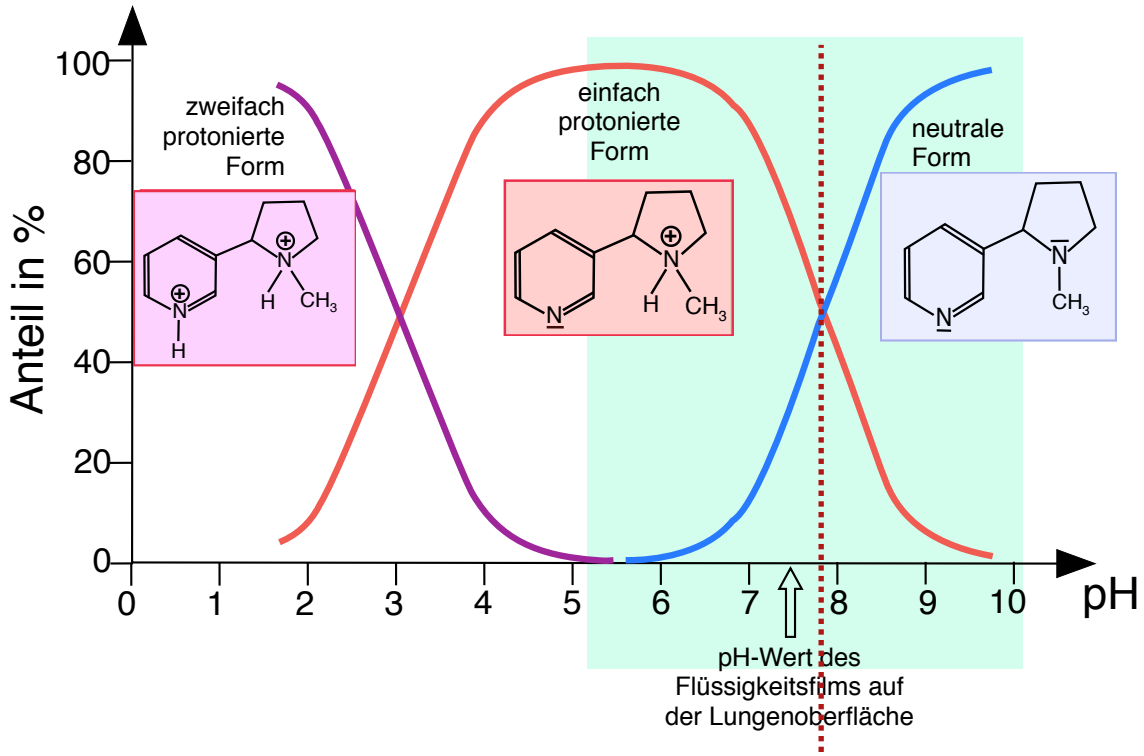
pH 3,04 $\Longrightarrow c(H_3O^+)=10^{-3,04}$ mol/L

$H_2Nik^{2+} + H_2O \rightleftharpoons HNik^+ + H_3O^+$

$$K_S = \frac{c_{H_3O^+} \cdot c_{HNik^+}}{c_{H_2Nik^{2+}}} = 10^{-3,04}\, mol/L$$

$$\frac{10^{-3,04}\, mol/L \cdot c_{HNik^+}}{c_{H_2Nik^{2+}}} = 10^{-3,04}\, mol/L$$

$$\Leftrightarrow \frac{c_{HNik^+}}{c_{H_2Nik^{2+}}} = \frac{10^{-3,04}\, mol/L}{10^{-3,04}\, mol/L} = \frac{1}{1}$$



