

UNIVERSITAT ROVIRA I VIRGILI
ESTUDI DEL SISTEMA GLUTATIO/GLUTATIO S-TRANSFERASA EN GLANDULA SEBACIA HUMANA
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ISBN:978-84-691-1876-4/DL: T-339-2008

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- 1.- Abramovitz M, Homma H, Ishigaki S, Tansey F, Cammer W, Listowsky I; Characterization and localization of Glutathione S-transferases in rat brain and binding of hormones, neurotransmitters, and drugs. *J Neurochem* 1988; 50: 50-57.
- 2.- Adang AEP, Brussee J, Vandergen A, Mulder GJ; The Glutathione-Binding Site in Glutathione S-Transferases. Investigation of the Cysteinyl, Glycyl and Gamma-Glutamyl Domains. *Biochem J* 1990; 269 (1): 47-54.
- 3.- Aiso S, Yasuda K, Shiozawa M, Yamamoto H, Sogo T; Preparation of monoclonal antibodies to glutathione S-transferase-pi and application to immunohistochemical study. *J Histochem Cytochem* 1989; 37 (8): 1247-1252.
- 4.- Alin P, Jensson H, Guthenberg C, Danielson UH, Tahir MK, Mannervik B; Purification of major basic glutathione transferase isoenzymes from rat liver by use of affinity chromatography and fast protein liquid chromatofocusing. *Anal Biochem* 1985; 146: 313-320.
- 5.- Ansari GAS, Singh SV, Awasthi YC; Human erythrocyte glutathione S-transferase: a possible marker of chemical exposure. *Toxicol Lett* 1987; 37: 57-62.
- 6.- Archibald A, Shuster S; Measurement of sebum secretion in the rat. *J Dermatol* 1970; 82: 146-151.
- 7.- Aw TY, Wierzbicka G, Jones DP; Oral Glutathione Increases Tissue Glutathione In vivo. *Chem Biol Interact* 1991; 80 (1): 89-97.
- 8.- Axelrod M, Serafin D, Klitzman B; Ultraviolet light and free radicals: an immunologic theory of epidermal carcinogenesis. *Plast Reconst Surg* 1990; 86 (3): 582-593.
- 9.- Baron J, Voigt JM, Whitter TB, Kawabata TT, Knapp SA, Guengerich FP, Jakoby WB; Identification of intratissue sites for xenobiotic activation and detoxification. *Adv Exp Med Biol* 1986; 197: 119-144.

BIBLIOGRAFIA

- 10.- Bass NM, Kirsch RE, Tuff SA, Marks I, Saunders SJ; Ligandin heterogeneity: evidence that the two non-identical subunits are the monomers of two distinct proteins. *J Biochim Biophys Acta* 1977; 492: 163-175.
- 11.- Bast A, Haenen GRMM, Doelman CJA; Oxidants and antioxidants: state of the art. *Am J Med* 1991; 91 (suppl 3C): 2-13.
- 12.- Bast A, Haenen GRMM; Interplay between lipoic acid and glutathione in the protection against microsomal lipid peroxidation. *Biochim Biophys Acta* 1988; 963: 558-561.
- 13.- Bauman PF, Smith TK, Bray TM; The effect of dietary protein and sulfur amino acids on hepatic glutathione concentration and glutathione-dependent enzyme activities in the rat. *Can J Physiol Pharmacol* 1988; 66 (8): 1048-1052.
- 14.- Bell DA; Detection of DNA Sequence Polymorphisms in Carcinogen Metabolism Genes by Polymerase Chain Reaction. *Environ Mol Mutagen* 1991; 18 (4): 245-248.
- 15.- Benson AM, Talalay P; Role of reduced GSH in the Δ^5 -3-ketosteroid isomerase reaction of liver. *Biochem Biophys Res Commun* 1976; 69 (4): 1073-1079.
- 16.- Benson AM, Talalay P, Ken JH, Jakoby WB; Relationship between the soluble glutathione-dependent Δ^5 -3-ketosteroid isomerase and the glutathione S-transferases of the liver. *Proc Natl Acad Sci USA* 1977; 74 (1): 158-162.
- 17.- Biaglow JE, Varnes ME, Epp ER, Clark EP; Antioxidant and redox enzymes in radioprotection. *Pharmacol Ther* 1988; 39: 275-286.
- 18.- Black HS; Potential involvement of free radical reactions in ultraviolet light-mediated cutaneous damage. *Photochem Photobiol* 1987; 46 (2): 213-221.
- 19.- Board PG; Transport of glutathione S-conjugate from human erythrocytes. *FEBS Lett* 1980; 124 (2): 163-165.
- 20.- Board PG; Biochemical genetics of glutathione S-transferase in man. *Am J Genet Hum* 1981; 33: 36-43.
- 21.- Board PG, Webb GC; Isolation of a cDNA clone and localization of human glutathione S-transferase 2 genes to chromosome band 6p12. *Proc Natl Acad Sci* 1987; 84: 2377-2381.
- 22.- Board PG, Suzuki T, Shaw DC; Human muscle glutathione S-transferase (GST-4) shows close homology to human liver GST-1. *Biochim Biophys Acta* 1988; 953: 214-217.

