

## References

- Allebrandt K. V., Souza R. L.R. and Chautard Freire Maia E. A. (2002). Variability of the paraoxonase gene (PON1) in Euro- and Afro- Brazilians. *Toxicology and Applied Pharmacology* , 180, 151-156.
- Akgur S.A, Ozturk P., Solak I., Moral A.R. and Ege B. (2003). Human serum paraoxonase (PON1) activity in acute organophosphorus insecticide poisoning. *Forensic Science International*, 133, 136-144.
- Akhmedova S.N., Yakimovsky A.K. and Schwarts E.I. (2001). Praraoxonase 1 Met-Leu 54 polymorphism is associated with Parkinson's disease. *J. Neurol. Sci*, 184, 179-182.
- Ames R. G., Howd R. A., and Doherty L. (1993). Community Exposure to a paraquat drift. *Arch. Environ. Health*, 48, 47-52.
- Areekul Sutharm. (2003). *Insect Pests and Insect control in Thailand.1<sup>st</sup> Pesticides Use and Effect on human health symposium*. Chiang Mai, Thailand.
- Aynacioglu A. S., Cascorbi I., Mrozikiewicz P. M. and et al. (1999). Paraoxonase 1 mutations in Turkish population. *Toxicol. Appl. Pharmacol*, 157, 174-177.

Bate J. A. R (2000). Health and Environmental Hazards Classification of Pesticides..

Pesticide Outlook, June, 109-115.

Barr D.B. and Needham L.L. (2002). Analytical Method for biological monitoring of exposure to pesticides: a review. *Journal of chromatography B*, 78(1-2), 5-29.

Blatter-Garin M. C., James R. W., Dussoix P. and et al. (1999). Paraoxonase polymorphism Met-Leu 54 is associated with modified serum concentration of the enzyme: A possible link between the paraoxonase gene and increase risk of cardiovascular disease in diabetes. *J. Clin. Inves.*, 99, 62-66.

Brophy V. H., Hastings M. D., Clendenning J. B. and et al. (2001). Polymorphisms in the human paraoxonase (PON1) promoter. *Pharmacogenetics*, 11, 77-84.

Budavari S. (1989). *The Merck Index, Eleventh Edition*. Merck and Company Incorporated, Rahway, NJ.

Buranatrevedh S. (2003). Effects of pesticides on Health. 1<sup>st</sup> Pesticides Use and Effect on human health symposium, Chiang Mai, Thailand.

Cascorbi I., Laule M., Mrozikiewicz P.M et al. (1999). Mutations in the human paraoxonase 1 gene: Frequencies, allelic linkages and association with coronary artery disease. *Pharmacogenetics*, 9, 755-761.

Cattozzo G., Franzini C. and Rettondini M. (1993). Dibucaine number measured with the Ektachem system. *Clin Chem*, 1547-1546.

Chan P.C., Wong B.Y. L., and Cole D. E. C. (2000). Ethnic differences in allele frequencies at polymorphic sites of the paraoxonase genes, PON1 and PON2. *Clin. Biochem*, 33, 226.

Cherry N., Mackness M., Durrington P. and et al. (2002). Paraoxonase (PON1) polymorphisms in farmers attributing ill health to sheep dip. *Lancet*, 359, 763-64.

Chiang Mai. (2004). Information of Chiang Mai province. [Online]. Available: <http://www.chiangmai.go.th>. [2004, August 3].

Cincinnati OH. (1986). Documentation of the Threshold Limit Values and Biological Exposure Indices, Fifth Edition (pp.5-48). American Conference of Governmental Industrial Hygienists, Inc.

Costa L. G. and Manzo L. (1995). Biochemical markers of neurotoxicity: research strategies and epidemiology applications. *Toxicology Letter*, 77, 137-144.

Costa L.G., Cole T. B. And Furlong C.E. (2003). Polymorphisms of paraoxonase (PON1) and their significance in clinical toxicology of organophosphates. *J Toxicol Clin Toxicol*, 41(1), 37-45.

Costa L.G., Li W. F., Richter R. J. and et al. (1999). The role of paraoxonase (PON1) in the detoxication of organophosphates and its human polymorphism. *Chemico-Biological Interactions*, 119-120, 429-438.

Coyne V. E., James M. D., Sharon J Reid and Edward P Rybicki. (2001). *Molecular Biology Techniques Manual Third Edition: Standard PCR Protocol*.

