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*Consultant and Expert Witness in Toxicology, Carcinogenesis, Pharmacology,
and Pharmacy*

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RESUME

EXPERIENCE

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| 1998-present | ToxNetwork.com
<i>President</i> | Rockville, MD |
| | <ul style="list-style-type: none">• Consultant and Expert Witness (Defense, Plaintiff) in Toxicology, Carcinogenesis, Pharmacology, and Pharmacy Standard of Care to prestigious law firms, chemical companies, trade associations, public relations agencies, national and international organizations, and print and electronic media. | |
| 1990-1998 | US Environmental Protection Agency
<i>Senior Science Advisor and Senior Toxicologist
Risk Assessment Division
Office of Pollution Prevention and Toxics</i> | Washington, DC |
| | <ul style="list-style-type: none">• Conducted numerous health evaluations and risk assessments on important environmental chemicals under Sections 4, 5 and 6 of the Toxic Substances Control Act;• Managed the preparation of preliminary guidelines for "Risk-Risk Tradeoff";• Managed extramural contracts totaling hundreds of thousands of dollars;• Advised the Director of the Health and Environmental Review Division of the Office of Toxic Substances on science issues in cancer, toxicology, chemical testing, and risk assessment; and• Coordinated scientific activities between the Office of Pesticides and Toxic Substances of EPA, the National Toxicology Program of NIH, various other governmental agencies, and national and international health organizations and laboratories. | |
| 1989-1990 | US Environmental Protection Agency
<i>Manager
Analysis and Support Division, Office of Radiation Programs</i> | Washington, DC |
| | <ul style="list-style-type: none">• Managed, provided guidance to and coordinated activities with staff from the Agency for Toxic Substances and Disease Registry related to the evaluation of the toxicology of radioactive substances. | |

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| 1988-1989 | US Environmental Protection Agency
<i>Senior Scientist</i>
<i>Office of International Activities</i> | Washington, DC |
| | <ul style="list-style-type: none"> • Coordinated Agency participation in the Organization for Economic Cooperation and Development, the World Health Organization, the WHO-led United Nations International Program on Chemical Safety, and other United Nations specialized agencies; and • Represented the Agency in dealing with the regulated community to ensure that it complied with US regulations concerning international shipments of hazardous wastes; | |
| 1980-1988 | US Environmental Protection Agency
<i>Senior Toxicologist</i>
<i>Health and Environmental Review Division, Office of Toxic Substances</i> | Washington, DC |
| | <ul style="list-style-type: none"> • As acting Team Leader, supervised a team of six scientists responsible for reviewing toxicology and cancer studies; • Evaluated and validated cancer studies under Sections 4,5 and 6 of the Toxic Substances Control Act; • Implemented a research program on the use of biochemical and immunological markers as early indicators of cancer in experimental animals; and • Managed several extramural research projects. | |
| 1977-1980 | US National Cancer Institute, NIH
<i>Pharmacologist</i>
<i>National Toxicology Program, Carcinogenesis Testing Program</i> | Bethesda, MD |
| | <ul style="list-style-type: none"> • Managed, designed, monitored, and evaluated long-term animal cancer studies; and • Coordinated testing activities between the US National Cancer Institute and the US National Institute of Environmental Health Sciences. | |
| 1970-1977 | US National Cancer Institute, NIH
<i>Research Pharmacist</i>
<i>Laboratory of Toxicology, Division of Cancer Treatment</i> | Bethesda, MD |
| | <ul style="list-style-type: none"> • Conducted research on anti-cancer drugs; and • Discovered the enzyme "L-asparagine synthetase" in pancreas of mammalian and avian species. | |
| 1968-1970 | White Earth Indian Reservation
<i>Chief Pharmacist</i> | White Earth, MN |
| | <ul style="list-style-type: none"> • Set up the first pharmacy in an outpatient clinic on an Indian reservation. | |

PRESENTATIONS and PUBLICATIONS

- Organized, presented at or attended over 25 national or international conferences;
- Published over 70 scientific papers and abstracts on cancer, toxicology and pharmacology;
- Wrote and evaluated numerous hazard and risk assessments for the US Environmental Protection Agency;
- Edited 5 books including the *Handbook of Carcinogen Testing, Markers of Chemically Induced Cancer*, and *Biochemical Mechanisms and Regulation of Intercellular Communication*.

