

Profiles  
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## HARBANS LAL, PH.D

### LIST OF PUBLICATIONS

1. Lal, H.: Experimental evaluation of some methods for testing CNS drugs. (Part I). A study of ionones as CNS stimulants. (Part II). M.S. thesis (1958).
2. Wenzel, D.G. and Lal, H.: The relative reliability of the escape reaction and righting-reflex sleeping time in the mouse. *J. Am. Pharm. Assoc.*, 48: 90-91 (1959).
3. Lal, H.: Localization of barbital-C14 and other radioactive drugs in the central nervous system and additional tissues. Ph.D. thesis (1962).
4. Nair, V., Lal, H. and Roth, L.J.: A demonstration of the early entry of iproniazid into the central nervous system. *Int. J. Neuropharmacol.* 1: 361-367 (1962).
5. Wenzel, D.G. and Lal, H.: Simplified method for measurement of actomyocin contraction. *J. Pharmaceut. Sci.* 51: 695-697 (1962).
6. Lal, H., Ginocchio, S. and Shefner, A.M.: The effect of a-methyl-3-4-dihydroxyphenylalanine (Methyl-dopa) and a-methyl-meta-tyrosine (a-MMT) on amphetamine toxicity. *Life Sci.* 2: 190-192 (1963).
7. Lal, H., Ginocchio, S. and Hawrylewicz, E.J.: Procedure for bioassaying mosquito repellent in laboratory animals. *Proc. Soc. Exp. Biol. Med.* 113: 770-772 (1963).
8. Cohen, M. and Lal, H.: Effect of sensory stimuli on amphetamine toxicity in aggregated mice. *Nature* 201:1037-1039 (1964).
9. Lal, H.: Distribution of urease activity in mice as studied by whole-animal autoradiography. *Int. J. Appl. Rad. and Isotopes.* 15: 543-546 (1964).
10. Lal, H., Barlow, C.F. and Roth, L.J.: Barbital-C14 in cat and mouse. *Arch. Int. Pharmacodyn.* 149: 25-36 (1964).
11. Lal, H., Blair, W., Ehrlich, R. and Shefner, A.M.: Combined toxicity of staphylococcal enterotoxin and a-methyl-3, 4-dihydroxyl-1-phenylalanine (Methyl dopa). *Nature* 202: 1226-1227 (1964).
12. Lal, H., Blair, W., Ehrlich, R. and Shefner, A.M.: Effect of staphylococcal enterotoxin on barbital toxicity. *Toxicol. Appl. Pharmacol.* 6: 602-606 (1964).
13. Lal, H. and Chessick, R.D.: Biochemical mechanism of amphetamine toxicity in aggregated and isolated mice. *Life Sci.* 3: 361-366 (1964).
14. Lal, H., Shefner, A.M. and Wenzel, D.G.: Relative reliability of two methods for measuring spontaneous activity. *Arch. Int. Pharmacodyn.* 150: 192-196 (1964).
15. Lal, H. and Chessick, R.D.: Lethal effects of aggregation and electric shock in mice treated with cocaine. *Nature* 208: 295-296 (1965).

16. Lal, H., Ginocchio, S. and Hawrylewicz, E.: Effect of Allethrin on feeding behavior of insects. *Proc. Soc. Exp. Biol. and Med.* 120: 441-443 (1965).
17. Grabarits, F., Chessick, R. and Lal, H.: Changes in brain norepinephrine after decapitation. *Biochem. Pharmacol.* 15: 127-128 (1966).
18. Grabarits, F., Lal, H. and Chessick, R.: Effect of cocaine on brain noradrenaline to toxicity and convulsions in mice. *J. Pharm. Pharmacol.* 18: 131-133 (1966).
19. Lal, H.: Conflict induced fixation of stereotyped lever pressing responses. *Psychon. Sci.* 6: 333-334 (1966).
20. Lal, H., Sumyk, G. and Shefner, A.: Effect of cobra venom and venom fractions on barbital induced hypnosis in mice. *Arch. Int. Pharmacodyn.* 159: 260-452 (1966).
21. Lal, H.: Operant control of vocal responding in rats. *Psychon. Sci.* 8: 35-36 (1967).
22. Lal, H. and Brown, R.: Effects of bacterial endotoxin on operant behavior of the rat. *Toxicol. Appl. Pharmacol.* 14: 41-47 (1968).
23. Lal, H. and Brown, R.: A possible relationship between catecholamines and acute toxicity of desipramine. *Psychopharmacol.* 12: 354-357 (1968).
24. Lal, H. and Brown, R.: Enhanced toxicity of imipramine and desipramine in aggregated mice. *J. Pharm. Pharmacol.* 20: 581-582 (1968).
25. Lal, H., DeFeo, J.J. and Thut, P.: Effect of amphetamine on pain-induced aggression. *Commun. Behav. Biol.* 1: 333-336 (1968).
26. Lal, H. and Gosser, J.: Research on teaching pharmacy: The role of student ratings. *Am. J. Pharmaceut. Ed.* 32: 562-572 (1968).
27. Lal, H. and Lindsley, O.: Therapy of chronic constipation in a young child by rearranging social contingencies. *Behav. Res. Ther.* 6: 484-685 (1968).
28. Baumel, I., DeFeo, J. and Lal H.: Decreased potency of CNS depressants after prolonged social isolation in mice. *Psychopharmacol.* 15: 153-15 (1969).
29. Baumel, I., Schatz, R., DeFeo, J. and Lal, H.: Protection against semi-carbazide-induced convulsions in mice at hypobaric pressure. *J. Pharm. Pharmacol.*, 21: 119-120 (1969).
30. Baumel, I., Schatz, R., DeFeo, J. and Lal, H.: Protection against m-flurotyrosine convulsions and lethality in mice exposed to hypobaric hypoxia. *J. Pharm. Pharmacol.*, 21: 475-476 (1969).
31. Baumel, I., Schatz, R., DeFeo, J.J. and Lal, H.: Hypoxia and methionine sulfoximine seizures in mice. *J. Pharm. Pharmacol.* 21: 703-704 (1969).
32. Fuller, G.C., Olshan, A.M. and Lal, H.: The stimulatory effect of phenobarbital on the N-demethylation of p-chloro-N-methylaniline. *Life Sci.* 8: 383-387 (1969).
33. Lal, H.: Control of learned conditioned-avoidance responses by amphetamine and chlorpromazine. *Psychopharmacol.* 14: 33-37 (1969).
34. Lal, H. and Brown, R.M.: Effect of Excherichia coli endotoxin on locomotor activity of mice. *Toxicol.* 7: 39-42 (1969).

35. Lal, H. and Roffman, M.: Learning associated with "amphetamine-state". Proc. 77th Conv. Am. Psychol. Assoc. 4: 881-882 (1969).
36. Baumel, I., DeFeo, J. and Lal, H.: Effect of acute hypoxia on brain sensitivity and metabolism of barbiturates in mice. Psychopharmacol. 17: 193-197 (1970).
37. Baumel, I., DeFeo, J.J. and Lal, H.: Alteration of brain sensitivity and barbiturate metabolism unrelated to aggression in socially deprived mice. Psychopharmacol. 18: 320-324 (1970).
38. Baumel, I., Pitterman, A., DeFeo, J.J. and Lal, H.: Effect of hypobaric hypoxia and sodium nitrite on convulsions due to intercerebral semicarbazide. Res. Comm. Chem. Pathol. Pharmacol. 1: 497-501 (1970).
39. Fuller, G.C., Olshan, A., Puri, S. and Lal, H.: Induction of hepatic drug metabolism in rats by methylchloroform inhalation. J. Pharmacol. Exp. Therap. 175: 311-317 (1970).
40. Karkalas, Y. and Lal, H.: Imipramine pamoate in hospitalized depressives a double-blind comparison with placebo. Psychosomatics 11: 107-111 (1970).
41. Lal, H., DeFeo, J. and Thut, P.: Prevention of pain-induced aggression by p-chloroamphetamine. Biol. Psychiat. 2: 205-206 (1970).
42. Lal, H., Nesson, B. and Smith, N.: Amphetamine-induced aggression in mice pretreated with dihydroxyphenylalanine (DOPA) and/or reserpine. Biol. Psychiat. 2: 299-301 (1970).
43. Lal, H., Puri, S. and Fuller, G.C.: Impairment of hepatic drug metabolism by carbon tetrachloride inhalation. Toxicol. Appl. Pharmacol., 16: 35-39 (1970).
44. Lal, H., Puri, S. and Fuller, G.C.: Enhanced toxicity of carbon tetrachloride inhalation after phenobarbital pretreatment. Pharmacol. Res. Comm., 2: 143-148 (1970).
45. Lal, H., Puri, S.K. and Fuller, G.C.: Inhibition of hepatic hexobarbital metabolism by amphetamine. Psychopharmacol., 16: 395-398 (1970).
46. Lal, H. and Shah, H.: Effect of methylchloroform inhalation on barbiturate hypnosis and hepatic drug metabolism in mice. Toxicol. Appl. Pharmacol., 17: 625-633 (1970).
47. Lal, H. and Zabik, J.: Increased food consumption in thirsty rats after water satiation: Inhibition by salts. Psychon. Sci. 20: 131-132 (1970).
48. Baumel, I., Carlson, G. and Lal, H.: Role of hepatic metabolism in the convulsant action of m-fluorotyrosine. Brain Res. 28: 357-360 (1971).
49. Lal, H., O'Brien, J. and Puri, S.K.: Morphine-withdrawal aggressions: sensitization by amphetamine. Psychopharmacologia 22: 217-223 (1971).
50. Puri, S.K., Fuller, G. and Lal, H.: Effect of chloroform inhalation on barbiturate narcosis and metabolism in normal and phenobarbital pre-treated rats. Pharmacol. Res. Comm. 3: 247-255 (1971).
51. Roffman, M. and Lal, H.: Facilitatory effect of amphetamine on learning a recall of an avoidance response. Arch. Int. Pharmacodyn. 192: 347-351 (1971).
52. Roffman, M. and Lal, H.: Conditional alteration of hepatic drug metabolism. Proc. Am. Psychol. Assn. 6: 773-774 (1971).