Davis L., Britten J.J. and Morgan M. (1997). Review article : cholinesterase its significance in anaesthetic practice. *Anesthesia*, 52, 244-260.

Dharambir K Sanghera, Nilmani Saha M. and Ilyas Kamboh. (1998). The codon 55 polymorphism in the paraoxonase 1 gene is not associated with the risk of coronary heart disease in Asian Indians and Chinese. *Atherosclerosis*, 136, 217-223.

Extention Toxicology Network. (2004). [Online]. Available: <http://www.EXTOXNET>  
TIBs - Cholinesterase Inhibition.mht [2004, October 7].

Environmental Protection Agency; EPA. (2004). Pesticides and Public Health.

[Online]. Available on [http:// www.epa.gov/history/publications /formative6.html](http://www.epa.gov/history/publications/formative6.html) [2004, August 21].

Ellman G. L., Courtacy D., Andres V. Jr. and Featherstone R.M. (1961). A new and rapid colorimetric determination of Acetylcholinesterase activity. *Biochem Pharmacol*, 7, 88-95.

Ferre N., Tous M., Pau A., and et. Al. (2000). Paraoxonase Gln-Arg (192) and Leu-Met (55) gene polymorphisms and enzyme activity in a population with a low rate of coronary heart disease. *Clinical Biochemistry*, 35, 197-203.

Food and Agriculture Organization: FAO. (1968). Pesticide residues in food. Report of the 1968 joint meeting of the FAO working party of experts on pesticide residues and the WHO expert committee on pesticide residues. FAO Agricultural Studies, No. 78, WHO Technical Report Series, No. 417.

Furlong C.E., Richter R.J., Seidel S.L. and Motulsky A.G.. (1988) Role of genetic polymorphism of human plasma paraoxonase/ arylesterase in hydrolysis of the insecticide metabolites chlorpyrifos oxon and paraoxon, *Am. J. Human Genet*, 43, 230–238.

Furlong C.E., Li W.-F, Brophy V.H., Jarvik G.P and et al. (2000). The PON1 gene and detoxication, *NeuroToxicology*, 21(4), 581–588.

Food and Agriculture organization of the United Nations. (1998). International code of conduct on the distribution and use of pesticide, Rome, FAO.

Gallo M. A., and Lawryk N.J. (1991). Organic phosphorus pesticides. In Hand book of Pesticide Toxicology. New York: Academic Press.

Gardemann A., Philipp M., Hess K., and et al. (2000). The paraoxonase Leu-Met54 and Gln-Arg191 gene polymorphisms are not associated with the risk of coronary heart disease. *Atherosclerosis*, 152, 421-431.

Gils Kurt. (2004). Cholinesterase. [Online]. Available: [http:// www.weizmann.ac.il/Structural\\_Biology/Pages/Sussman/webpage2/kurt // che.html#2](http://www.weizmann.ac.il/Structural_Biology/Pages/Sussman/webpage2/kurt//che.html#2) [2004, September 10]

Goodall R. (2004). Focus on Human Genome: Cholinesterase heterogeneity :

Pharmacogenetic models and clinical implications. *Current Anaesthesia and Critical Care*, 15, 29-33.

Hatjian B.A., Mutch E., Williams F.M. and et al. (2000). Cytogenetic response

without changes in peripheral cholinesterase enzymes following exposure to

a sheep dip containing diazinon in vivo and in vitro. *Mutation Research*, 472, 85-92.

Harlin KS and Ross PF. (1990). Enzymatic spectrophotometric method for determination of cholinesterase activity in whole blood collaborative study.

*J Assoc Off Anal Chem*, Jul-Aug; 73 (4), 616-9

He F. (1998). Occupational neurotoxic diseases in developing countries. *Occupational Neurotoxicology*. Boca Raton, USA: CRC. Press. 259-269.

Helbecque N., Cottel D., Codron V., and et.al. (2004). Paraoxonase 1 gene polymorphisms and dementia in humans. *Neuroscience Letters*, 358, 41-44.

Hernandez A.F., Gonzalvo M.C., Gil F., Rodrigo L., Villanueva E. and Pla A. (1999). Distribution profiles of paraoxonase and cholinesterase phenotypes in a Spanish population. *Chemico-Biological Interactions*, 119-120, 201-209.

Heru S., and Nugroho W. (1999). Health Study by Farmers In Pacet, East Java. FAO Community IPM Indonesia, Jakarta. March.

HSDB: Hazardous Substances Data Bank. (1990). National Library of Medicine, Bethesda, MD. Micromedix, Inc., Denver, Co.

