

**Table-1:** Published dopaminergic terminal models.

S.No.	Model	Metabolite balance (units)	Autoreceptors	Reference(s)
1.	Two-compartment – cytoplasmic and extracellular	$DA_c, DA_v, DA_e, LDOPA, I1, I2$ (nmol/g, min)	DA synthesis	(Porenta and Riederer, 1982)
2.	Two-compartment – cytoplasmic and extracellular	$DA_i, DA_e$ ( $\mu$ g/g, min)	DA firing	(King et al., 1984)
3.	Three-compartment – cytoplasmic, vesicular and extracellular	$DA_c, DA_v, DA_e, DA_a, DA_g, 3MT, LDOPA, DOPAC, HVA$ (mM, ms)	-	(Justice et al., 1988)
4.	Biochemical systems theory model	DA homeostasis (relative units)	-	(Qi et al., 2008a, 2008b)
5.	Three-compartment – cytoplasmic, vesicular and extracellular	$DA_c, DA_v, DA_e, TYR, LDOPA, BH_2, BH_4, HVA, TYRPOOL$ ( $\mu$ M, hr)	DA synthesis	(Best et al., 2009; Reed et al., 2009)
6.	Three-compartment – cytoplasmic, vesicular and extracellular	$DA_c, DA_v, DA_e$ (mM, ms)	DA synthesis, DA release	(Tello-Bravo, 2012)
7.	Modified (Best et al., 2009) model with DA and 5HT cell bodies and 5HT terminal	DA terminal: $DA_c, DA_v, DA_e, TYR, LDOPA, BH_2, BH_4, HVA, TYRPOOL$	DA synthesis, DA firing, 5HT synthesis, 5HT firing	(Reed et al., 2012)

		5HT terminal: <i>5HT<sub>c</sub></i> , <i>5HT<sub>v</sub></i> , <i>5HT<sub>e</sub></i> , <i>TRYP</i> , <i>5HTP</i> , <i>BH<sub>2</sub></i> , <i>BH<sub>4</sub></i> , <i>HIA</i> , <i>TRPPOOL</i>  ( $\mu$ M, hr)		
8.	DA neurotransmission model	Volume transmission  ( $\mu$ M, sec)	DA firing, DA release	(Dreyer et al., 2010; Dreyer and Hounsgaard, 2013)
9.	Systems Biology Markup Language model	Flux balance analysis  ( $\mu$ M, hr)	-	(Büchel et al., 2013)
10.	Modified (Best et al., 2009) model with spiking neuronal model	DA terminal: <i>DA<sub>c</sub></i> , <i>DA<sub>v</sub></i> , <i>DA<sub>e</sub></i> , <i>TYR</i> , <i>LDOPA</i> , <i>BH<sub>2</sub></i> , <i>BH<sub>4</sub></i> , <i>HVA</i> , <i>TYRPOOL</i>  ( $\mu$ M, hr)	DA synthesis, DA firing	(Cullen and Wong-Lin, 2015)

*DA* – dopamine; *5HT* – serotonin; *DA<sub>c</sub>* – cytoplasmic DA; *DA<sub>v</sub>* – vesicular DA; *DA<sub>e</sub>* – extracellular DA; *DA<sub>a</sub>* – inactive DA; *DA<sub>g</sub>* – glial DA; *TH* – tyrosine hydroxylase; *I1* – competitive TH inhibitor 1; *I2* – competitive TH inhibitor 2; *LDOPA* – 3,4-dihydroxyphenylalanine; *3MT* – 3-methoxytyramine; *DOPAC* – 3,4-dihydroxyphenylacetic acid; *HVA* – homovanillic acid; *TYR* – tyrosine; *BH<sub>2</sub>* – dihydrobiopterin; *BH<sub>4</sub>* – tetrahydrobiopterin; *TYRPOOL* – tyrosine pool; *5HT<sub>c</sub>* – cytoplasmic 5HT; *5HT<sub>v</sub>* – vesicular 5HT; *5HT<sub>e</sub>* – extracellular 5HT; *5HTP* – 5-hydroxytryptophan; *HIA* – 5-hydroxyindoleacetic acid; *TRYP* – tryptophan; *TRYPOOL* – tryptophan pool;  $\mu$ M – micromolar; mM – millimolar; ms – millisecond; hr – hour; *DA<sub>i</sub>* – intracellular DA; nmol – nanomole; g – gram; min – minute.

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