53. Schatz, R. and Lal, H.: Elevation of brain GABA by pargyline: A possible mechanism for protection against oxygen toxicity. *J. Neurochem.*, 18: 2553-2555 (1971).
54. Shah, H. and Lal, H.: The potentiation of barbiturates by desipramine in the mouse: mechanism of action. *J. Pharmacol. Exp. Ther.* 179: 404-409 (1971).
55. Karkalas, J. and Lal, H.: Haloperidol in the treatment of heroin addiction. In: Drug Addiction: Clinical and Socio-Legal Aspect. Eds. Singh, J., Miller, L. and Lal, H., Futura Publishing Co., Mt. Kisco, pp. 251-256 (1972).
56. Lal, H., DeFeo, J.J., Pitterman, A., Patel, G. and Baumel, I.: Effects of prolonged social deprivation or enrichment on neuronal sensitivity for CNS depressants and stimulants. In: Drug Addiction Experimental Pharmacology. Eds. Singh, J., Miller, L. and Lal, H., Futura Publishing Co., Mt. Kisco, pp. 255-266 (1972).
57. Lal, H. and Puri, S.: Morphine-withdrawal aggression: Role of dopaminergic stimulation. In: Drug Addiction: Experimental Pharmacology Eds. Singh, J., Miller, L., Lal, H. Futura Publishing Co., Mt. Kisco, pp. 301-310 (1972).
58. Lal, H. and Zabik, J.: Operant ingestion (oral) or ethanol effects of behavioral contingencies disulfiram pretreatment and morphine dependence. In: Drug Addiction: Experimental Pharmacology. Eds. Singh, J., Miller, L. and Lal, H. Futura Publishing Co., New York, pp. 61-68 (1972).
59. Richardson, E., Karkalas, Y. and Lal, H.: Use of reinforcement therapy in treatment of hallucinations in hospitalized psychotics. Advances in Behav. Therapy 4: 147-150 (1972).
60. Roffman, M., Marshall, P., Silverstain, A., Karkalas, J., Smith, N. and Lal, H.: Failure to demonstrate "amphetamine state" controlling learning behavior in humans. In: Drug Addiction: Clinical and Socio-Legal Aspect, Eds. Singh, J., Miller, L. and Lal, H. Futura Publishing Co., pp. 53-57 (1972).
61. Roffman, M., Reddy, C. and Lal, H.: Alleviation of morphine-withdrawal symptoms by conditional stimuli: posmine under multiple-operant contingencies in acute and chronically treated rats In: Drug Addiction: Experimental Pharmacology. Eds. Singh, J., Miller, L. and Lal, H.: Futura Publishing Co., New York, pp. 269-293 (1972).
62. Zabik, J. and Lal, H.: Self-ingestion of dextroamphetamine under multiple-operant-contengencies in acute and chronically treated rats In: Drug Addiction: Experimental Pharmacology. Eds. Singh, J., Miller, L. and Lal, H.: Futura Publishing Co., Mt. Kisco, pp. 269-293 (1972).
63. Hynes, M.D., Lal, H. and Anderson, C.D.: Facilitation of recovery from lateral hypothalamic syndrome by blockade of central dopaminergic receptor sites. *Proc. Con. Am. Psychol. Assoc.* 8: 1047-1048 (1973).
64. Karkalas, J. and Lal, H.: A comparison of haloperidol with methadone in blocking heroin-withdrawal symptoms: A pilot study. *Int. Pharmacopsychiat.* 8: 248-251 (1973).
65. Lal, H., Pogacar, S., Daly, P. and Puri, S.: Behavioral and neuropathological manifestations of nutritionally induced central nervous system "aging" in the rat. In: Progress in Brain Research, Neurobiological Aspects of Maturation and Aging, Ed. D.H. Ford, Elsevier Publishing Co., Amsterdam, 40: 129-140 (1973).

66. Patel, G. and Lal, H.: Reduction in brain gamma-aminobutyric acid in barbital narcosis and during ethanol withdrawal. *J. Pharmacol. Exp. Ther.* 186: 625-629 (1973).
67. Puri, S.K. and Lal, H.: Effect of dopaminergic stimulation or blockade on morphine-withdrawal aggression. *Psychopharmacol.* 32: 113-120 (1973).
68. Puri, S.K., Reddy, C. and Lal, H.: Blockade of dopaminergic receptors by morphine: Effect of haloperidol, apomorphine or benztrapine. *Res. Comm. Chem. Pathol. Pharmacol.* 5: 389-401 (1973).
69. Roffman, M., Reddy, C. and Lal, H.: Control of morphine-withdrawal hypothermia by conditional stimuli. *Psychopharmacol.* 29: 197-201 (1973).
70. Singh, M. and Lal, H.: The problem of narcotic addiction: Innovative approaches for study and treatment. *J. Bronx State Hosp.* 1: 127-136 (1973).
71. Baumel, I.P., Pitterman, A., Patel, G., DeFeo, J.J. and Lal, H.: Mechanism underlying potentiation of barbiturate action by sodium nitrite in the mouse: the role of methemoglobin-induced hypoxia. *J. Pharmacol. Exp. Therp.* 188: 481-489 (1974).
72. Colpaert, F.C. and Lal, H.: Potentiation of jumping behavior by amino-phylline in mice treated with threshold doses of amphetamine and DOPA. *Res. Comm. Chem. Path. Pharmacol.* 9: 587-590 (1974).
73. Drawbaugh, R. and Lal, H.: Reversal by narcotic antagonist of a narcotic action elicited by a conditional stimulus. *Nature* 247: 65-67 (1974).
74. Fielding, S. and Lal, H.: Preclinical neuropsychopharmacology of neuroleptics: general consideration, In: Neuroleptics, Eds. Fielding, S. and Lal, H. Futura Publishing Co., Mt. Kisco, pp. 53-55 (1974).
75. Fielding, S. and Lal H.: Preclinical neuropharmacology of neuroleptics: Screening tests using higher animal, In: Neuroleptics, Eds: Fielding, S. and Lal, H. Futura Publishing Co., Mt. Kisco, pp. 64-97 (1974).
76. Gianutsos, G., Drawbaugh, R.B., Hynes, M.D. and Lal, H.: Behavioral evidence for dopaminergic supersensitivity after chronic haloperidol. *Life Sci.* 14: 887-898 (1974).
77. Gianutsos, G., Hynes, M.D., Puri, S.K., Drawbaugh, R.B. and Lal, H.: Effect of apomorphine and nigrostriatal lesions on aggression and striatal dopamine turnover during morphine withdrawal: Evidence for dopaminergic supersensitivity in protracted abstinence. *Psychopharmacol.* 34: 37-44 (1974).
78. Hynes, M.D., Anderson, C.B. and Lal, H.: Weight loss and lethality in rats with nigro-striatal bundle lesions: Protection by morphine dependence, haloperidol or alpha-methyl-p-tyrosine. In: Drug Addiction, New Aspects of Analytical and Clinical Toxicology, Eds. Singh, J.M. and Lal, H., Stratton Intercontinental Medical Book Corp., New York., 4: 61-68 (1974).
79. Lal, H. and Fielding. S.: Consideration of the future prospects on the development of new neuroleptics, In. : Neuroleptics, Eds: Fielding, S. and Lal, H., Futura Publishing Co., Mt. Kisco, pp. 33-340 (1974).