Hussain M.A. (1987). Neurotoxic Effects of Organophosphorus Insecticides. N. Engl J. Med, 316, 761-763.

Imai Y., Morita H., Kurihara H., and et al. (2002). Evidence for association between paraoxonase gene polymorphisms and atherosclerotic diseases. Altherosclerosis, 149, 435-442.

Jeyaratnam J. (1990). Acute Pesticide Poisoning Major Global Health. Problem World Health statistics quarterly, 43, 139-144.

Jit-Aree W., Hongsibson S. and Langkard K. (2003). The situation of pesticides used in northern of Thailand. Chiang Mai University, December 2003.

Jungbluth F. (1996). Crop Policy in Thailand: Economic and political factors influencing pesticide use, Pesticide Policy Project. Publication series no.5, Hannover, December 1996, pp75.

Kalow W. (1991). Inter-ethnic variation of drug metabolism. Trends. Pharmacol. Sci, 12, 102-106.

Kalow W and Genest K. (1957). A method for the detection of atypical forms of hyman serum cholinesterase. Determination of dibucaine numbers. Can. J. Biochem. Physiol, 35, 339-346.



Karallieddea L.D., Edwards P. and Marrs T.C. (2003). Variables influencing the toxic response to organophosphates in humans. *Food and Chemical Toxicology*, 41, 1–13.

Keam Makarady and Lang Seng Horng. (2002). *Pesticide Monitoring in Community*. CEDAC Phnom Penh, February.

Keith S.D. (2000). *Pesticide Usage in the United States: History, Benefits, Risks and Trends*. An equal opportunity employer affirmative action organization committed to a diverse work force, Bulletin 1121, November, 16.

Kishi M., Hirschhorn N., Qjajadisastra M., Satterlee L.N., Eng A. and Strowman S. (1995). Relationship of pesticide spraying to signs and symptoms in Indonesian farmers. *Scand J Work Environ Health*. 21, 124-33.

Kidd H. and James D.R. (1991). *The Agrochemical Handbook*, The third edition (pp5-14). Royal Society of Chemistry Information Services, Cambridge, UK.

Kirby Griffin. (2004). *Medical surveillance of pesticide workers*. [Online]. Available : <http://www.systoc.com>. [2004, August 10]

Ko Y. L., Ko Y. S., Wang S. M., and et.al. (1998). The Gln-Arg 191 polymorphism of human paraoxonase gene is not associated with the risk of coronary artery disease among Chinese in Taiwan. *Atherosclerosis*, 141, 259-264.

La Du B.N. and Novais J. (1989). Human serum organophosphatase: biochemical characteristics and polymorphic inheritance. In *Enzymes Hydrolysing Organophosphorus compounds*. (Edited by Reiner E., Aldrige W. N. and Hoskin F. C. G) pp. 41-52. Ellis-Horwood, Chichester.

La Du Bert N., Avirum Michael, Billecke Scott and et.al. (1995). On the physiological role(s) of the paraoxonase. *Chemico-Biological Interaction*, 119-120, 379-388.

Leonard S. Azaroff and Lucas M. Neas El Salvador. (1999). Acute Health Effects Associated with Nonoccupational Pesticide Exposure in Rural. *Environmental Research, Section A* 80, 158-164.

Leus F. R., Wittekoek M. E., Prins J., and et al. (1999). Paraoxonase (PON1) gene polymorphisms are associated with carotid arterial wall thickness in subjects with familial hypercholesterolemia. *Atherosclerosis*, 149, 371-377.

Li W. F., Costa L. G., Richter R. J. and et al. (2000). Catalytic efficiency determines the *in vivo* efficacy of PON1 for detoxifying organophosphates. *Pharmacogenetics*, 10, 767-780.

Lidwien A.M. Smit, Berna N. van-Wendel-de-Joode, Dick Heederik. and et al. (2003). Neurological symptoms among Sri Lankan farmers occupationally exposed to acetylcholinesterase-inhibiting insecticides. *American Journal of Industrial Medicine*, 44(3), 254-264.

Lockridge O. (1990). Genetic variants of human serum cholinesterase influence metabolism of the muscle relaxant succinylcholine. *Pharmacol Ther*, 47(1):35-60.

Keam M. and Lang Seng H.(2002). Cambodia: Pesticide Monitoring in Community CEDAC. Phnom Penh. February, 2002.

