Photoperiodic encoding by the neuronal network of the suprachiasmatic nucleus

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GLOSSARY

ACSF	Artificial cerebrospinal fluid
AVP	Arginine vasopressin
Bmal1	Bmal1 gene
BMAL	Bmal1 protein
CHX	Cycloheximide, a protein synthesis blocker
Circadian rhythm	Rhythm of about a day, *circa* = approximately; *dies* = day
Clock	Clock gene
CLOCK	Clock protein
CRY	Crytochrome protein
Cry1	Cryptochrome 1 gene
Cry2	Cryptochrome 2 gene
CSNK1D	Casein kinase 1 δ
CSNK1E	Casein kinase 1 ε
CT	Circadian time, the endogenous state of the pacemaker, or phase φ
DD	Constant darkness
Entrainment	Adjustment to the external time
ex vivo	Tissue taken from living organism
fDR	Fast-delayed rectifier K+-channel
GABA	γ-amino butyric acid
GFP	Green fluorescent protein
GHT	Geniculohypothalamic tract
IGL	Intergeniculate leaflet
in situ	Fixed tissue directly taken from a living organism
in vitro	Living tissue in a controlled environment outside an organism

in vivo	In the living organism
LD	Light-dark
LL	Constant light
MUA	Multi-unit activity, activity of multiple cells
NMDA	N-methyl-D-aspartate
nPas2	Paralogue neuronal PAS domain-containing protein 2 gene
NPY	Neuropeptide Y
Optic chiasm	Crossing of the optic nerves
Organotypic	Culture of a specific part of tissue
PACAP	Pituitary adenylyl cyclase activating peptide, a neuropeptide
PER	Period protein
Per1	Period 1 gene
Per2	Period 2 gene
PHI	Peptide histidine isoleucine
Photoperiod	Length of daylight
PRC	Phase response curve
Rev-erbα	Rev-Erbα gene
REV-ERBα	Rev-Erbα protein
RGC	Retinal ganglion cells
RHT	Retino-hypothalamic tract
RNA	Ribonucleic acid
SCN	Suprachiasmatic nucleus, location of the biological clock in mammals
SUA	Single unit activity, activity of a single cell
Subpopulation	A small number of neurons taken from a larger population
Tau	Internal speed of the clock τ, which is used to describe the free-running period of an animal
TEA	Tetraethylammonium
Tim	Timeless gene of *Drosophila* clock
TIM	Timeless protein of *Drosophila* clock
TTX	Tetrodotoxin, a pharmacological blocker of fast Na+ channels
VIP	Vasoactive intestinal polypeptide
vLGN	Ventral lateral geniculate nucleus
Vm	Membrane potential
VPAC2	Vasoactive intestinal peptide receptor 2
Zeitgeber	External time cues, litterally time-giver
ZT	Zeitgeber time

List of Publications

Schaap,J., Albus,H., VanderLeest,H.T., Eilers,P.H., Detari,L., and Meijer,J.H. (2003). Heterogeneity of rhythmic suprachiasmatic nucleus neurons: Implications for circadian waveform and photoperiodic encoding. **Proc. Natl. Acad. Sci. U. S. A.** *100*, 15994-15999.

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CURRICULUM VITAE

Henk Tjebbe van der Leest werd geboren op 28 juli 1979 in Rotterdam. In 1998 behaalde hij zijn VWO diploma aan de Gereformeerde Scholengemeenschap Randstad te Rotterdam. Hij startte in 1998 de studie Biologie aan de Universiteit Leiden waar hij in 1999 zijn propedeuse behaalde. Als onderdeel van de opleiding volgde hij een stage bij de afdeling diermorfologie van de Universiteit Leiden. Tijdens zijn studie raakte hij geïnteresseerd in de werking van de hersenen en de mogelijkheden die computers bieden hierin inzicht te geven. In 2002 startte hij zijn hoofdstage en legde hij een hoofdvaktentamen af bij Prof. Dr. J.H. Meijer in de groep neurofysiologie van het Leids Universitair Medisch Centrum. Daarin vond hij de uitdagende combinatie van hersenonderzoek en programmeren van analysemethoden. In 2004 heeft hij zijn doctoraalexamen Biologie behaald.

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