80. Puri, S.K. and Lal, H.: Tolerance to behavioral and neurochemical effects of haloperidol and morphine in rats chronically treated with morphine or haloperidol. *Naunyn-Schmiedeberg's Arch. Pharmacol.* 282: 155-170 (1974).
81. Roffman, M., DesJardins, P. and Lal, H.: Conditioned tolerance to hexobarbital. In: Drug Addiction, Neurobiology and Influences on Behavior, Eds. Singh, J.M. and Lal, H.: Stratton Intercontinental Medical Book Corp., New York, 3: 251-258 (1974).
82. Roffman, M. and Lal, H.: Stimulus control of hexobarbital narcosis and metabolism in mice. *J. Pharmacol. Expt. Therap.* 191: 358-369 (1974).
83. Van Hueten, J.M. and Lal, H.: Naloxone-induced facilitation of contractions, spontaneous activity and tolerance to morphine in ileum of morphine-dependent guinea-pigs. *Arch. Int. Pharmacodyn.* 208: 378-383 (1974).
84. Wauquier, A., Niemegeers, C.J.E. and Lal, H.: Differential antagonism by naloxone of inhibitory effects of haloperidol and morphine on brain self-stimulation. *Psychopharmacol.* 37: 303-310 (1974).
85. Brown, W.A., Drawbaugh, R., Gianutsos, G., Lal, H. and Brown, A.M.: Effects of apomorphine on serum prolactin levels in the male rats. *Res. Comm. Pharmacol. Pathol.* 11: 671-674 (1975).
86. Colpaert, F.C., Lal, H., Niemegeers, C.J.E. and Janssen, P.A.J.: Investigations of drug produced and subjectively experienced discriminative stimuli: 1. The fentanyl cue, a tool to investigate subjectively experienced narcotic drug actions. *Life Sci.* 16: 705-716 (1975).
87. Colpaert, F.C., Niemegeers, C.J.E., Lal, H. and Janssen, P.A.J.: Investigations of drug produced and subjectively experienced discriminative stimuli: 2. Loperamide, an antidiarrheal devoid of narcotic cue producing actions. *Life Sci.* 16: 717-728 (1975).
88. Colpaert, F.C., Wauquier, A., Niemegeers, C. and Lal, H.: Reversal by a central anticholinergic drug of pimozide induced inhibition of mouse-jumping in amphetamine-DOPA treated mice. *J. Pharmac. & Pharmacol.* 27: 536-537 (1975).
89. Gianutsos, G., Drawbaugh, R., Hynes, M. and Lal, H.: Narcotic withdrawal syndrome in the rat. In: Methods In Narcotic Research, S. Ehrenpries and E. Niedel, Eds: Marcel Dekker, Inc., New York, pp. 293-309 (1975).
90. Gianutsos, G., Hynes, M.D., Drawbaugh, R.B. and Lal, H.: Paradoxical absence of aggression during naloxone-precipitated morphine withdrawal. *Psychopharmacol.* 43: 43-46 (1975).
91. Gianutsos, G., Hynes, M.D. and Lal, H.: Enhancement of a apomorphine-induced inhibition of striatal dopamine-turnover following chronic haloperidol. *Biochem. Pharmacol.* 24: 581-582 (1975).
92. Gianutsos, G. and Lal, H.: Aggression in mice after p-chloro-amphetamine. *Res. Comm. Chem. Path. Pharmacol.* 10: 379-382 (1975).
93. Gianutsos, G. and Lal, H.: Effect of loperamide, haloperidol and methadone in rats trained to discriminate morphine from saline. *Psychopharmacol.* 41: 267-270 (1975).

94. Hynes, M.D., Anderson, C.D., Gianutsos, G. and Lal, H.: Effects of haloperidol, methyltryosine and morphine on recovery from lesions of lateral hypothalamus. *Pharmacol. Biochem. and Behav.*, 3: 755-759 (1975).
95. Lal, H.: Morphine withdrawal aggression. In: Methods In Narcotic Research, Eds: (S. Ehrenpreis and E. Niedel) Marcel Dekker, Inc., New York, pp. 149-171 (1975).
96. Lal, H.: Narcotic dependence, narcotic action, and dopamine receptors. *Life Sci.*, 17: 483-496 (1975).
97. Lal, H., Colpaert, F.C. and Laduron, P.: Narcotic withdrawal like mouse jumping produced by amphetamine and L-DOPA. *Europ. J. Pharmacol.*, 30: 113-116 (1975).
98. Lal, H., Fielding, S. and Karkalas, J.: Clinical evaluation of antidepressant drugs. In: Antidepressants, Eds: S. Fielding and H. Lal. Futura Publishing Co., New York, pp. 301-318 (1975).
99. Lal, H., Gianutsos, G. and Puri, S.K.: A comparison of narcotic analgesics with neuroleptics on behavioral measures of dopa-minergic activity. *Life Sci.* 17: 29-34 (1975).
100. Miksic, S., Smith, N., Numan, R. and Lal, H.: Acquisition and extinction of a conditional hyperthermic response to a tone paired with morphine administration. *Neuropsychobiol.*, 1: 277-283 (1975).
101. Numan, R., Smith, N. and Lal, H.: A versatile procedure for rapid induction of a narcotic addiction in the rat utilizing intravenous injections. *Physiol. Psychol.*, 3: 261-262 (1975).
102. Patel, G.J., Schatz, R.P., Constantinides, S.M. and Lal, H.: Effect of desipramine and pargyline on brain gamma-aminobutyric acid. *Biochem. Pharmacol.*, 24: 57-60 (1975).
103. Wauquier, A., Niemegeers, C.J.E. and Lal, H.: Differential antagonism by the anticholinergic dextimide of inhibitory effects of haloperidol and fentanyl on brain self-stimulation. *Psychopharmacol.*, 41: 229-236 (1975).
104. Colpaert, F., Wauquier, A., Lal, H. and Niemegeers, C.: Experimental approaches to the evaluation of drug-abuse liability, In: Synthetic Antidiarrheal Drugs, Eds: W. Van Bever and H. Lal, Marcel Dekker, Inc., New York, pp. 251-268 (1976).
105. Drawbaugh, R. and Lal, H.: Effect of pharmacological interference with various neuropathways on blockade of morphine-withdrawal hypothermia by morphine and by conditional stimulus. *Neuropharmacol.*, 15: 375-378 (1976).
106. Gianutsos, G. and Lal, H.: Alteration in the action of cholinergic and anticholinergic drugs after chronic haloperidol: Indirect evidence for cholinergic hyposensitivity. *Life Sci.*, 18: 515-520 (1976).
107. Gianutsos, G. and Lal, H.: Selective interaction of drugs with discriminable stimuli associated with narcotic action. *Life Sci.*, 19: 91-98 (1976).
108. Gianutsos, G. and Lal, H.: Blockade of apomorphine-induced aggression by morphine or neuroleptics: differential alteration by antimuscarinics and naloxone. *Pharmacol. Biochem. & Behav.*, 4: 639-642 (1976).
109. Gianutsos, G. and Lal, H.: Modification of apomorphine aggression by changing central cholinergic activity in rats. *Neuropharmacol.*, 16: 7-10 (1976).

110. Gianutsos, G. and Lal, H.: Drug-induced aggression. *Current Development Psychopharmacol.*, 3: 199-220 (1976).
111. Hynes, M.D., Gianutsos, G. and Lal, H.: Effects of cholinergic agonists and antagonists on morphine-withdrawal syndrome. *Psychopharmacol.*, 49: 191-195 (1976).
112. Lal, H.: Facts and falacies of addiction liability and abuse potential, In: Synthetic Antidiarrheal Drugs, Eds: W. Van Bever and H. Lal, Marcel Dekker, Inc., New York, pp. 235-250 (1976).
113. Lal, H.: Pathophysiology of diarrhea, In: Synthetic Antidiarrheal Drugs, Eds: W. Van Bever and H. Lal, Marcel Dekker, Inc., New York, pp. 7-22 (1976).
114. Lal, H.: General characteristics of discriminative stimuli produced by drugs. *Psychopharmacol Commun.*, 2: 305-311, (1976).
115. Lal, H. and Gianutsos, G.: Discriminable stimuli produced by narcotic analgesics. *Psychopharmacol. Commun.*, 2: 311-314 (1976).
116. Lal, H., Marky, M. and Fielding, S.: Effect of neuroleptic drugs on mouse jumping induced by L-DOPA in amphetamine treated mice. *Neuropharmacol.*, 15: 669-671 (1976).
117. Lal, H., Miksic, S., Drawbaugh, R., Numan, R. and Smith, N.: Alleviation of narcotic withdrawal syndrome by conditional stimuli. *Pav. J. Biol. Res.*, 11: 251-262 (1976).
118. Lal, H., Miksic, S. and Smith, N.: Naloxone antagonism of conditioned hyperthermia: An evidence for release of endogenous opioid. *Life Sci.*, 18: 971-976 (1976).
119. Lal, H. and Numan, R.: Blockade of morphine-withdrawal body shakes by haloperidol. *Life Sci.*, 18: 163-168 (1976).
120. Lal, H., Puri, S. and Volicer, L.: A comparison between narcotics and neuroleptics: Effects on striatal dopamine turnover, cyclic AMP, and adenylate cyclase, In: Tissue Responses to Addictive Drugs, Eds.: D. Ford and D. Clouet, Spectrum Publications, New York, pp. 187-207 (1976).
121. Miksic, S., Smith, N. and Lal, H.: Conditioning of discriminable stimuli produced by morphine. *Psychopharmacol. Comm.*, 2: 357-367 (1976).
122. Miksic, S., Smith, N. and Lal, H.: Reduction of morphine-withdrawal aggression by conditional social stimuli. *Psychopharmacol.*, 48: 115-117 (1976).
123. Numan, R., Banerjee, U., Smith, N. and Lal, H.: Secondary reinforcement property of a stimulus paired with morphine administration. *Pharmacol. Biochem. Behav.*, 5: 395-399 (1976).
124. Reyntjens, A. and Lal, H.: Modern antidiarrheals in Medical Practice, In: Synthetic Antidiarrheal Drugs, Eds., W. Van Bever and H. Lal, Marcel Dekker, Inc., New York, pp. 205-234 (1976).
125. Shah, H.C. and Lal, H.: Effects of 1,1,1-trichlorethane administered by different routes and in different solvents on barbiturate hypnosis and metabolism in mice. *J. Toxicol. Environ. Health*, 1: 807-816 (1976).
126. Wauquier, A., Niemegeers, C.J.E. and Lal, H.: Selective reversal of haloperidol induced inhibitor of brain self-stimulation by the anticholinergic drug dexetimide. In: Drugs and



