
BIOGRAPHICAL SKETCH

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NAME Anthony N. van den Pol, PhD	POSITION TITLE		
eRA COMMONS USER NAME (credential, e.g., agency login)	Professor		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Occidental College, CA	B.A.	1971	Biology & Psychology
Yale University, CT	M.S.	1974	Psychobiology
Yale University, CT	M.Phil.	1975	Psychobiology
Yale University, CT	Ph.D.	1977	Psychobiology
Oxford University, Oxford, UK	Postdoc	1978	Neuropharmacology

A. Positions and Honors:

Research Assist., Yale Univ. (in psychobiology with Dr. T. Powley) 1971-1976

Research Fellow (in neuroanatomy with Drs. B. Halasz and J. Szentagothai), Depts. of Anatomy, Histology, and Embryology - Semmelweis University Medical School, Budapest, Hungary, 1976

Research Fellow (in chemical neuroanatomy with Drs. David Smith and Peter Somogyi) Oxford University, Dept. of Pharmacology, 1978

Research Associate/ Supervisor, Electron Microscope Facility, Yale Med. School, Sect. Neurosurgery, 1979-1984

Associate Research Scientist, 1984-1985, Section Neurosurgery, Yale Univ School of Medicine

Associate Professor, Section of Neurosurgery, Yale University School of Medicine 1985-1990

Visiting Professor, Stanford University, Dept. of Biological Sciences 1994-1999

Professor, Department of Neurosurgery, Yale University School of Medicine 1990-present

Teaching:

Yale University "Hormones, Neurons, and Behavior" "Neuroendocrinology" "Neuroimmunology"

Honors and Awards:

Graduated with "Honors", Occidental College; Yale University Graduate Fellowship; Connecticut Graduate Award, 3X; NIH Predoctoral Fellowship; Sigma Xi Research Award; International Research Exchange Organization Award; Amer. Physiol. Soc. Travel Award; Charles Ohse Research Award; NSF Grant Review Panel - Integrative Neuroscience; NIH Study Section.

B. Publications (from 140+ refereed papers; selected papers listed here).

van den Pol AN (1985) Silver-intensified gold and peroxidase as dual ultrastructural immunolabels for pre- and postsynaptic neurotransmitters. Science 228:332-335.

van den Pol AN, di Porzio U, and Rutishauser U (1986) Growth cone localization of NCAM in central nervous system neurons in vitro. J Cell Biol 102: 2281-2294.

van den Pol AN, Wuarin JP, and Dudek FE (1990) Glutamate: a dominant excitatory neurotransmitter in neuroendocrine regulation. Science 250: 1276-1278.

Obrietan K, van den Pol AN (1995) GABA neurotransmission in the hypothalamus: developmental reversal from Ca²⁺ elevating to depressing. J Neurosci 15: 5065-5078.

Obrietan K, van den Pol AN (1996) NPY depresses GABA-mediated calcium transients in developing suprachiasmatic nucleus neurons: a novel form of calcium long term depression. J Neurosci 16: 3521-3533.

van den Pol, A.N., Obrietan K, Chen G (1996) Excitatory effects of GABA after neuronal trauma. J Neurosci. 16: 4283-4292.

Obrietan K, van den Pol AN (1996) Growth cone calcium elevation by GABA. J Comp Neurol. 372: 167-175.

van den Pol AN, Obrietan K, Chen G, Belousov A (1996) NPY mediated long term depression of excitatory activity in suprachiasmatic nucleus neurons. J Neurosci 16: 5883-5895.