Keifer M.C. (2000). Effectiveness of Interventions in Reducing Pesticide Overexposure and Poisoning. *American Journal of Preventive Medicine*, 18 (4S), 80-84.

Mackness B., Mackness M. I., Arrol S., and et al. (1997a). Molecular polymorphisms of human serum paraoxonase (PON) affect activity. *Atherosclerosis*, 135, 9.

Mackness B., Mackness M. I., Arrol S and et al. (1997b). Effect of the molecular polymorphisms of human paraoxonase (PON1) on the rate of hydrolysis of paraoxon. *Br. J. Pharmac*, 112, 265--268.

Mackness M. I. (1997c). Human Serum Paraoxonase is Inhibited in EDTA Plasma. Biochemical and Biophysical research communication, 242, 249.

Mackness Bharti, Durrington Paul N. and Mackness Michael I.(1998). Review: Human Serum Paraoxonase. Genetic Pharmacology, 31(3), 329-336.

Marrs T. C. (1993). Organophosphate poisoning. Pharmacol. Ther, 58, 51-66.

Miyamoto J., Kaneko H., Tsuji R. and Okuno Y. (1995). Pyrethroids, nerve poisons : how their risks to human health should be assessed. Toxicology Letters, 82-83 (December), 933-940.

Meister R.T. (1992). Farm Chemicals Handbook. Meister Publishing Company. Willoughby, OH.

Miguel A. S. and Eugenio V. (2002). Review article: Enzymes involved in the detoxification of organophosphorus, carbamate and pyrethroid insecticides through hydrolysis. Toxicology Letters, 128, 215-288.

Ministry of public health. (2003). Occupational Health and diseases. [Online]. Available: <http://www.moph.go.th>. [2003, February 4].

- Murphy H. (2004). Pesticides and farmers' health. [Online]. Available: [http://www.ipmthailand.org/en/Pesticides/pesticides\\_survey.htm](http://www.ipmthailand.org/en/Pesticides/pesticides_survey.htm). [2003, August 2].
- Murphy H. (2002). Summary of farmer health studies, Agricultural Workers and Farmers: Conference on Health Effects of Pesticides. Tanjung Bungah Beach Hotel Penang, Malaysia, 18-20 March, 2002.
- Namrat P and Tianponkrang S. (2002). Ban Pa Thorn School Children's studies on the health effects of pesticide. Thai Education Foundation. Bangkok.
- Nguyen Duy Hong, Bui Van Huyen and Nguyen Phung Hoan. (2001). Farmer to farmer studies on Exposure and Health Effects of Pesticide as a Baseline to Measure the Impact of Community Integrated Pest Management. Vietnam National IPM Programme, Hanoi, March.
- Nordini R.B., Araki S., Sato H. and et al. (2002). Effects of Safety Behaviours with Pesticide Use on Occurrence of Acute Symptoms in Male and Female Tobacco-growing Malaysian Farmers. *Industrial Health*. 40, 182-190
- Pataki G.E. (1998). Pesticide Poisoning Registry Report 1998: New York State Department of Health Bureau of Occupational Health. [Online]. Available: <http://www.health.state.ny.us> [2003, October 2,].

Pati N., and Pati U. (1998). Paraoxonase gene polymorphism and coronary artery disease in Indians subjects. *Int J of Cardiology*, 66, 165-168.

Pesticides Safety Directorate :PSD. (2003). Definition of Organophosphate (OPs) and Their Toxicology. [Online]. Available : <http://www.pesticides.gov.uk/approvals.asp?id=507>. [2003, October 10].

Pinto Pereira L.M., Clement Y. and Telang B.V. (1996). Distribution of cholinesterase activity in the population of Trinidad. *Can. J. Physiol. Pharmacol*, 74, 286-289.

Pimental D, Acquay H, Biltonen M, Rice P, Silva M, Nelson J, et al. (1992). Environmental and economic costs of pesticide use. *Bioscience*, 42, 750-60.

Pongraveevongsa Pattaravadee and Ruangyuttikarn Werawan. (2000). Measurement of serum cholinesterase level in normal Thai people. *Chiang Mai Med Bull*, 39 (1-2), 21-29.

Pornphan Namrat and Mounkon Tianponkrang. (2002). Ban Pa Thorn School Children's studies on the Health effects of pesticide. *Thai Education Foundation*, Bangkok Foundation, February.