BIBLIOGRAFIA

- 23.- Bounous G, Gervais F, Amer V, Batist G, Gold P; The influence of dietary whey protein on tissue glutathione and the diseases of aging. *Clin Invest Med* 1989; 12 (6): 343-349.
- 24.- Boyer TD, Vessey DA, Holcomb C, Saley N; Studies of the relationship between the catalytic activity and binding of non-substrate ligands by the GST. *Biochem J* 1984; 217: 179-185.
- 25.- Boyer TD, Vessey DA. Inhibition of human cationic glutathione S-transferase by nonsubstrate ligands. *Hepatology* 1987; 7 (5): 843-848.
- 26.- Boyer TD; The glutathione S-transferases: An update. *Hepatology* 1989; 9 (3): 486-496.
- 27.- Briehl MM, Miesfeld RL; Isolation and characterization of transcripts induced by androgen withdrawal and apoptotic cell death in the rat ventral prostate. *Mol Endocrinol* 1991; 5 (10): 1381-1388.
- 28.- Buege JA, Aust SD; Microsomal lipid peroxidation. *Methods Enzymol* 1978; 30: 302-311.
- 29.- Burgess JR, Chow N-WI, Reddy CCh, Tu Ch-PD; Amino acid substitutions in the human glutathione S-transferases confer different specificities in the prostaglandin endoperoxide conversion pathway. *Biochem Biophys Res Commun* 1989; 158 (2): 497-502.
- 30.- Campbell JAH, Corrigall AV, Guy A, Kirsch RE; Immunohistologic localization of alpha, mu and pi class glutathione S-transferases in human tissues. *Cancer* 1991; 67(6): 1608-1613.
- 31.- Carmagnol F, Sinet PM, Rapin J, Jerome H; Glutathione S-transferase of human red blood cells: assay, values in normal subjects and in two pathological circumstances: hyperbilirubinemia and impaired renal function. *Clin Chim Acta* 1981; 117: 209-217.
- 32.- Carmichael J, Forrester LM, Lewis AD, Hayes JD, Hayes PC, Wolf CR; GST isoenzymes and glutathione peroxidase activity in normal and tumour samples from human lung. *Carcinogenesis* 1988; 9 (9): 1617-1621.
- 33.- Carmichael J, Mitchell JB, Friedman N, Gazdar AF, Russo A; Glutathione and related enzyme activity in human lung cancer cell lines. *Br J Cancer* 1988; 58: 437-440.
- 34.- Ceballospicot I, Trivier JM, Nicole A, Sinet PM, Thevenin M; Age-correlated modifications of copper-zinc superoxide dismutase and glutathione-related enzyme activities in human erythrocytes. *Clin Chem* (1992); 38(1): 66-70.