- Central Synaptic Transmission, Eds.: P.B. Bradley and B.N. Dhawan, University Park Press, Baltimore, pp. 201-209 (1976)
127. Lal, H.: Drug-induced discriminable stimuli: Past research and future perspectives, In: Discriminative Stimulus Properties of Drugs, Ed: H. Lal, Plenum Press, New York, pp. 207-232 (1977).
  128. Lal, H., Brown, W., Drawbaugh, R., Hynes, M. and Brown, G.: Enhanced prolactin inhibition following chronic treatment with haloperidol. *Life Sci.*, 20: 101-106 (1977).
  129. Lal, H. and Ehrenpries, S.: Implications of basic and clinical research in drug abuse, In: Drug Abuse; Clinical and Basic Aspects, Eds. S.N. Bradham and S.N. Dutta, C.V. Mosby Co., St. Louis, MO., pp. 547-570 (1977).
  130. Lal, H., Gianutsos, G. and Miksic, S.: Discriminable stimuli produced by narcotic drugs, In: Discriminative Stimulus Properties of Drugs, Ed.: H. Lal, Plenum Press, New York, pp. 23-46 (1977).
  131. Lal, H. and Hynes, M.D.: Interaction of naloxone with butyrophenone-induced blockade of withdrawal-shakes in the morphine dependent rat. *NIDA Monograph*, 39 pp. 328-346 (1977).
  132. Lal, H. Kaplan, L., Numan, R. and Valentino, D.: Acquisition and extinction of operant responding for intravenous injections of Fentanyl in the rat. *Comm. Psychopharmacol.*, 1: 207-212 (1977).
  133. Miksic, S. and Lal, H.: Tolerance to morphine-produced discriminative stimuli and analgesia. *Psychopharmacol.*, 54: 217-221 (1977).
  134. Puri, S.K., Volicer, L. and Lal, H.: Effect of apomorphine on dopamine turnover and adenosine 3',5'-monophosphate content in striatum of morphine dependent rats. *Neuropharmacol.*, 16: 205-209 (1977).
  135. Fielding, S., Wilker, J., Hynes, M., Szewczak, M., Novick, W. and Lal, H.: A comparison of clonidine with morphine for antinociceptive and antiwithdrawal actions. *J. Pharmacol. Exp. Therap.*, 207 : 899-905 (1978).
  136. Fielding, S. and Lal, H.: Behavioral Pharmacology of Neuroleptics, In: Handbook of Psychopharmacology, Eds. L. Iverson and S. Snyder, Plenum Press, New York, 10: 91-148 (1978).
  137. Gianutsos, G., Hynes, M.D., Drawbaugh, R. and Lal, H.: Similarities and contrasts between the effects of amphetamine and apomorphine in rats chronically treated with haloperidol. *Prog. Neuropsychopharmacol.*, 2: 161-167 (1978).
  138. Gianutsos, G. and Lal, H.: Narcotic analgesics and aggression. *Modern Prob. Pharmacopsychiat.*, 13: 114-138 (1978).
  139. Hynes, M.D., McCarten, M., Shearman, G. and Lal, H.: Differential reduction of morphine-withdrawal body-shakes by butaclamol enantiomers., *Life Sci.*, 22: 133-136 (1978).

140. Hynes, M.D., Valentino, D. and Lal, H.: Role of dopaminergic systems in tolerance to neuroleptic-induced inhibition of food consumption. *Neuropharmacol.*, 17: 507-510 (1978).
141. Lal, H. and Hynes, M.D.: Effectiveness of butyrophenones and related drugs in narcotic withdrawal. In: Neuropsychopharmacology Eds. P. Deniker, C. Radouco-Thomas, A. Villeneuve, Pergamon Press, New York, pp. 289-295 (1978).
142. Lal, H. and Miksic, S.: A comparison of discriminative stimuli produced by naloxone, cyclazocine and morphine in the rat. In: Stimulus Properties of Drugs: Ten Years of Progress. Eds.: R. Colpaert and J. Rosencrans, Elsevier, Amsterdam, pp. 177-180 (1978).
143. Lal, H., Miksic, S. and Drawbaugh, R.: Influence of environmental stimuli associated with narcotic administration on narcotic actions and dependence. In: Factors Affecting the Action of Narcotics, Eds: M. Adler, L. Manara & R. Samanin, Raven Press, New York, pp. 643-668 (1978).
144. Lal, H., Spaulding, T. and Fielding, S.: Swim-stress induced analgesia and lack of its naloxone antagonism. *Comm. Psychopharmacol.*, 2: 263-266 (1978).
145. Miksic, S., Shearman, G. and Lal, H.: Generalization study with some narcotic and non-narcotic drugs in rats trained for morphine-saline discrimination. *Psychopharmacol.*, 60: 103-104 (1978).
146. Nandy, K. and Lal, H.: Neuronal lipofuscin and learning deficits in aging mammals. In: Neuropsychopharmacology, Eds. P. Deniker, C. Radouco-Thomas, A. Villeneuve, Pergamon Press, New York, pp. 1633-1645 (1978).
147. Shearman, G. and Lal, H.: Discriminative stimulus properties of pentylenetetrazol in the rat. In: Stimulus Properties of Drugs: Ten Years of Progress. Eds.: F.C. Colpaert and J. Rosencrans, Elsevier, Amsterdam, pp. 177-180 (1978).
148. Shearman, G. and Lal, H.: Differential responding controlled by the discriminative stimulus produced by convulsant drugs in the rat. *Psychopharmacol.*, 58: 10 (1978).
149. Shearman, G., Miksic, S. and Lal, H.: Discriminative stimulus properties of desipramine. *Neuropharmacol.*, 17: 1045-1048 (1978).
150. Fielding, S. and Lal, H.: Anxiolytics: An introduction, In: Anxiolytics, Eds.: S. Fielding and H. Lal, Futura Publishing Co., New York, pp. XXIII-XXVI (1979).
151. Fielding, S. and Lal, H.: Future prospects of anxiolytic drugs, In: Anxiolytics, Eds.: S. Fielding and H. Lal, Futura Publishing Co., New York, pp. 403-412 (1979).
152. Head, M., Lal, H., Puri, S., Mantione, C. and Valentino, D.: Enhancement of morphine analgesia after acute and chronic haloperidol. *Life Sci.*, 24: 2037-2044 (1979).
153. Lal, H.: Interoceptive stimuli as tools of drug development. *Drug Develop. Indust. Pharmacol.*, 5: 133-149 (1979).
154. Lal, H. and Fielding, S.: Drug Discrimination: A new procedure to evaluate drugs. In: Anxiolytics, Eds.: S. Fielding and H. Lal, Futura Publishing Co., New York, pp. 83-94 (1979).

155. Lal, H. and Nandy, K.: Future drugs against senescence-related brain dysfunctions. In: New Frontiers in Psychotropic Drug Research, Eds.: S. Fielding and R. C. Effland, Futura Publishing Co., Mount Kisco, New York, pp. 51-74 (1979).
156. McCarten, M.D. and Lal, H.: Attenuation of the discriminative stimulus strength of morphine by haloperidol. *Neuropharmacol.*, 18: 465-467 (1979).
157. Potthof, P., Valentino, D. and Lal, H.: Attenuation of morphine analgesia by lesions of the preoptic fore-brain region in the rat. *Life Sci.*, 24: 421-424 (1979).
158. Shearman, G.T. and Lal, H.: Discriminative stimulus properties of pentylentetrazol and bemegride: some generalization and antagonism tests. *Psychopharmacol.* 64: 315-319 (1979).
159. Spaulding, T.C., Fielding, S., Venafro, J.J. and Lal, H.: Antinociceptive activity of clonidine and its potentiation of morphine analgesia. *Europ. J. Pharmacol.*, 58: 19-25 (1979).
160. Lal, H. and Carroll, T.: Alterations in brain neurotransmitter systems related to senescence In: Geriatric Psychopharmacology, Ed. K. Nandy, p. 3-15 Elsevier/North Holland, New York, New York, (1979).
161. Shearman, G., Miksic, S. and Lal, H.: Lack of tolerance development to benzodiazepines in antagonism of the pentylentetrazol discriminative stimulus. *Pharmacol. Biochem. Behav.*, 10: 795-797, (1979).
162. Fielding, S. and Lal, H.: Clonidine: New research in psychotropic drug pharmacology. *Medicinal Res. Rev.*, 1: 97-123 (1980).
163. Hynes, M.D., Shearman, G.T. and Lal, H.: Alterations in brain GABA fail to influence morphine withdrawal body shakes. *Brain Res. Bull.*, 5: 805-808 (1980).
164. Lal, H. and Gianutsos, G.: Alterations in neuropharmacology of apomorphine by chronic treatment with haloperidol, In: Tardive Dyskinesia, Research and Treatment, Eds: W. Fann, R. Smith, J. Uavis, and F. Domino, SP Medical & Scientific Books, New York, pp. 51-64 (1980).
165. Lal, H., Numan, R. and Smith, N.: Naloxone antagonism of morphine withdrawal body shakes by auditory conditional stimulus. In: Endogenous and Exogenous Opiate Agonists and Antagonists. Ed: E. Way, Pergamon Press, New York, pp. 293-298 (1980).
166. Lal, H. and Shearman, G.: Interoceptive discriminative stimuli in the development of CNS drugs and a case of an animal model of anxiety. *Ann. Rep. Med. Chem.*, 15: 51-58 (1980).
167. Lal, H., Shearman, G.T., Fielding, S., Dunn, R., Kruse, H. and Theurer, K.: Evidence that GABA mechanisms mediate the anxiolytic action of benzodiazepines: A study with valproic acid. *Neuropharmacol.*, 19: 785-789 (1980).
168. Lal, H., Shearman, G.T., Fielding, S., Dunn, R., Kruse, H. and Theurer, K.: Effect of valproic acid on anxiety-related behaviors in the rat. *Brain Res. Bull.*, 5: 575-577 (1980).
169. McCarten, M. and Lal, H.: Generalization study with some narcotic and non-narcotic psychoactive drugs in rats trained to discriminate between cyclazocine and saline. In:

- Endogenous and Exogenous Opiate Agonists and Antagonists, Eds.: E. Way, Pergamon Press, New York, pp. 439-442 (1980).
170. Miksic, S., Shearman, G. and Lal, H.: Differential enhancement of narcotic discrimination and analgesia by amphetamine and haloperidol. An evidence for distinct mechanisms underlying analgesia and euphoria. *Sub. and Alc. Actions/Misuse*, 1: 281-285 (1980).
171. Miksic, S., Shearman, G.T. and Lal, H.: Discrimination of the interoceptive stimulus produced by phenylquinone: A measure of the affective component of pain. In: Endogenous and Exogenous Opiate Agonists and Antagonists, Ed. E. Way, Pergamon Press, New York, pp. 435-438 (1980).
172. Resnick, R.B., Washton, A.M. and Lal, H.: Reversal of clonidine-induced hypotension by opioid antagonists in man. In: Endogenous and Exogenous Opiate Agonists and Antagonists. Ed: E. Way, Pergamon Press, New York, pp. 565-566 (1980).
173. Schatz, R. and Lal, H.: Protection against hyperbaric oxygen toxicity by pargyline, succinic acid and ascorbic acid. Role of brain GABA and brain ammonia. *Brain Res. Bull.*, 5: 781-788 (1980).
174. Shearman, G.T. and Lal, H.: Generalization and antagonism studies with convulsant, GABAergic and anticonvulsant drugs in rats trained to discriminate pentylentetrazol from saline. *Neuropharmacol.*, 19: 473-479 (1980).
175. Shearman, G.T., Lal, H. and Ursillo, R.C.: Effectiveness of lofexidine in blocking morphine-withdrawal signs in the rat. *Pharmacol. Biochem. Behav.*, 12: 573-575 (1980).
176. Singh, M.M., Nasrallah, H.A., Lal, H., Pitman, R.K., Becker, R.E., Kucharski, T., Karkalas, J. and Fox, R.: Treatment of tardive dyskinesia with diazepam: Indirect evidence of involvement of limbic, possibly GABA-ergic mechanisms. *Brain Res. Bull.*, 5: 673-680 (1980).
177. Fielding, S., Spaulding, T.C. and Lal, H.: Antinociceptive actions of clonidine. *Prog. Clin. and Biol. Res.*, 71: 225-242 (1981).
178. Hynes, M.D. and Lal, H.: Chronic haloperidol treatment fails to alter the anorexic action of dopaminergic agonist and cholinergic drugs. *Prog. Neuropharmacol.*, 5: 271-275 (1981).
179. Hynes, M. and Lal, H.: A comparison of butyrophenone and tricyclic neuroleptics in blocking withdrawal signs in rats continuously infused with morphine. *Drug Dev. Res.*, 1: 199-209 (1981).
180. Lal, H., Bennett, D.A., Shearman, G.T., McCarten, Murphy, R. and Angeja, A.: Effectiveness of naltrexone in blocking narcotic withdrawal signs through non-narcotic mechanisms. *J. Clin. Pharmacol.*, 21: 261-266 (1981).
181. Lal, H. and Fielding, S.: Psychopharmacology of clonidine. *Prog. Clin. and Biol. Res.*, 71: 1-3 (1981).
182. Lal, H., Mann, P.A., Shearman, G.T. and Lippa, A.S.: Effects of acute and chronic pentylentetrazol treatment on benzodiazepine and cholinergic receptor binding in rat brain. *Eur. J. Pharmacol.*, 75: 115-119 (1981).

183. Lal, H. and Shearman, G.T.: Psychotropic actions of clonidine. *Prog. Clin. and Biol. Res.*, 71: 99-145 (1981).
184. Lal, H. and Shearman, G.T.: A comparison of the antidiarrheal and some other pharmacological effects of clonidine, lidamidine, and loperamide in the rat. *Drug Dev. Res.*, 1: 37-41 (1981).
185. Miksic, S., Shearman, G. and Lal, H.: Discriminative response control by naloxone in morphine pretreated rats. *Psychopharmacol.*, 72: 179-184 (1981).
186. Numan, R. and Lal, H.: Effect of morphine on rectal temperature after acute and chronic treatment in the rat. *Prog. Neuropsychopharmacol.*, 5: 363-371 (1981).
187. Shearman, G.T., Cafaro, M.P., Lal, H. and Howard J.L.: Saccharin-taste discrimination by two lever choice: a rat bioassay for sweeteners. *Drug Dev. Res.*, 1: 145-150 (1981).
188. Shearman, G., Hynes, M. and Lal, H.: Self-administration of clonidine by the rat. *Prog. Clin. and Biol. Res.*, 71: 259-276 (1981).
189. Shearman, G.T. and Lal, H.: Non-narcotic anti-diarrheal action of clonidine and lofexidine in the rat. *J. Clin. Pharmacol.*, 21: 16-19 (1981).
190. Shearman, G. and Lal, H.: Discriminative stimulus properties of cocaine related to an anxiogenic action. *Prog. Neuropsychopharmacol.*, 5: 57-63 (1981).
191. Becker, R.E., Lal, H., Alexander, P., Karkalas, J. and Kucharski, T.: Successful treatment of ballism with diazepam. *Drug Dev. Res.*, 2: 363-366 (1982).
192. Bennett, D., DeFeo, J., Elko, E. and Lal, H.: Naloxone-induced reversal of clonidine, but not hydralazine, hypotension. *Drug Dev. Res.*, 2: 175-179 (1982).
193. Bennett, D., Geyer, H., Shearman, G., Dutta, P., Brugger, S., Fielding, S. and Lal, H.: Comparison of trimethadione and chlor diazepoxide with respect to actions in animal models of anxiety and benzodiazepine receptor binding. *Neuropharmacol.*, 21: 1175-1179 (1982).
194. Bennett, D.A. and Lal, H.: Discriminative stimuli produced by clonidine: An investigation of the possible relationship to adrenoceptor stimulation and hypotension. *J. Pharmac. Exp. Ther.*, 223: 642-648 (1982).
195. Fielding, S. and Lal, H.: A review of the animal pharmacology of clobazam: An update. *Drug Dev. Res.*, 2: 17-21 (1982).
196. Gherezghiher, T. and Lal, H.: RO 15-1788 selectively reverses antagonism of pentylenetetrazol-induced discriminative stimuli by benzodiazepines but not by barbiturates. *Life Sci.*, 31: 2955-2960 (1982).
197. Lal, H., Mann, P., Gianforcaro, R. and Nandy, K.: Senescence related changes in brain diazepam binding and motor performance. *Subs. and Alc. Actions/Misuse*, 3: 191-196 (1982).
198. Lal, H., Shearman, G.T. and Cafaro, M.P.: Discrimination of sucrose-taste by the rat as a potential bioassay for sweeteners. *Drug Nutrient Interactions*, 1: 119-124 (1982).

