31. BIOGRAPHICAL SKETCH

Provide the following information for the sponsor (co-sponsor). **DO NOT EXCEED FOUR PAGES.**

NAME OF SPONSOR (CO-SPONSOR)	POSITION TITLE
Jackie D. Wood	Professor of Physiology & Cell Biology And Internal Medicine

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Kansas State University, Pittsburgh	B.S.	1964	Biology
Kansas State University, Pittsburgh	M.S.	1966	Physiology
University of Illinois, Urbana	Ph.D.	1969	Physiology and Biophysics

A. Positions and Honors

Positions and employment:

1969-71 Assistant Professor of Biology, Williams College, Williamstown, Massachusetts
1971-74 Assistant Professor of Physiology, University of Kansas Medical Center, Kansas City
1974-78 Associate Professor of Physiology, University of Kansas Medical Center, Kansas City
1978-79 Professor of Physiology, University of Kansas Medical Center, Kansas City
1979-85 Professor and Chairman of Physiology, University of Nevada School of Medicine Reno
1985-97 Professor and Chairman, The Ohio State University College of Medicine, Columbus, Ohio
1986-Present Professor of Internal Medicine, The Ohio State University College of Medicine, Columbus, Ohio
1997-Present Professor of Physiology and Cell Biology, The Ohio University College of Medicine, Columbus, Ohio

Other Experience and Professional Memberships

1976-78 Editorial Board, *American Journal of Physiology*
1978-86 Editorial Board, *Journal of the Autonomic Nervous System*
1981-85 General Medicine A Study Section, National Institutes of Health, USA
1985-91 Editorial Board, *American Journal of Physiology*
1985- Editorial Board, *Journal of Digestive Diseases and Sciences*
1987 Editor, *Handbook of Physiology*, Gastrointestinal Motility and Blood Flow, American Physiological Society
1988-91 Review Subcommittee C, Diabetes, Digestive Diseases and Kidney, National Institutes of Health
1988-01 Editorial Board, *Journal of Neurogastroenterology and Motility*
1988-03 Associate Editor, *News In Physiological Sciences*
1991-97 Associate Editor, *American Journal of Physiology*
1996-02 Editorial Board, *Emirates Medical Journal*
2001-03 Associate Editor, *Encyclopedia of Gastroenterology*, Elsevier-Academic Press
2004- Associate Editor, *Physiology of the Gastrointestinal Tract*, 4th Edition

Honors

1974-79 Research Career Development Award, National Institutes of Health USA
1976-78 Alexander von Humboldt Fellowship, Federal Republic of Germany
1986 Hoffman-LaRoche Prize for research in gastrointestinal physiology

1987 Second Annual Research Award presented by the Functional Brain-Gut, Research Group, Orlando, Florida.

B. Selected peer-reviewed publications (in chronological order)

(Publications selected from 430 journal articles, chapters and abstracts)