MEMBERSHIP in PROFESSIONAL SCIENTIFIC and PHARMACEUTICAL SOCIETIES, ASSOCIATIONS, ORGANIZATIONS and ADVISORY COMMITTEES

- Society of Toxicology (SOT)
- National Capital Area Chapter of the Society of Toxicology (*President, '05-'06; Vice President, '04-'05; Councilor and Newsletter Editor, '00-'03*) (NCAC-SOT)
- American Society for Pharmacology and Experimental Therapeutics (ASPET)
- American Pharmacists Association (APhA)
- US Surgeon General C. Everett Koop's Scientist Professional Advisory Committee (*Chairman, '88-'89*)
- US Public Health Service Centennial Planning Committee
- Peer Reviewer – *Journal of Toxicology and Applied Pharmacology*
- Peer Reviewer – *Annals of Pharmacotherapy*

LICENSES

- Pharmacist (*ret.*), MD and NY

AWARDS

- US Public Health Service Citation ('84; '89; '90)
- US Public Health Service Commendation Medal ('80)
- US Environmental Protection Agency Bronze Medal for Commendable Service ('84)

6. Jayaram, H.N., Cooney, D.A., Milman, H.A., Homan, E.R., King, V.M. and Cragoe, E.J.: Ethacrynic acid – an inhibitor of L-asparagine synthetase. *Biochem. Pharmacol.* **24**:1787-1792 (1975).
7. Cooney, D.A., Milman, H.A., Jayaram, H.N. and Homan, E.R.: Inhibition of L-asparagine synthetase by mucochloric and mucobromic acids. *Enzyme* **21**:524-539 (1976).
8. Jayaram, H.N., Cooney, D.A., Milman, H.A., Homan, E.R. and Rosenbluth, R.J.: DON, CONV and DONV I: Inhibition of L-asparagine synthetase *in vitro*. *Biochem. Pharmacol.* **25**:1571-1582 (1976).
9. Rosenbluth, R.J., Cooney, D.A., Jayaram, H.N., Milman, H.A. and Homan, E.R.: DON, CONV and DONV II: Inhibition of L-asparagine synthetase *in vivo*. *Biochem. Pharmacol.* **25**:1851-1858 (1976).
10. Cooney, D.A., Jayaram, H.N., Milman, H.A., Homan, E.R., Pittillo, R., Geran, R.I., Ryan, J. and Rosenbluth, R.J.: DON, CONV and DONV III: Pharmacologic and toxicologic studies. *Biochem. Pharmacol.* **25**:1859-1870 (1976).
11. Cooney, D.A., Milman, H.A. and Taylor, Jr., B.: A radiometric method for the measurement of L-asparaginase at concentrations below 1×10^{-5} I.U./ml. Technique and application. *Biochem. Med.* **15**:190-205 (1976).
12. Cooney, D.A., Driscoll, J.S., Milman, H.A., Jayaram, H.N. and Davis, R.D.: Inhibitors of L-asparagine synthetase, *in vitro*. *Cancer Treatment Rpts.* **60**:1493-1557 (1976).
13. Cooney, D.A., Milman, H.A., Cable, R.G., Dion, R.L., Bono, Jr., V.H., Karrer, K. and Friedel, H.P.: Maleimide: Biochemical, pharmacologic and toxicologic studies. Interaction with L-asparagine metabolism. *Biochem. Pharmacol.* **27**:151-166 (1978).
14. Milman, H.A., Cooney, D.A. and Cable, R.G.: Maleimide II: Interaction with L-asparaginase from *Escherichia coli*. *Biochem. Pharmacol.* **27**:824-826 (1978).
15. Brynes, S., Fiorina, V.J., Cooney, D.A. and Milman, H.A.: Potential antitumor agents *via* inhibitors of L-asparagine synthetase. Substituted sulfonamides and sulfonyl hydrazides related to L-glutamine. *J. Pharmacol. Sci.* **67**:1550-1553 (1978).
16. Milman, H.A., Cooney, D.A. and Applebee, S.: A radiometric method for the measurement of L-asparagine synthetase activity: Comparison with available methods. *Int. J. Biochem.* **9**:803-816 (1978).
17. Milman, H.A., Ward, J.M. and Chu, K.C.: Pancreatic carcinogenesis and naturally occurring pancreatic neoplasms of rats and mice in the NCI Carcinogenesis Testing Program. *J. Environ. Pathol. Toxicol.* **1**:829-840 (1978).
18. Milman, H.A., Muth, R. and Cooney, D.A.: Aminomalonic acid and its congeners as potential *in vivo* inhibitors of L-asparagine synthetase. *Enzyme* **24**:36-47 (1979).
19. Milman, H.A. and Cooney, D.A.: Partial purification and properties of L-asparagine synthetase from mouse pancreas. *Biochem. J.* **181**:51-59 (1979).
20. Milman, H.A., Cooney, D.A. and Young, D.M.: Role of pancreatic L-asparagine synthetase in the homeostasis of L-asparagine. *Am. J. Physiol.* **236**:E746-E753 (1979).
21. Milman, H.A., Peckham, J.C., Ward, J.M. and Tarone, R.E.: Reduction of the severity of nephropathy in aging Fischer 344 rats treated with analogs of arylsulfonyleurea. *Toxicol. Appl. Pharmacol.* **49**:425-430 (1979).