- Chen G, van den Pol AN (1996) NPY Y1- and Y2-like receptors coexist in pre- and postsynaptic sites: inhibition of GABA release in isolated self-innervating SCN neurons. J Neurosci 16: 7711-7724.
- Belousov A, van den Pol AN (1997) Local synaptic release of glutamate from neurons of the rat hypothalamic arcuate nucleus. J Physiol (Lond) 499: 747-761.
- Chen G, van den Pol AN (1998) Presynaptic GABA-B autoreceptor modulation of P/Q type calcium channels and GABA release in rat suprachiasmatic nucleus neurons. J Neurosci 18: 1913-1922.
- de Lecea L, Kilduff TS, Peyron C, Gao XB, Foye PE, Danielson PE, Fukuhara C, Battenberg ELF, Gautvik VT, Bartlett II FS, Frankel WN, van den Pol AN, Bloom FE, Gautvik KM, Sutcliffe JG (1998) The hypocretins: two hypothalamic peptides with neuroexcitatory activity. Proc Natl Acad Sci 95: 322-327.
- van den Pol AN, Gao XB, Obrietan K, Kilduff T, Belousov A (1998) Pre- and postsynaptic actions and modulation of neuroendocrine neurons by hypothalamic peptide, hypocretin/orexin. J Neurosci.18:7962-7971.
- van den Pol AN, Gao XB, Patrylo P, Ghosh P, Obrietan K (1998) Glutamate inhibits GABA excitatory activity in developing neurons. J Neurosci 18:10749-10761.
- van den Pol AN, Ghosh P (1998) Selective neuronal expression of green fluorescent protein with cytomegalovirus promoter reveals entire neuronal arbor in transgenic mice. J Neurosci 18: 10640-10651.
- Peyron C, Tighe DK, van den Pol AN, de Lecea L, Heller C, Sutcliffe JG, Kilduff TS(1998)Neurons containing the novel hypothalamic peptide hypocretin project to multiple neuronal systems.J Neurosci18:9996-10015.
- van den Pol AN (1999)Hypothalamic hypocretin robust innervation of the spinal cord. J Neurosci 19: 3171-3182.
- Gao XB, van den Pol AN (1999) NT-3 potentiates excitatory GABAergic synaptic transmission in cultured developing hypothalamic neurones of the rat . J Physiol (Lond) 518: 81-95.
- van den Pol AN, Mocarski E, Saederup N, Vieira J, Meier TJ (1999) Cytomegalovirus cell tropism, replication, and gene transfer in brain. J Neurosci 19: 10948-10965.
- van den Pol AN, Vieira J, Spencer DD, Santarelli JG (2000) Mouse cytomegalovirus in developing brain tissue analysis of 11 species with GFP-expressing recombinant virus J.Comp. Neurol. 427: 559-580.
- van den Pol AN (2000) Narcolepsy: a neurodegenerative disease of the hypocretin system. Neuron 27: 415-418.
- Gao XB, van den Pol AN (2000) GABA release from axonal growth cone. J.Physiol.523:629-637.
- Gao XB, van den Pol AN (2001) Melanin concentrating hormone depresses synaptic activity of glutamate and GABA neurons from rat lateral hypothalamus. J. Physiol. (Lond) 533: 237-252.
- van den Pol AN, Obrietan K (2002) Short circuiting the circadian clock. Nature Neurosci.5: 616-618.
- van den Pol AN, Ghosh PK, Liu R, Li Y, Aghajanian GK, Gao XB (2002) Hypocretin (orexin) enhances neuron activity and cell synchrony in developing mouse GFP-expressing locus coeruleus. J Physiol 541: 169-185.
- van den Pol AN, Dalton K, Rose J (2002) Relative neurotropism of a recombinant rhabdovirus expressing a green fluorescent envelope glycoprotein. J. Virology 76: 1309-1327.
- van den Pol AN, Reuter J, Santarelli J (2002) Enhanced cytomegalovirus infection of the developing brain independent of the adaptive immune system. J.Virology. 76 8842-8854.
- van den Pol AN (2003) Weighing the role of hypothalamic feeding neurotransmitters Neuron 40: 1059-1061
- van den Pol AN (2004) Developing neurons make the switch. Nature Neurosci. 7: 7-8.
- Li Y, Gao XB, Sakurai T, van den Pol AN (2002) Hypocretin/orexin excites hypocretin neurons via a local glutamate neuron- a mechanism for orchestrating the hypothalamic arousal system. Neuron 36:1169-1181.
- Liu RJ, van den Pol AN, Aghajanian G (2002) Hypocretins (Orexins) regulate serotonin neurons in the dorsal raphe nucleus by excitatory direct and inhibitory indirect actions. J.Neurosci. 22: 9453-9464.
- Gao XB, van den Pol AN (2002) Melanin-concentrating hormone depresses L-, N-, and P/Q-type voltage-dependent calcium channels in rat lateral hypothalamic neurons. J. Physiology 542:273-286.
- Wu M, Zaborszky L, Hajszan T, van den Pol AN, Alreja M (2004) Hypocretin/orexin innervation and excitation of identified septohippocampal cholinergic neurons. J. Neurosci, 24:3527-3536..
- Fu LY, Acuna-Goycolea C, van den Pol AN. (2004) NPY inhibits hypocretin/orexin neurons by multiple pre- and postsynaptic mechanisms: tonic depression of the hypothalamic arousal system.J Neurosci. 24:8741-8751
- Acuna-Goycolea C, Li Y, van den Pol AN (2004) Group 3 metabotropic glutamate receptors maintain tonic inhibition of excitatory synaptic input to hypocretin/orexin neurons. J. Neurosci. 24: 3013-3022.