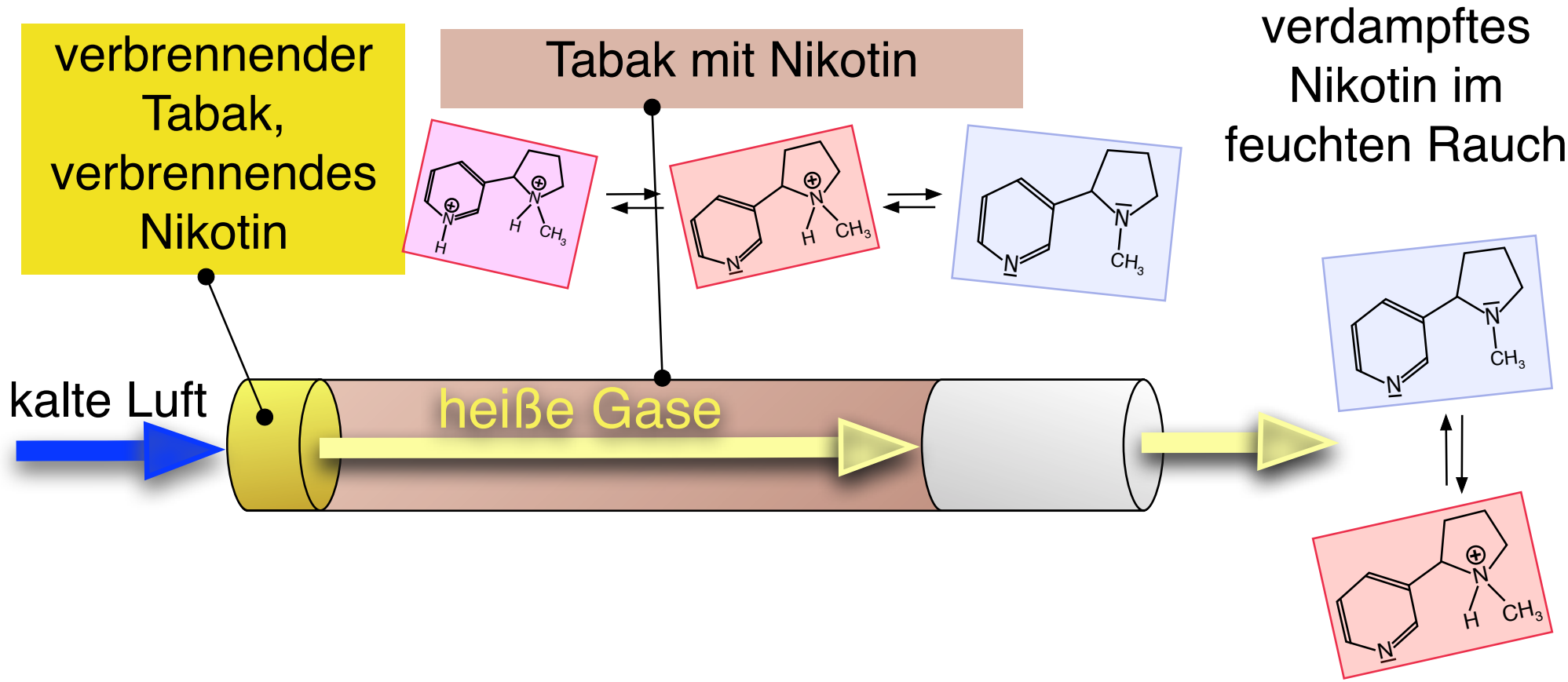
pH 7,84 $\Longrightarrow c(H_3O^+)=10^{-7,84}$ mol/L

$$HNik^+ + H_2O \rightleftharpoons Nik + H_3O^+$$

$$K_S = \frac{c_{H_3O^+} \cdot c_{Nik}}{c_{HNik^+}} = 10^{-7,84}\, mol/L$$

$$\frac{10^{-7,84}\, mol/L \cdot c_{Nik}}{c_{HNik^+}} = 10^{-7,84}\, mol/L$$

$$\Leftrightarrow \frac{c_{Nik}}{c_{HNik^+}} = \frac{10^{-7,84}\, mol/L}{10^{-7,84}\, mol/L} = \frac{1}{1}$$


verbrennender Tabak, verbrennendes Nikotin
Tabak mit Nikotin
verdampftes Nikotin im feuchten Rauch
kalte Luft
heiße Gase