199. Lal, H. and Shearman, G.: Attenuation of chemically induced anxiety as a novel method for evaluating anxiolytic drugs: A comparison of clobazam & other benzodiazepines. *Drug Dev. Res.*, 1: 127-134 (1982).
200. Singh, M., Becker, R., Pitman, R., Nasrallah, H., Lal, H., Dufresne, R., Weber, S. and McCalley-Whitters, M.: Diazepam-induced changes in tardive dyskinesia: Suggestions for a new conceptual model. *Biol. Psychiat.*, 17: 729-742 (1982).
201. Lal, H., Singh, M., Becker, R., Nasrallah, H. and Pitman, R.: Long term alleviation of tardive dyskinesia with diazepam. *Drug Dev. Res.* 2: 502 (1982).
202. Shearman, G.T. and Lal, H.: Psychopharmacology of clonidine, In: Current Developments in Psychopharmacology, Ed: W. Essman and L. Vallzelli, Clinical Application, Spectrum Publications, New York, 221-255 (1982).
203. Singh, M. and Lal, H.: Central cholinergic mechanisms, neuroleptic action and schizophrenia. In: Neuropharmacology, Ed: W. Essman and L. Vallzelli, Clinical Application, Spectrum Publications, New York, 337-389 (1982).
204. Lal, H. and Fielding, S.: Clonidine in the treatment of narcotic addiction. *Trends in Pharm.*, 4: 70-71 (1983).
205. Emmett-Oglesby, M.W., Wurst, M. and Lal, H.: Discriminative stimulus properties of a small dose of cocaine. *Neuropharmacol.*, 22: 97-101 (1983).
206. Lal, H., Gherezghiher, T. and Carney, J.: Ineffectiveness of a purine analogue, EMD-29422, in two animal tests of anxiolytic action. *Drug Dev. Res.*, 3: 75-79 (1983).
207. Lal, H. and Emmett-Oglesby, M.W.: Behavioral analogues of anxiety. *Neuropharmacol.*, 22: 1423-1441 (1983).
208. Singh, M., Becker, R.E., Pitman, R.K., Nasrallah, H.A. and Lal, H.: Sustained improvement in tardive dyskinesia with diazepam: Indirect evidence for corticolimbic involvement. *Brain Res. Bull.*, 11: 179-185 (1983).
209. Becker, R.E. and Lal, H.: Pharmacological approaches to treatment of hemiballism and hermichorea. *Brain Res. Bull.*, 11: 187-189 (1983).
210. Spencer, D.G. and Lal, H.: Discriminative stimulus properties of L-phenylisopropyl adenosine: blockade by caffeine and generalization to 2-chloradenosine. *Life Sci.*, 32: 2329-2333 (1983).
211. Emmett-Oglesby, M.W., Spencer, D.G., Jr., Elmesallamy, F. and Lal, H.: The pentylenetetrazol model of anxiety detects withdrawal from diazepam in rats. *Life Sci.* 33: 161-168 (1983).
212. Nandy, K., Lal, H., Bennett, M. and Bennett, D.: Correlated between a learning disorder and elevated brain-reactive antibodies in aged C57BL/6 and young NZB mice. *Life Sci.*, 33: 1499-1503 (1983).
213. Spencer, D.G. and Lal, H.: CGS 9896, A chloro-derivative of the diazepam antagonist, CGS 8216, exhibits anxiolytic activity in the pentylenetetrazol-saline discrimination test. *Drug Dev. Res.*, 3: 265-370 (1983).

- 
214. Horvat, A. and Lal, H.: Drug nutrient interactions. *Anal. of Osteo. Med.*, 11: 381-394 (1983).
  215. Emmett-Oglesby, M.W., Spencer, D.G., Jr., Lewis, M., Elmesallamy, F. and Lal, H.: Anxiogenic aspects of diazepam withdrawal can be detected in animals. *Eur. J. Pharmacol.*, 92: 127-130 (1983).
  216. Spencer, D.G., Jr. and Lal, H.: Effects of anticholinergic drugs on learning and memory. *Drug Dev. Res.*, 3: 489-502 (1983).
  217. Emmett-Oglesby, M.W., Spencer, D.G., Jr., Wood, D.M. and Lal, H.: Task-specific tolerance to amphetamine: Dependence on environmental stimuli. *Neuropharmacol.*, 23: 563-568 (1983).
  218. Spencer, D.G., Jr., Gherezghiher, T. and Lal, H.: Inosine and N6-substituted adenosine analogs lack anxiolytic efficacy in the pentylenetetrazol discrimination model of anxiety. *Drug Dev. Res.*, 4: 201-206 (1984).
  219. Lal, H. and Fielding, S.: Antagonism of discriminative stimuli produced by anxiogenic drugs as a novel approach to bioassay anxiolytics. *Drug Dev. Res.*, 4: 2-21 (1984).
  220. Lal, H. and Yaden, S.: Discriminative stimuli produced by clonidine in spontaneously hypertensive rats: generalization to antihypertensive drugs with different mechanisms of action. *J. Pharmac. Exp. Therp.* 232: 33-39 (1985).
  221. Yaden, S., Palmer, R.T., Elko, E. and Lal, H.: Comparative activity of antihypertensive drugs as determined by the indirect measurement of blood pressure. *Drug Dev. Res.*, 5: 129-136 (1985).
  222. Spencer, D.G., Jr. and Lal, H.: Central cholinergic involvement in learning and memory In: Central Cholinergic Mechanisms and Adaptive Dysfunctions (Eds: M. Singh, D. Warburton and H. Lal) Plenum Press, New York pp. 141-160 (1985).
  223. Retz, K.C. and Lal, H.: Cholinergic neuropsychopharmacology and neuropathology of Alzheimer's Disease. In: Central Cholinergic Mechanisms and Adaptive Dysfunctions(Eds: M. Singh, D. Warburton and H. Lal) (1985) Plenum Press, New York pp. 335-352.
  224. Wood, D.M., Lal, H. and Emmett-Oglesby, M.W.: Acquisition and recovery of tolerance to the discriminative stimulus properties of cocaine. *Neuropharmacol.*, 23: 1419-1423 (1985).
  225. Emmett-Oglesby, M.W., Harris, C.M., Lane, J.D. and Lal, H.: Withdrawal from morphine generalizes to penetylenetetrazol. *Neuropeptides*, 5: 37-41 (1985).
  226. Singh, M., Warburton, D. and Lal, H. (Editors) : Central Cholinergic Mechanisms and Adaptive Dysfunctions. pp. 408, Plenum Press, New York. (1985).
  227. Becker, R.E., Dufresne, R.L., Blitzer, R. and Lal, H.: Safety and efficacy of bupropion, a novel anti-depressant. *Drug Dev. Res.*, 6: 39-46 (1985).
  228. LaBella, F.S. and Lal, H.: Endocoids: Prospects and strategies for their discovery. In: Endocoids (Eds. H. Lal, F.S. LaBella, and J.D. Lane ) Alan R. Liss, Inc., New York, pp. 17-27 (1985).

- 
229. Lal, H., Forster, M.J. and Nandy, K.: Immunological factors related to cognitive/behavioral dysfunctions in aging. In: Senile Dementia of the Alzheimer Type (Eds. J. Traber and W. Gispen) Adv. Appl. Neurological Sci. 2: 343-344 (1985).
230. Lal, H. and Harris, C.M.: Interoceptive stimuli produced by an anxiogenic drug are mimicked by benzodiazepine antagonists in rats pretreated with isoniazid. Neuropharm., 24: 677-679 (1985).
231. Wood, D.M., Lal, H., Yaden, S. and Emmett-Oglesby, M.W.: One-way generalization of clonidine to the discriminative stimulus produced by cocaine. Pharm. Biochem. Behav., 23: 529-533 (1985).
232. Lal, H.: Antidiarrheal Agents, In: Medicine: Pharmacology Principles and Practice. Textbook Eds. S. Pradhan, R. Maichel, S. Dutta. S P Publishers, Inc., Bethesda, pp. 702-706 (1986).
233. Lal, H. and Forster, M.J.: Cognitive disorders related to immune dysfunction: Novel animal models for drug development. Drug Dev. Res., 7:1-14 (1986).
234. Forster, M.J., Retz, K.C., Popper, M.D. and Lal, H.: Age-dependent enhancement of diazepam sensitivity is accelerated in New Zealand Black mice. Life Sci., 38: 1433-1439 (1986).
235. Lal, H., Bennett, D., Bennett, M., Forster, M.J. and Nandy, K.: Learning deficits occur in young mice following transfer of immunity from senescent mice. Life Sci., 39:507-512 (1986).
236. Harris, C.M., Emmett-Oglesby, M.W., Robinson, N.G. and Lal, H.: Withdrawal from chronic nicotine substitutes partially for the interoceptive stimulus produced by pentylenetetrazol (PTZ). Psychopharm., 90:85-90 (1986).
237. Harris, C.M., Springfield, A.C., Ranschaert, E. Jr. and Lal, H.: Lethal drug interaction: Isoniazid and methylxanthines. Drug Dev. Res., 9:299-304 (1986).
238. Spencer, D.G., Jr., Humphries, K., Mathis, D. and Lal, H.: Behavioral impairments related to cognitive dysfunction in the NZB mouse: potential for an auto-immunological animal model for senile dementia. Behav. Neurosc., 100:353-358 (1986)
239. Emmett-Oglesby, M.W., Mathis, D.A. and Lal, H.: Diazepam tolerance and withdrawal assessed in an animal model of subjective drug effects. Drug Dev. Res., 11: 144-154 (1987).
240. Forster, M.J., Popper, M.D., Paul, S.K., Lal, H., and Retz, K.C.: Memory for discriminated escape learning: Pharmacologic enhancement and disruption. Drug Dev. Res., 11: 97-106 (1987).
241. Harris, C.M., Benjamin, D. and Lal, H.: Anxiety- Like subjective effect of ethanol antagonist RO 15-4513 demonstrated in pentylenetetrazol discrimination. Neuropharm., 26:1545-1547 (1987).
242. Harris, C.M., Wood, D.M., Lal, H. and Emmett-Oglesby, M.W.: A Method to shorten the training phase of drug discrimination. Psychopharm., 93: 435-436 (1987).