- van den Pol AN, Acuna C, Clark R, Ghosh PK (2004) Physiological properties of hypothalamic MCH neurons identified with selective expression of reporter gene after recombinant virus infection. Neuron 42: 635-652.
- Hantman AW, van den Pol AN, Perl ER (2004) Morphological and physiological features of a set of spinal substantia gelatinosa neurons defined by green fluorescent protein expression. J Neurosci. 24:836-842
- Reuter JD, Gomez DL, Wilson JH, van den Pol AN (2004) Systemic immune deficiency necessary for cytomegalovirus invasion of the mature brain. J Virol. 78: 1473-87
- Li Y, van den Pol AN (2005) Direct and indirect inhibition by catecholamines of hypocretin/orexin neurons. J. Neurosci. 25: 173-183..
- Wollmann G, Tattersall P, van den Pol AN (2005) Targeting human glioblastoma cells-comparison of nine viruses with oncolytic potential. J. Virology, 79: 6005-6022.
- Huang H, Ghosh P, van den Pol AN (2006) Prefrontal cortex-projecting glutamate thalamic paraventricular nucleus excited by hypocretin: feedforward circuit that may enhance cognitive arousal. J.Neurophys. 95:1656-1668.
- van den Pol AN. (2006) Viral infections in the developing and mature brain. Trends Neurosci. 29: 398-406.
- Li Y, van den Pol AN (2006) Differential target dependent actions of coexpressed inhibitory dynorphin and excitatory hypocretin/orexin neuropeptides. J. Neurosci. 26: 13037-13047
- van den Pol AN, Robek MD, Ghosh PK, Ozduman K, Bandi P, Whim MD, Wollmann G (2007) Cytomegalovirus induces interferon-stimulated gene expression and is attenuated by interferon in the developing brain. J Virol. 81: 332-348
- Wollmann G, Robek MD, van den Pol AN (2007) Variable deficiencies in the interferon response enhance susceptibility to VSV oncolytic actions in glioblastoma but not in normal human glia. J. Virol. 81:1479-1491.
- Fu LY, van den Pol AN (2007) GABA excitation in mouse hilar neuropeptide Y neurons. J. Physiol. 579: 445-464.
- Huang H, Acuna-Goycolea C, Li Y, Cheng HM, Obrietan K, van den Pol AN. (2007) Cannabinoids excite hypothalamic melanin-concentrating hormone but inhibit hypocretin/orexin neurons: implications for cannabinoid actions on food intake and cognitive arousal. J. Neurosci. 27: 4870-4881.
- Ho WSC, van den Pol AN (2007) Bystander attenuation of neuronal and astrocyte intercellular communication by murine cytomegalovirus infection of glia J. Virol. 2007 81: 7286-7292.
- Huang H, van den Pol AN. (2007) Rapid direct excitation and long-lasting enhancement of NMDA response by group I metabotropic glutamate receptor activation of hypothalamic melanin-concentrating hormone neurons. J. Neurosci. 27: 11560-11572.
- Tsunematsu, T, Fu LY, Yamanaka A, Ichiki K, Tanoue A, Sakurai T, van den Pol AN (2008) Vasopressin increases locomotion through a V1a receptor in orexin/hypocretin neurons- implications for water homeostasis. J. Neurosci. 28: 228-238.

C. Projects ongoing:

GABA excitation in the developing hypothalamus. A.N.van den Pol (PI)

NIH NS34887 1995-2009

The work in this project focuses on the excitatory actions of GABA during early development and after neuronal injury using brain slices and cultures.

Cytomegalovirus in brain A.N. van den Pol (PI)

NIH AI/NS48854 2001-2011

This project focuses on CMV infections in the developing and immunocompromised brain.

Hypocretin neurons. A. N. van den Pol (PI)

NIH NS41454 2001-2010

This project focuses on electrophysiological properties of hypocretin neurons studied with whole cell patch clamp recording.

Response properties of hypothalamic MCH cells A N van den Pol (PI)

NIH NS 48476 2005-2010

This project examines how neurons that synthesize melanin concentrating hormone respond to peptide and amino acid neurotransmitters.

Projects completed.

NPY in hippocampal epilepsy. A.N. van den Pol (PI)

NIH NS37788 2000- 2005

This project examined the role of neuropeptide Y as a natural anti-seizure peptide in human and rodent brain.