- Ray D.E. (1998). Chronic effects of low level exposure to anticholinesterases- a mechanistic review. *Toxicology Letters*, 102-103, 527-533.
- Richter ED, Chuwers P, Levy Y, Grauer F. (1992). Health Effects from exposure to organophosphate pesticides in worker and non-worker groups in Israel. *Isr Journ Med Sci*. 28:584-597, 1992.
- Richardson R. J. (1995). Assessment of the neurotoxic potential of chlorpyrifos relative to other organophosphorus compounds: A critical review of the literature. *J. Toxicol. Environ. Health*, 44, 135-165.
- Rosenstock L, Keifer M, Daniell WE, McConnell R, Claypool K. (1991). Chronic central nervous system effects of acute organophosphate pesticide intoxication. *Lancet*, 338: 223-7.
- Rosmann M.R. and Stallones L. (2003). *Farm Pesticides and Depression*. Hank book. AGRIWELLNESS, INC. Harlan, Iowa.
- Sanghera D. K., Aston C. E., Saha N., and et al. (1998). DNA polymorphisms in two paraoxonase genes (PON1 and PON2) are associated with the risk of coronary heart disease. *Am J. Hum. Genet*, 62, 36-44.
- Scarborough M. E., Ames R. G., Lipsett M. J. and Jackson R. J. (1989). Acute health effects of community exposure to cotton defoliants. *Arch. Environ. Health*, 44, 355-360.

Senanayake N., and Karalliede L. (1987) Neurotoxic effects of organophosphorus insecticides : an intermediate syndrome. *N. Engl. J. Med*, 316, 761-763.

Setyoko H. and Wienarto N. (1999). Indonesia: Health Study by Farmers In Pacet, East Java, FAO Community IPM Indonesia. Jakarta. March 1999.

Sodavy P., Sitha M., Nugent R. and Murphy H. (2000). FAO COMMUNITY IPPM PROGRAMME Field document April 2000. [Online]. Available: <http://www.fao.org> [2004, October 10].

Sogorb M.A. and Vilanova E. (2002). Review article : Enzyme involved in the detoxification of organophosphorus, carbamate and pyrethroid insecticides through hydrolysis. *Toxicology Letters*, 128, 215-228.

Suehiro T., Nakauchi Y., Ikeda Y., and et al. (1997). Two paraoxonase gene polymorphisms in patients with coronary heart disease. *Atherosclerosis*, 134, 83.

Sukru A., Ingolf C., Przemyslaw M, and et al. (1999). Paraoxonase 1 Mutations in a Turkish Population. *Toxicology and Applied Pharmacology*, 157, 174-177.



Tadashi Suehiro, Yuh Nakauchi, Michiya Yamamoto and et. al. (1996). Paraoxoanse gene polymorphism in Japanese subjects with coronay heart disease. International Journal of Cardiology, 57, 69-73.

The International Program of Chemical Safety. (1997). The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 1996-1997 (WHO/PCS/96.3).

Therapeutic Goods Administration (TGA). (2000). Chemicals Unit staff contribute health advice to an NRA Expert Panel on organophosphate sheep dips. [Online]. Available: <http://www.tga.gov.au/docs/html/tganews/news32/chem.htm> [2002, February 25]

Thomaas M.R. (2000). Pesticide Usage Monitoring in the United Kingdom. Ann. Occup Hyg, 45(1001), s87-s93.

U.S. Environmental Protection Agency. (1991). Momorandum from the office of Pesticides and Toxic Substances to Office of Pesticide Programs Division Director (pp.5-6) Washington DC.

U.S. Environmental Protection Agency. (1985). Pesticide Fact Sheet No.72. Monocrotophos. U.S. EPA. Washington DC.

Vierstraete A. (1999). Principle of the PCR. [Online]. Available : <http://www.allserv.rug.ac.be/~avierstr/principles/pcr.html> [2004, September 6].

Wells J.C. (1990). Longman Pronunciation Dictionary. First edition. Harlow: Longman. Pearson Hallow Limited.

Whittaker M. (1980). Plasma cholinesterase variants and the anaesthetist. *Anaesthesia*, 35(2),174-197.

Whittaker M, Britten JJ, Dawson PJ. (1983). Comparison of a commercially available assay system with two reference methods for the determination of plasma cholinesterase variants. *Clin Chem. Oct*; 29(10),1746-51.

World Health Organization (WHO). (1990). Public health impact of pesticides used in agriculture. Geneva; WHO, 51, 86.

World Health Organization (WHO). (1996-1997). The WHO recommended classification of pesticides by hazard and guidelines to Classification 1996-1997 (WHO/PCS/96.3)