- 
243. Idemudia, S.O, Mathis, D.A. and Lal, H.: Enhancement of a diazepam withdrawal symptom by GABA antagonists. *Neuropharm.*, 26: 1739-1743 (1987).
  244. Karkalas, J. and Lal, H.: Anxiolytic efficacy and safety evaluation of high dosage oxazepam in patients with severe anxiety. *Drug Dev. Res.*, 10:93-96 (1987).
  245. Mathis, D.A., Emmett-Oglesby, M.W., Harris, D. M. and Lal, H: Quantal nature of generalization and acquisition responding by rats in a drug discrimination task. *Psych. Rec.*, 37:161-165 (1987).
  246. Retz, K.C., Forster, M.J., Frantz, N. and Lal, H.: Differences in behavioral responses to oxotremorine and physostigmine in New Zealand Black (NZB/B1NJ) and C57BL/6 mice. *Neuropharm.*, 26:445-452 (1987).
  247. Retz, K.C., Trimmer, C.K., Forster, M.J. and Lal, H.: Motor responses of autoimmune NZB/BINJ and C57BL/6Nnia mice to arecoline and nicotine. *Pharmacol. Biochem. Beh.* 28: 275-282 (1987).
  248. Wood, D.M. and Lal, H.: Anxiogenic properties of cocaine withdrawal. *Life Sci.*, 41: 1431-1436 (1987).
  249. Wood, D.M., Ranschaert, E.R. and Lal, H.: Interoceptive Stimuli produced by cocaine are blocked during diazepam withdrawal. *Drug. Dev. Res.*, 11:45-51 (1987).
  250. Forster, M.J., Popper, M.D., Retz, K.C. and Lal: Age differences in acquisition and retention of one-way avoidance learning in C57BL/6Nnia and autoimmune mice. *Behav. Neural Biol.*, 49: 139-151, (1988).
  251. Harris, C.M., Idemudia, S.O, Benjamin, D., Bhadra, S. and Lal, H.: Withdrawal from ingested diazepam produces a pentylenetetrazol-like stimulus in rats. *Drug Dev. Res.*, 12: 71-76 (1988).
  252. Spenser, D.G., Yaden, S. and Lal, H.: Behavioral and physiological detection of classically conditioned blood pressure reduction. *Psychopharm.*, 95: 25-28 (1988).
  253. Idemudia, S. and Lal, H.: Baclofen does not block interoceptive discriminative stimulus produced by pentylenetetrazol. *Drug Dev. Res.*, 14: 85-90 (1988).
  254. Harris, C.M. and Lal,H.: Central nervous system effects of the Imidazobenzodiazepine RO 15-4513. *Drug Dev. Res.*, 13: 187-203 (1988).
  255. Forster, M.J., Retz, K.C. and Lal, H.: Senescence-Like learning/retention deficits in autoimmune Mice: Reversal by physostigmine. In: Current Research in Alzheimer Therapy, E. Giacobini and R. Becker (Eds.). New York: Taylor and Francis, pp.53-61 (1988).
  256. Lal, H, Forster, M.J., Retz, K.C. and Reisberg B.: Immune dysfunctions in Alzheimer's disease and other cognitive disorders: New Targets of drug discovery. *Drug Dev. Res.*, 15: 95-99 (1988).
  257. Retz, K.C., Forster, M.J. & Lal, H.: Behavioral approach to probe altered neurotransmission in autoimmune NZB/BINJ mice: Implications for investigations of cognitive dysfunctions. *Drug Dev. Res.*, 15: 275-295 (1988).

- 
258. Harris, C.M., Emmett-Oglesby, M.W., Mathis, D.M. and Lal, H.: Quantal detection and homogeneous sensitivity in a pentylenetetrazol discrimination. *Psychopharm.*, 94:183-187 (1988).
259. Elko, E.E., Tran, T., Lal, H. and Yorio, T.: Ocular hypotensive effects of lofexidine, an  $\alpha_2$ -adrenoreceptor agonist. *Drug Dev. Res.*, 14: 169-175 (1988).
260. Mahapatra, R., Mahapatra, D., Hunter, K.W. Paul, S.K. and Lal, H.: Metoprolol Monotherapy in the treatment of mild hypertension. *Drug Dev. Res.*, 15: 47-54 (1988).
261. Lal, H. and Forster, M.J.: Autoimmunity and age-related cognitive decline. *Neurobiol. of Aging*, 9: 733-742 (1988).
262. Forster, M.J., Retz, K.C. and Lal, H.: Learning and memory deficits associated with autoimmunity: Significance in aging and Alzheimer's disease. *Drug Dev. Res.*, 15: 253-273 (1988).
263. Lal, H., Harris, C.M., Benjamin, D., Springfield, A.C., Bhadra, S. and Emmett-Oglesby, M.W.: Characterization of a pentylenetetrazol-like interoceptive stimulus produced by ethanol withdrawal. *J. Pharm. Exp. Ther.*, 247: 508-518 (1988).
264. Kumar, B.A., Forster, M.J. and Lal, H.: CGS 8216, a benzodiazepine receptor antagonist enhances learning and memory in mice. *Brain Res.*, 460: 195-198 (1988).
265. Emmett-Oglesby, M.W., Mathis, D.A., Harris, C.M., Idemudia, S.O. and Lal, H.: Withdrawal from diazepam substitutes for the discriminative stimulus properties of pentylenetetrazol. *J. Pharm. & Exp. Ther.*, 244: 892-897 (1988).
266. Benjamin, D., Emmett-Oglesby, M.W. and Lal, H.: Modulation of the pentylenetetrazol discriminative stimulus by centrally administered drugs. *Neuropharm.*, 26: 1717-1731 (1988).
267. Lal, H., Kumar, B. and Forster, M.J.: Enhancement of learning and memory in mice by a benzodiazepine antagonist. *FASEB J.*, 2: 2702-2711 (1988).
268. Wood, D.M., Laraby, P.K. and Lal, H.: A Pentylenetetrazol-Like stimulus during cocaine withdrawal: Blockade by diazepam but not haloperidol. *Drug Dev. Res.*, 16: 269-276 (1989)
269. Harris, C.M., Elkhayat, I.S., Benjamin, D., Bhadra, S. and Lal, H.: CGS 9896 blocks the pentylenetetrazol-like effect of withdrawal from chronic ethanol. *Drug Dev. Res.* 16: 277-283 (1989).
270. Emmett-Oglesby, M.W., Lal, H. and Bennett, D.A.: Stimulus Properties of Drugs: Proceedings of the 1988 International Meeting. *Drug Dev. Res.* 16: vii-ix (1989).
271. Idemudia, S.O. and Lal, H.: A pentylenetetrazol-like stimulus is produced in rats during withdrawal from ingested chlordiazepoxide. *Drug Dev. Res.*, 16: 23-29 (1989).
272. Overton, D.A. and Lal, H.: Discriminative and contextual stimuli produced by drugs: History of discussion groups and meetings. *Drug Dev. Res.* 16: 97-100 (1989).
273. Idemudia, S.O., Bhadra, S. and Lal, H.: The pentylenetetrazol-like interoceptive stimulus produced by ethanol withdrawal is potentiated by bicuculline and picrotoxin. *Neuropsychopharm.* 2: 115-122 (1989).

- 
274. Lal, H and Forster, M. J.: Flumazenil improves active avoidance performance in aging NZB/BINJ and C57BL/6NNia mice. *Pharmacology, Biochem. & Beh.* 35: 747-750 (1990).
275. Emmett-Oglesby, M.W., Mathis, D.A. Moon, R.T.Y. and Lal, H.: Animal models of drug withdrawal symptoms. *Psychopharm.* (101): 292-309 (1990).
276. Benjamin, Daniel, Lal, H. and Meyerson, L.R.: The effects of 5HT<sub>1B</sub> characterizing agents in the mouse elevated plus-maze. *Life Sci.* 47: 195-203 (1990).
277. Lal, H., Yaden, S and Forster, M.J.: Elevation of blood pressure as the basis for discriminative stimuli produced by methoxamine. *Drug Dev. Res.* 20: 145-153 (1990).
278. Forster, M.J. and Lal, H.: Animal model of age-related dementia: Neurobehavioral dysfunctions in autoimmune mice. *Brain Res. Bull.* 25: 503-516 (1990).
279. Itoh, S. and Lal, H.: Influences of cholecystokinin and analogues on memory processes. *Drug Dev. Res.* 21: 257-276 (1990).
280. Forster, M.J. and Lal, H.: Cholinergic modulation of aged-like retention deficits in young autoimmune mice. , *Int. J. Dev. Neurosci.* 8: 679-687 (1990).
281. Forster, M.J. and Lal, H.: Neurobehavioral biomarkers of aging: Influence of genotype and dietary restriction. *Biomed. and Environmen. Sci.* 4:144-165 (1991)
282. Barnes, C.A., Fleshner, M., Forster, M.J., Lal, H., Maier, S.M. and Mazzeo, R.S.: Exercise does not modify spatial memory, brain autoimmunity, or antibody response in aged F-344 Rats. *Neurobiology of Aging.* 12: 47-53 (1991).
283. Lal, H. and Reddy, C.: Effect of p-Chloroamphetamine on morphine withdrawal syndrome. *Drug Dev. Res.* 21: 257-276 (1991).
284. Forster, M.J. and Lal, H.: Autoimmunity and cognitive decline in aging and Alzheimer's disease. *Psychoneuroimmunology II* (R. Ader, N. Cohen, and D. Felten, Eds) Academic Press, New York. pp. 709-748 (1991).
285. Mahapatra, R, Hunter, K.W., Mahapatra, D., Yaden, S. and Lal, H.: Antihypertensive effect of Metoprolol in diuretic-treated, mild primary hypertension. *Drug Dev. Res.* 22:51-57 (1991).
286. Prather, P.L., Rezazadeh, S.M., & Lal, H.: Mianserin in the treatment of ethanol withdrawal in the rat: Prevention of behaviors indicative of anxiety. *Psychopharmacol. Bull.*, 27:285-289 (1991).
287. Lal, H. and Forster, M.J.: Autoimmune mice as models for discovery of drugs against age-related dementia. *Drug Dev. Res.* 24: 1-27 (1991).
288. Forster, M.J. and Lal, H.: Modulation of learning and memory via benzodiazepine receptors: Potential treatments for age-related dementia. *The Treatment of Dementias: A new Generation of Progress.* (E.M. Meyers, F. T. Crews and J. W. Simpkins Eds.) New York: Plenum Pub. .pp. 75-84 (1991).
289. Lal, H., Prather, P.L., & Rezazadeh, S.M.: Anxiogenic behavior in rats during acute and protracted ethanol withdrawal: Reversal by buspirone. *Alcohol.* 8: 467-471 (1991).