22. Milman, H.A., Cooney, D.A. and Ward, J.M.: Inhibition of L-asparagine synthetase by mineral cations. *Toxicol. Appl. Pharmacol.* **50**:573-580 (1979).
23. Milman, H.A., Cooney, D.A. and Huang, C.Y.: Studies on the mechanism of the glutamine-dependent reaction catalyzed by asparagine synthetase from mouse pancreas. *J. Biol. Chem.* **255**:1862-1866 (1980)
24. Cooney, D.A., Jones, M.T., Milman, H.A., Young, D.M. and Jayaram, H.N.: Regulators of the metabolism of L-asparagine. A search for endogenous inhibitors. *Int. J. Biochem.* **11**:519-539 (1980).
25. Chu, K.C. and Milman, H.A.: Review of experimental carcinogenesis by compounds related to vinyl chloride. *Environ. Health Perspect.* **41**:211-220 (1981).
26. Milman, H.A., Hurley, P.M. and Auletta, A.: An overview of current efforts in short-term carcinogen testing. *Environ. Health Perspect.* **50**:355-357 (1983).
27. Milman, H.A.: An overview of current research efforts on the application of biological markers to carcinogen testing. In: *Application of Biological Markers to Carcinogen Testing* (H.A. Milman and S. Sell, eds.), pp. 3-5, Plenum Publishing Corp., New York and London (1983).
28. Pal, B.C., Ross, R.H. and Milman, H.A.: Nutritional requirements and contaminant analysis of laboratory animal feeds. *National Technical Information Service. PB No. EPA-560/6-83-005*, Springfield, VA (1984).
29. Milman, H.A. and Peterson, C.: Apparent correlation between structure and carcinogenicity of phenylenediamines and related compounds. *Environ. Health Perspect.* **56**:261-273 (1984).
30. Mitoma, C., Steeger, T., Jackson, S.E., Wheeler, K.P., Rogers, J.H. and Milman, H.A.: Metabolic disposition study of chlorinated hydrocarbons in rats and mice. *Drug Chem. Toxicol.* **8**:183-194 (1985).
31. Tu, A.S., Murray, T.A., Hatch, K.M., Sivak, A. and Milman, H.A.: *In vitro* transformation of BALB/c-3T3 cells by chlorinated ethanes and ethylenes. *Cancer Letters.* **28**:85-92 (1985).
32. Milman, H.A.: Use of cancer markers for detection of carcinogenicity. In: *Safety Evaluation and Regulation of Chemicals 3* (F. Homburger, ed.), pp. 87-97, Karger, Basel (1986).
33. Story, D.L., Meierhenry, E.F., Tyson, C.A. and Milman, H.A.: Differences in rat liver enzyme-altered foci produced by chlorinated aliphatics and phenobarbital. *Toxicol. Ind. Health* **2**:351-362 (1986).
34. Elmore, E., Milman, H.A. and Wyatt, G.P.: Applications of the chinese hamster V79 metabolic cooperation assay in toxicology. In: *Biochemical Mechanisms and Regulation of Intercellular Communication* (H.A. Milman and E. Elmore, eds.), pp. 265-292, Princeton Scientific Publishing Co., Inc., NJ (1988).
35. Milman, H.A., Story, D.L., Riccio, E.S., Sivak, A., Tu, A.S., Williams, G.M., Tong, C. and Tyson, C.A.: Rat liver and *in vitro* assays to detect initiating and promoting effects of chlorinated ethanes and ethylenes. *Ann. NY Acad. Sci.* **534**:521-530 (1988).
36. Tyson, C.A., Gee, S.J., Hawk-Prather, K., Story, D.L. and Milman, H.A.: Correlation between *in vivo* and *in vitro* toxicity of some chlorinated aliphatics. *Toxic. In Vitro* **3**:145-150 (1989).