1. Starodub AM., Wood JD. A-type potassium current in myenteric neurons from guinea-pig small intestine. Neuroscience 2000;99:389-396.
2. Wood JD. Allergies and the brain-in-the-gut. Clin Perspect Gastroenterol 2000;343-348.
3. Wood JD. Neuropathy in the brain-in-the-gut. Eur J Gastroenterol Hepatol 2000;12:597-600.
4. Wood JD, Alpers D.H., Andrews PLR. Fundamentals of neurogastroenterology: Basic Science. In: Drossman DA, Talley NJ, Thompson WG, Corazziari E, Whitehead WE, eds. The Functional Gastrointestinal Disorders: Diagnosis, Pahtophysiology and Treatment: A Multinational Consensus. McLean, Virginia: Degnon Associates, 2000:31-90.
5. Wood JD, Peck OC, Tefend KS, Stonerook MJ, Caniano DA, Mutabagani KS, Lhotak S, Sharma HM. Evidence that colitis is initiated by environmental stress and sustained by fecal factors in the cotton-top tamarin (*Saguinus oedipus*). Dig Dis Sci 2000;45:385-393.
6. Xia Y, Hu H-Z, Liu S, Pothoulakis C, Wood JD. *Clostridium difficile* toxin-A excites enteric neurons and suppresses sympathetic neurotransmission in the guinea-pig. Gut 2000;46:481-486.
7. Peck OC, Wood JD. Brain-gut interactions in ulcerative colitis. Gastroenterology 2000;118:807-808.
8. Hu H-Z, Gao N, Lin Z, Gao C, Liu S, Ren J, Xia Y, Wood JD. Chemical coding and electrophysiology of enteric neurons expressing neurofilament 145 in guinea-pig gastrointestinal tract. J Comp Neurol 2002;442:189-203.
9. Hu H-Z, Gao N, Lin Z., Gao C, Liu S, Ren J, Xia Y, Wood JD. $P2X_7$ receptors in the enteric nervous system of guinea-pig small intestine. J Comp Neurol 2001;440:299-310.
10. Liu S, Hu H-Z, Ren J, Gao C, Wood JD. Pre- and postsynaptic inhibition by nociceptin in guinea pig myenteric plexus in vitro. Am J Physiol 2001;281:G237-G246.
11. Ren J, Hu H-Z, Starodub AM, Wood JD. Galanin suppresses calcium conductance and activates inwardly rectifying potassium channels in myenteric neurones from guinea-pig small intestine. Neurogastroenterol Mot 2001;13:247-254.
12. Wood JD. The enteric nervous system, serotonin and the irritable bowel syndrome. Cur Opin Gastroenterology 2001;17:91-97.
13. Zholos AV, Baidan LV, Wood JD. Sodium conductance in cultured myenteric AH-type neurons from guinea-pig small intestine. Auto Neurosci 2002; 96: 93-102.
14. Wood JD. Neurogastroenterology and digestive motility. In: Rhoades RA, Tanner GA, eds. Medical Physiology. 2nd ed. Baltimore: Lippincott Williams & Wilkins, 2003: 449-480.
15. Wood JD. Enteric nervous system. In: Schuster MM, Crowell MD, Koch KL, eds. Atlas of Gastrointestinal Motility. 2nd ed. Hamilton, Ontario: B.C. Decker, Inc., 2002:19-42.
16. Wood JD. Neuro-pathophysiology of IBS. J Clin Gastroenterol 2002; 35(Suppl.)11-22.
17. Lin Z, Na G, Hu H-Z, Liu S, Gao C, Kim G, Ren J, Xia Y, Peck OC, Wood JD. Immunoreactivity of Hu proteins facilitates identification of myenteric neurons in guinea-pig small intestine. Neurogastroenterol Mot 2002; 14:197-204.
18. Enteric neuro-immuno physiology. In: Brookes SJH, Costa M, eds. Innervation of the Gastrointestinal Tract. Burnstock G, series ed. London: Taylor and Francis, 2002, pp 363-392.
19. Gao C, Liu S,Hu H-Z, Gao N, Kim GY, Xia Y, Wood JD. Serine proteases excite myenteric neurons through protease-activated receptors in guniea-pig small intestine. Gastroenterology 2002; 123:1554-1564.
20. Wood JD. Neurobiology of the enteric nervous system. In: Dyck PJ, Thomas PK, eds. Peripheral Neuropathy. Philadelphia: WB Saunders, 2003 (In Press)
21. Liu S, Hu H-Z, Gao N, Gao C, Wang G, Wang X, Peck OC, Kim G, Gao X, Xia Y, Wood JD.

Neuroimmune interactions in guinea pig stomach and small intestine. Am J Physiol 2003; 284:G154-G164.
22. Liu S, Hu H-Z, Gao C, Gao N, Wang G, Wang X, Gao X, Xia Y, Wood JD. Actions of cysteinyl leukotrienes in the guinea-pig stomach and small intestine. Eur J Pharmacol 2003; 459:27-39.
23. Hu H-Z, Liu S, Gao N, Xia Y, Mostafa R, Ren J, Zafirov DH, Wood JD. Actions of bradykinin on electrical and synaptic behaviour of neurones in the myenteric plexus of guinea-pig small intestine. Br J Pharmacol 2003; 138:1221-1232.
24. Hu H-Z, Gao N, Ren J, Zhu MX, Liu S, Ren J, Gao C, Xia Y, Wood JD. Slow excitatory synaptic transmission mediated by $P2Y_1$ receptors in the guinea-pig enteric nervous system. J Physiol (Lond) 2003; 550.2:493-504.
25. Liu S, Hu H-Z, Gao C, Gao N, Xia Y, Wood JD. Actions of galanin on neurotransmission in the submucous plexus of guinea pig small intestine. Eur J Pharmacol 2003;471:49-58.
26. Wood JD, Kirchgessner A. Slow excitatory metabotropic signal transmission in the enteric nervous system. J Neurogastroenterol Mot 2004; 16(Suppl 1): 1-10.
27. Wood JD. Enteric neuro-immuno physiology and pathophysiology. Gastrointerology 2004; 127:635-657.
28. Hu H-Z, Gao N, Liu S, Ren J, Wang X, Xia Y, Wood, JD. Action of bradykinin in the submucosal plexus of guinea-pig small intestine. J Exp Pharmacol Exp Ther 2004; 309:320-327.
29. Wood JD and Galligan JJ. Function of opioids in the enteric nervous system. J Neurogastroenterol Mot. 2004; 16:17-28.
30. Hu H-Z, Gao N, Liu S, Ren J, Wang X, Xia Y, Wood, JD. Metabotropic signal transduction for bradykinin in submucosal neurons of guinea-pig small intestine. J Exp Pharmacol Exp Ther 2004;309:310-319.
31. Wood JD, Liu S. Galanin receptors and actions. Drugs Fut 2004; 29:149-161.
32. Hong-Zhen Hu, Qihai Gu, Chunbao Wang, Craig K. Colton, Jisen Tang, Mariko Kinoshita, Lu-Yuan Lee, Jackie D. Wood, Michael X. Ziu. 2-aminoethoxydiphenyl borate is a common activator of TRPV1, TRPV2 and TRPV3. J Biol Chem. 2004;279:35741-35748.
33. Wang C, Hu HZ, Colton CK, Wood JD, Zhu MX. An alternative splicing product of the murine trpv1 gene dominant-negatively modulates the activity of TRPV1 channels. J Biol Chem 2004; 279:37423-37430.
34. Wood, JD. The first Nobel Prize for integrated systems physiology: Ivan Petrovich Pavlov (1904). Physiology 2004; (In Press)