290. Prather, P.L., Rezazadeh, S.M., Chen, J., Lal, H. & Martin, M.W.: Modulation of benzodiazepine agonist and inverse-agonist receptor binding by GABA during ethanol withdrawal. *Prog. Neuro-Psychopharm. & Biol. Psychiat.* 15: 921-934 (1991).
291. Lal, H and Forster, M.J.: Learning and memory enhancement by drugs which indirectly promote cholinergic neurotransmission. *Pharmacological Basis of Cholinergic Therapy in Alzheimer's Disease*. (R.E. Becker and E. Giacobini Eds). Boston: Birkhauser Pub., pp. 162-169 (1991).
292. Prather, P.L. & Lal, H.: Protracted withdrawal: Sensitization of the anxiogenic response to cocaine in rats concurrently treated with ethanol. *Neuropsychopharm.* 6: 23-29 (1992).
293. Prather, P.L., Forster, M.J. and Lal, H.: Learning and memory - Enhancing effects of RO 15-4513: A comparison with flumazenil. *Neuropharm.* 31:299-306 (1992).
294. Rezazadeh, S.M., Prather, P.L., Emmett-Oglesby, M.W. and Lal,H: Evaluation of anxiolytic action of ondansetron in rats during withdrawal from chronic chlordiazepoxide. *Annals of New York Acad. of Sci.* 654: 472-473 (1992).
295. Forster, M. and Lal, H: Within-subject behavioral analysis of recent memory in aging mice. *Behav. Pharm.* 3(4):337-349 (1992).
296. Benjamin, D., Saiff, E.I., Nevins, T. and Lal, H: Mianserin-induced 5-HT<sub>2</sub> Receptor downregulation results in anxiolytic effects in the elevated plus-maze test. *Drug Dev. Res.* 26: 287-297 (1992).
297. Bhadra, S., Prather, P.L., Elkhayat, I., Harris, C.M. and Lal, H.: Anxiogenic effects of Disulfiram evaluated in an animal model. *J.of Studies on Alcohol.*,54:5-10 (1993).
298. Prather, P.L., Rezazadeh, S.M., Lane, J.D., Rowan, G.A., Hooper, M.L, Lytle, D.A., Emmett-Oglesby, M.W. and Lal, H.: Conflicting evidence regarding the efficacy of ondansetron in benzodiazepine withdrawal. *J. Pharm. Exp. Ther.* 264:622-630 (1993).
299. Lal, H. Rezazadeh, S.M. & Prather, P.L.: Potential role of 5HT<sub>1c</sub> and/or 5HT<sub>2</sub> receptor in mianserin-induced prevention of anxiogenic behaviors occurring during ethanol withdrawal. *Alcoholism: Clin. & Exp. Res.* 17(2):411-417 (1993).
300. Rezazadeh, S.M., Prather, Paul L and Lal, H.: Sensitization to 5-HT<sub>1C</sub> receptor agonist in rats observed following withdrawal from chronic ethanol. *Alcohol* 10:281-283 (1993).
301. Wallis, Cleatus J., Rezazadeh, S. Mehdi and Lal, H.: The role of serotonin in ethanol abuse. *Drug Dev. Res.* 30:178-188 (1993).
302. Lal, H., Rezazadeh, M. and Wallis, C.J.: Serotonin mechanisms in ethanol abuse. *Serotonin: From Cell Biology to Pharmacology and Therapeutics*. (Vanhoutte, P.M., Saxena, P.R., Paoletti, .R., Brunello, N., and Jackson A.S. Eds.) Boston:Kluwer Publ. 5:367-374 (1993).
303. Sohal, R.S., Ku, Hung-Hai, Agarwal, S., Forster, M.J. and Lal, H.: Oxidative damage, mitochondrial oxidant generation and antioxidant defenses during aging and in response to food restriction in the mouse. *Mechanisms of Ageing and Development.* 74: 121-133 (1994).

304. Sohal, R.S., Agarwal, S., Candas, M., Forster, J.J. and Lal, H.: Effect of age and caloric restriction on DNA oxidative damage in different tissues of C57BL/6 mice. *Mechanisms of Ageing and Development*. 76:215-224 (1994).
305. Forster, M.J., Prather, P.L., Patel, S.R. and Lal, H.: The benzodiazepine receptor inverse agonist, RO15-3505, Reverses recent memory deficits in aged mice. *Pharmacology, Biochemistry & Behavior*.51:557-560 (1995).
306. Wallis, C.J., Rezazadeh, S.M. and Lal, H.: GM1 ganglioside reduces ethanol-intoxication and the development of ethanol dependence. *Alcohol* 12(6):573-580 (1995).
307. Forster, M.J., Dubey, Anju, Dawson, Kimberly M., Stutts, William A., Lal, H. and Sohal, R. S. Age-related losses of cognitive function and motor skills in mice are associated with oxidative protein damage in the brain. *Proc. Natl. Academy of Science*. 93: 4765-4769 (1996).
308. Dubey, Anju, Forster, Michael J., Lal, H. and Sohal, R.S.: Effect of age and caloric intake on protein oxidation in different brain regions and on behavioral functions of the mouse. *Archives of Biochemistry and Biophysics*, 333: 189-197 (1996).
309. Das, H. and Lal, H.: Pathogenesis of Alzheimer's disease: Current status on apolipoprotein E4 gene. *Reviews in the Neurosci*. 7:277-283 (1997).
310. Das, H. and Lal, H.: Genes implicated in the pathogenesis of Alzheimer's Disease. *Frontiers in Biosci*. (2)253-259 (1997).
311. Wallis, C.J. and Lal, H.: a discriminative stimulus produced by 1-(3chlorophenyl)-piperazine (MCPP) as a putative animal model of anxiety. *Neuro-Psychopharm. & Biol. Psychiat*. 22:547-565 (1998).
312. Gatch, M.B. and Lal, H.: Pharmacological Treatment of Alcoholism. *Prog. NeuroPsychopharm. & Biol. Psychiat*. 22:917-944 (1998).
313. Gatch, M.D. and Lal, H.: Effects of ethanol and ethanol withdrawal on nociception in rats. *Alcoholism: Clinical and Experimental Res*. 23;2:328-333 (1999).
314. Jung, M.E, Lal, H, and Gatch, M.B: The Discriminative Stimulus Effects of Pentylenetetrazol as a Model of Anxiety: Recent Developments: 26:429-439, 2002.

#### **IN PRESS (published now)**

315. Wallis, C.J. and Lal, H.: Partial blockade of anxiogenic symptoms by ritanserin in ethanol withdrawn animals. *Alcoholism: Clin. & Exp. Res*. (submitted) (1998).
316. Wallis, C.J. and Lal, H.: mCPP as an alternative stimulus to PTZ in a discriminative model of anxiety. *JPET* (submitted) (1998).
317. Wallis, C.J. and Lal, H.: 5HT3 antagonists and ethanol withdrawal modify the pentylenetetrazol (PTZ) discrimination threshold. *Alcohol* (submitted) (1998).

318. Uzbay, I.T., Wallis, C.J., Elsken, C.S, Wild, S.A., Lal, H. and Forster, M.J.: Effects of N-Methyl-D-Aspartate receptors blockers and nitric oxide synthase inhibitors on cocaine-stimulated locomotor activity in mice. *Pharm. Biochem & Behav.* (submitted) (1998).
319. Sahebarao P. Mahadik. S.P. Evans, D. and Lal, H.: Oxidative Stress, Antioxidants and w-3 Essential Fatty Acid Supplementation in Schizophrenia. *Biol Psychiatry*, submitted

Harbans Lal

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