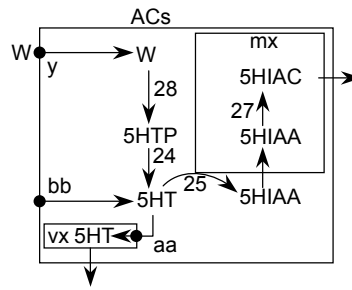
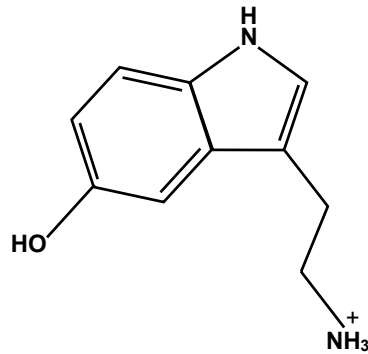


Table 6: Serotonin

5-hydroxytryptamine
MW: 176.21
Cation at physiological pH

Localization:
ACs in non-mammalians
PRs (biochemistry)



Metabolism: enzyme	EC	map	site	reactants	→	products
28 <i>tryptophan hydroxylase</i>	1.14.16.4	H2 H3	c	W + BH ₄	→	5HTP + BH ₂
24 <i>aromatic L-aa decarboxylase</i>	4.1.1.28	H2 I2	c	5HTP	→	5HT
25 <i>amine oxidase (flavin containing)</i>	1.4.3.4	I2	mom	5HT	→	5HIAA
27 <i>aldehyde dehydrogenase (DHA5)</i>	1.2.1.3	I2J2	mx	5HIAA	→	5HIAC

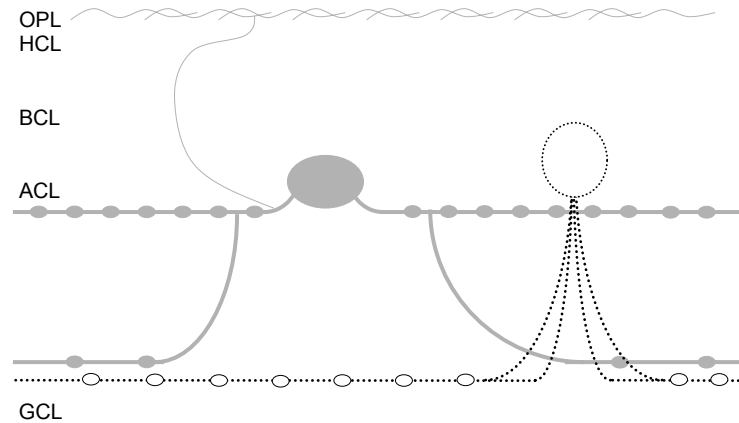
Transporters

plasma membrane	TC	Localization	synaptic vesicles	TC	Localization
y <i>TAT1 Na⁺-coupled</i>	2.A.1.13.2	?	aa <i>VMAT2</i>	2.A.1.22.1	Φ brain vm
bb <i>SERT Na⁺-coupled</i>	2.A.22.1.1	Φ ACs, IPCs			

Receptors: <i>Ionotropic</i>	TC	Subtypes	Dominant Localization
<i>5HT₃</i>	1.A.9.2.1	A,B	∇ rods

Receptors: <i>Heptahelical</i>	Subtypes	Dominant Localization
<i>GPCR Class A 5HTR Gi/o</i>	5HT1A,B,D,E,F	∇ PRs, rod BCs (5HT2A)
<i>GPCR Class A 5HTR Gq</i>	Gq 5HT2A,B,C	
<i>GPCR Class A 5HTR Gs</i>	Gs 5HT4,5A,5B,6,7	

Abbreviations: see Tables 1-5
 5HIAA: 5-hydroxyindole acetaldehyde
 5HIAAC: 5-hydroxyindole acetate
 5HT: 5-hydroxytryptamine, serotonin
 5HTP: 5-hydroxytryptophan



Only non-mammalians express a complete serotonergic phenotype in ACs (grey) with heavily varicose dendrites arborizing heavily in distal and sparsely in proximal strata of the inner plexiform layer. Many of these cells possess fine, sparse axons targeting the outer plexiform layer. Mammalian A17 (S1,2) ACs (dotted) lack a complete phenotype, expressing only SERT-like transport. In all species, ACs with serotonin transport are GABAergic.