C. Research Support

Ongoing Research Support

RO1 (DK37238-17) Jackie D. Wood (PI) 10/30/2003- 10/30/2008
NIH/NIDDK
FUNCTION OF THE ENTERIC NERVOUS SYSTEM: An electrophysiological investigation of signal transduction mechanisms for slow EPSPs in intestinal secretomotor neurons.

This project is designed to understand better the cellular neurobiology of signaling in secretomotor neurons in the intestinal submucosal plexus and musculomotor neurons in the myenteric plexus of guinea-pig intestine. Mechanisms of cellular signaling underlie functions of secretomotor neurons that are basic to control of fluidity of the intestinal contents in states of health and to diarrhea and constipation in disordered states. Cellular levels of signaling in musculomotor neurons is basic to the control of muscular contractile behavior during patterns of intestinal motility. The specific aims for the project emerged from pilot/feasibility

studies of slow synaptic excitation, which suggested that a new kind of slow excitatory postsynaptic potential was an important part of the cellular neurophysiology of secretomotor and musculomotor neurons. Due to pilot/feasibility studies, which suggest that signal transduction for the new EPSP involves mobilization of intracellular calcium, a general aim is to determine which of the possible calcium signaling pathways underlie the slow EPSP and to understand the details that define the pathways.

RO1 DK57075 Jackie D. Wood (PI) 07/01/2001---03/31/2006
NIH/NIDDK
Bradykinin in Enteric Neuroimmune Communication: An Electrophysiological and molecular biology investigation of the action of the inflammatory mediator bradykinin in the enteric nervous system.
This project uses methods of electrophysiological recording and molecular biological techniques for study of gene expression to test the hypothesis that bradykinin is an important inflammatory mediator in the enteric nervous system. This work focuses on electrophysiological responses to bradykinin and functional expression of the bradykinin B2 receptor, COX-1 and COX-2 proteins and their genes in the enteric nervous system. The studies are designed to test the hypothesis that bradykinin activates B2 type receptors together with activation of COX-1 and induced expression of COX-2 which in turn catalyze the biosynthesis of PGs from arachidonic acid. PGs release appears to be partly responsible for presynaptic inhibition of neurotransmitters release and postsynaptic excitation of enteric neurons. Integrated output of these effects is a stereotypical pattern of intestinal behavior consisting of copious secretion of water and electrolytes across the mucosa in coordination with a powerful propulsive motility pattern that propagates over extensive lengths of bowel. This is especially important under pathophysiological circumstances such as inflammatory bowel disease where bradykinin is increased.

Pending Research Support

RO1 DK068258 Jackie D. Wood (PI) 07/01/2004---03/31/2009
NIH/NIDDK
Purinergic Neurogenic Mucosal Secretion: The overall aim of this project is to characterize a novel purinergic slow excitatory postsynaptic potential (EPSP) that is mediated by a metabotropic ATP receptor (P2Y1 receptor) in the enteric nervous system. Evidence for the existence of the purinergic slow EPSP emerged from pilot studies in which the P2Y1 receptor antagonist MRS2179 selectively blocked both the slow EPSP and slow EPSP-like responses evoked by ATP in submucosal neurons. The hypothesis that the purinergic slow EPSP is mediated by synaptic release of ATP and P2Y1 receptors in submucosal secretomotor neurons will be tested pharmacologically in morphologically identified neurons. Molecular cloning and functional expression will be used to better characterize the P2Y1 receptor. The proposal emerged from pilot/feasibility results which suggest the hypothesis that intestinal secretomotor neurons receive purinergic slow excitatory synaptic input from neurons in the myenteric plexus, from neighboring neurons in the submucosal plexus and from sympathetic neurons in prevertebral gangla. Added support for the hyothesis came from the discovery that the selective P2Y1 receptor antagonist MRS2179 suppressed neurogenic secretory responses evoked by application of ATP and by transmural electrical stimulation of secretomotor neurons in Ussing chamber experiments. Fulfilling the aims of this proposal will lead to better understanding of the role of a newly discovered purinergic slow EPSP in the enteric nervous system at the cellular, molecular and integrated system levels. The pilot/feasibility data are the first to demonstrate a functional purinergic slow EPSP in the enteric nervous system. The discovery that a P2Y1 receptor mediates the slow EPSP in intestinal secretomotor neurons might help in development of new drugs for treatment of the irritable bowel syndrome, inflammatory bowel disease and other disorders of defecation by targeting the P2Y1 receptor or ATP metabolic pathways in the pool of enteric neurons that control intestinal secretion.

Continuation Page

NAME OF APPLICANT (Last, first, middle initial)