37. Milman, H.A. and Arnold, S.B.: Neurologic, psychological, and aggressive disturbances with sildenafil. *Annals Pharmacoth.* **36**:1129-1134 (2002).
38. Milman, H.A., Bosland, M.C., Walden, P.D. and Heinze, J.E.: Evaluation of the adequacy of published studies of low dose effects of bisphenol A (BPA) on the rodent prostate for use in human risk assessment. *Regul. Toxicol. Pharmacol.* **35**:338-346 (2002).
39. Milman, H.A. and Arnold, S.B. Reply to *Letter to the Editor* re: Neurologic, psychological, and aggressive disturbances with sildenafil. *Annals Pharmacoth.* **36**:1973 (2002).
40. Hotchkiss, A.K., Pyter, L.M., Gatien, M.L., Wen, J.C., Milman, H.A. and Nelson, R.J.: Aggressive behavior increases after termination of sildenafil citrate treatment in mice. *Physiol. Behavior.* **83**:683-688 (2005).
41. Milman, H.A.: Possible contribution of indomethacin to the carcinogenicity of non-genotoxic bladder carcinogens that cause bladder calculi. *Drug Chem. Toxicol.* **30**:161-166 (2007).

ABSTRACTS

1. Milman, H.A., Guarino, A.M. and Cooney, D.A.: The distribution of L-asparagine synthetase in the organs of various marine animals. *The Bulletin – Mount Desert Island Biological Laboratory, Salisbury Cove, ME.* **12**:68-71 (1972).
2. Jayaram, H., Cooney, D., Milman, H., Vadlamudi, S., Greenberg, N., Goldin, A. and Mead, J.A.R.: Inhibitors of L-asparagine synthetase of the L5178Y-resistant leukemia. *Proc. Am. Assoc. Cancer Res.* **14**:109 (1973).
3. Milman, H.A., Cooney, D.A. and Young, D.M.: L-asparagine synthetase in the mammalian pancreas. *Fed. Proc.* **32**:699 (1973).
4. Cooney, D.A., Milman, H.A. and Guarino, A.M.: Investigations of the biosynthesis of L-asparagine in the skate (*Raja ocellata*) and dogfish (*Squalus acanthias*). *The Bulletin – Mount Desert Island Biological Laboratory, Salisbury Cove, ME.* **13**:27-28 (1973).
5. Schein, P., Cooney, D., Milman, H., McMenamain, M. and Anderson, T.: Studies on the mechanism of streptozotocin diabetogenicity. *Clin. Res.* **21**:653 (1973).
6. Jayaram, H.N., Cooney, D.A., Homan, E.R., Milman, H.A. and Rosenbluth, R.: Inhibitors of L-asparagine synthetase of the L5178Y-asparaginase resistant leukemia – II. *The Pharmacologist* **15**:253 (1973).
7. Cable, R.G., Milman, H.A., King, V. and Taylor, B.: L-Asparagine synthetase: An enzymic marker for murine tumors. *Proc. Am. Assoc. Cancer Res.* **16**:135 (1975).
8. Milman, H.A.: A comparative pharmacological study of L-asparagine synthetase from Leukemia 5178Y and mouse pancreas. *Abstracts, XIIIth Int. Cancer Congress* **1**:209-210 (1978).
9. Milman, H.A. and Ward, J.M.: Nitrofen and azinphosmethyl – pancreatic carcinogens in the Osborne Mendel rat. *Abstracts, Joint Meeting of the American Pancreatic Assoc., Inc. and National Pancreatic Cancer Project* (1978).

10. Milman, H.A.: Comparative biochemical studies with the L-glutamine-dependent reaction catalyzed by L-asparagine synthetase from Leukemia 5178Y and mouse pancreas. In: *Adv. Comp. Leukemia Res.* (D.S. Yohn, B.A. Lapin and J.R. Blakeslee, eds.), pp. 533-534, Elsevier North Holland, Inc., NY (1979).
11. Milman, H.A. and Cooney, D.A.: Inhibition of asparagine synthetase by sulfhydryl-reactive compounds. *Proc. 13th Int. Cancer Congress*, p. 130 (1982).
12. Story, D.L., Gee, S.J., Hawk-Prather, K., Tyson, C.A., Mitoma, C. and Milman, H.A.: *In vitro* metabolism and cytotoxicity of chlorinated hydrocarbon solvents. *The Toxicologist* **3**:103 (1983).
13. Mitoma, C., Steeger, T., Jackson, S.E. and Milman, H.A.: *In vivo* metabolism of chlorinated ethanes. *The Toxicologist* **3**:103 (1983).
14. Riccio, E., Griffin, A., Mortelmans, K. and Milman, H.A.: A comparative mutagenicity study of volatile halogenated hydrocarbons using different metabolic activation systems. *Abstracts, Environ. Mutag. Soc. Annual Mtg*, p. 161 (1983).
15. Story, D.L., Dabbs, J.E., Tyson, C.A. and Milman, H.A.: Induction by chlorinated aliphatics of GGT⁺ foci in liver of male Osborne-Mendel rats. *The Toxicologist* **4**:729 (1984).
16. Elmore, E., Milman, H.A., Korytynski-Smith, E.A. and Steele, V.E.: Ability of three structurally related chloro-phenylenediamine dyes to inhibit metabolic cooperation in V79 cells. *In Vitro* **20**:259 (1984).
17. Milman, H.A., Mitoma, C., Tyson, C.A., Riccio, E.S., Sivak, A., Tu, A.S., Williams, G.M. and Tong, C.: Comparative pharmacokinetics/metabolism, carcinogenicity and mutagenicity of chlorinated ethanes and ethylenes. *Abstracts, Int. Conf. on Organic Solvent Toxicity*, p. 19 (1984).
18. Story, D.L., Dabbs, J.E., Tyson, C.A. and Milman, H.A.: Induction of GGT⁺ foci by chlorinated aliphatics in rat liver. *The Pharmacologist* **5**:14 (1985).
19. Elmore, E., Lewis-Borden, M., Wyatt, G., Korytynski, E.A., Tennant, M.C. and Milman, H.A.: Evaluation of selected structurally-related phenylenediamine dyes in the V-79 metabolic cooperation assay. *Abstracts, Fourth Int. Conf on Environ. Mutagens* (1985).
20. Elmore, E., Murphy, D. and Milman, H.A.: Evaluation of selected structurally-related phenylenediamine dyes in the V-79 metabolic cooperation assay. *The Toxicologist* **6**:37 (1986).
21. Milman, H.A., Mitoma, C., Tyson, C., Riccio, E.S., Sivak, A., Tu, A.S., Tong, C., Williams, G.M. and Elmore, E.: Carcinogenicity studies with chlorinated aliphatics. *Abstracts, 14th Int. Cancer Congress* **1**:305 (1986).
22. Milman, H.A., Elmore, E., Freeman, G. and Tyson, C.: Biochemical markers as short-term indicators of carcinogenicity. *Abstracts, 14th Int. Congress of Biochem.* **Th**:49 (1988).
23. Wyatt, G., Wilkinson, B.P., Milman, H.A. and Elmore, E.: Activities of eighteen chemicals in the V79 metabolic cooperation assay. *In Vitro* **25**:172a (1989).
24. Elmore, E., Milman, H.A., Wilkinson, B.P. and Wyatt, G.P.: Activities of selected cyclic hydrocarbons of known carcinogenicity in the V79 metabolic cooperation assay. *The Toxicologist* **9**:121 (1989).

25. Milman, H.A. and Heinze, J.E.: Lack of consensus on wildlife effects caused by endocrine disruptors. *Abstracts, 2nd Annual Meeting of the Japan Society of Endocrine Disruptors Research*. **C1:97** (1999).
26. Milman, H.A. and Heinze, J.E.: Lack of consensus on health effects of endocrine disruptors. *Abstracts, 2nd Annual Meeting of the Japan Society of Endocrine Disruptors Research*. **C2:98** (1999).
27. Milman, H.A. and Heinze, J.E.: Lack of reproducibility of low dose effects of endocrine disruptors and limitations of short-term tests for screening and risk assessment. *Abstracts, 2nd Annual Meeting of the Japan Society of Endocrine Disruptors Research*. **C3:99** (1999).
28. Milman, H.A., Bosland, M.C., Walden, P.D. and Heinze, J.E.: Adequacy of published *in vivo* studies of low dose effects of bisphenol A (BPA) for human risk assessment. *3rd Annual Meeting of the Japan Society of Endocrine Disruptors Research*. **PB-24:172** (2000).
29. Milman, H.A. and Heinze, J.E.: Evaluation of the relationship between children's health and exposure to endocrine disruptors. *3rd Annual Meeting of the Japan Society of Endocrine Disruptors Research*. **PE-18:336** (2000).
30. Hotchkiss, A.K., Pyter, L.M., Gatién, M.L., Wen, J., Milman, H.A. and Nelson, R.J.: Sildenafil citrate does not affect aggression in male C57BL/6 mice. *33rd Annual Meeting of the Society for Neuroscience*. (2003).

BOOK REVIEWS

1. Milman, H.A.: A review of *Toxicology of the Pancreas* (P.M. Pour, ed., CRC Press, Taylor & Francis 2006). *Int. J. of Toxicol.* **25:435-437** (2006).

GOVERNMENTAL REPORTS

I have written, published, or evaluated numerous governmental reports and regulatory submissions at the US National Cancer Institute, the US National Toxicology Program, and the US Environmental Protection Agency.