BIBLIOGRAFIA

- 35.- Cerimele D, Celleno L, Serri F; Physiological changes in ageing skin. *Br J Dermatol* 1990; 122 (suppl.25): 13-20.
- 36.- Clapper ML, Hoffman SJ, Carp N, Watts P, Seestaller LM, Weese JL, Tew KD; Contribution of Patient History to the Glutathione S-Transferase Activity of Human Lung, Breast and Colon Tissue. *Carcinogenesis* 1991; 12 (10): 1957-1961.
- 37.- Clapper ML, Hoffman SJ, Tew KD; Glutathione S-transferases in normal and malignant human colon tissue. *Biochim Biophys Acta* 1991; 1096: 209-216.
- 38.- Clemens MR; Free Radicals in chemical carcinogenesis. *Klin Wochenschr* 1991; 69: 1123-1134.
- 39.- Coles B, Ketterer B; The role of glutathione and glutathione transferases in chemical carcinogenesis. *Crit Rev Biochem Mol Biol* 1990; 25 (I): 47-70.
- 40.- Costagliola C; Oxidative state of glutathione in red blood cells and plasma of diabetic patients: *in vivo* and *in vitro* study. *Clin Physiol Biochem* 1990; 8: 204-210.
- 41.- Cowell IG, Dixon KH, Pemble SE, Ketterer B, Taylor JB; The structure of the human glutathione S-transferase pi gene. *Biochem J* 1988; 255: 79-83.
- 42.- Chasseaud LF; The role of glutathione and glutathione S-transferase in the metabolism of chemical carcinogens and other electrophilic agents. *Adv Cancer Res* 1979; 29: 175-274.
- 43.- Das M, Dixit R, Seth PK, Mukhtar H; Glutathione S-transferase activity in the brain: species, sex, regional and age differences. *J Neurochem* 1981; 36: 1439-1442.
- 44.- De Paulet AC; Radicaux libres et vieillissement. *Ann Biol Clin* 1990; 48 (5): 323-330.
- 45.- DeJong JL, Mohandas T, Tu CPD; The Human Hb (MU)-Class Glutathione S-Transferases Are Encoded by a Dispersed Gene Family. *Biochem Biophys Res Commun* 1991; 180 (1): 15-22.
- 46.- Del Boccio G, Di Ilio C, Alin P, Jornvall H, Mannervik B; Identification of a novel glutathione transferase in human skin homologous with class alpha glutathione transferase 2-2 in the rat. *Biochem J* 1987; 244: 21-25.
- 47.- Del Boccio G, Di Ilio C, Casalone, Pennelli A, Aceto A, Sacchetta P, Federici G; Purification and characterization of glutathione transferase of human thyroid. *Ital J Biochem* 1987; 36: 8-17.

BIBLIOGRAFIA

- 48.- Delevé LD, Kaplovitz N; Importance and regulation of hepatic glutathione. Semin Liver Dis 1990; 10 (4): 251-266.
- 49.- Dibbelt L, Schulte-Uebbing C, Kuss E; Human placental glutathione transferase: interactions with steroids. Biol Chem Hoppe Seyler 1988; 369: 23-28.
- 50.- Di Ilio C, Sacchetta P, Del Boccio G, La Rovere G, Federici G; Glutathione peroxidase, glutathione S-transferase and glutathione reductase activities in normal and neoplastic human breast tissue. Cancer Lett 1985; 29: 37-42.
- 51.- Di Ilio C, Del Boccio G, Aceto A, Federici G; Alteration of glutathione transferase isoenzyme concentrations in human renal carcinoma. Carcinogenesis 1987; 8 (6): 861-864.
- 52.- Di Ilio C, Aceto A, Bucciarelli T, Angelucci S, Felaco M, Grilli A, Federici G; Glutathione transferase isoenzymes from human prostate. Biochem J 1990; 271: 481-485.
- 53.- Ding GJ-F, Ding VD-H, Rodkey JA, Bennett CD, Lu AYH, Pickett CB; Rat liver glutathione S-transferases. DNA sequence analysis of a Yb₂ cDNA clone and regulation of the Yb₁ and Yb₂ mRNAs by phenobarbital. J Biol Chem 1986; 261 (17): 7952-7957.
- 54.- Dirr HW, Schabot JC; GST composition of rat erythrocytes. Biochem Int 1987; 15 (2): 381-384.
- 55.- Dirr HW, Mann K, Huber R, Ladenstein R, Reinemer P; Class-pi Glutathione S-Transferase from Pig Lung - Purification, Biochemical Characterization, Primary Structure and Crystallization. Eur J Biochem 1991; 196 (3): 693-698.
- 56.- Duke JB; The biology of oxygen radicals. Science 1978; 201:875-880.
- 57.- Ebbling FJ; The action of testosterone on the sebaceous gland and epidermis in castrated and hypophysectomized male rats. J Endocrinol 1957; 15: 297-306.
- 58.- Ebbling FJ; The action of testosterone and estradiol on the sebaceous glands and epidermis of the rat. J Embryol Exp Morphol 1957; 5: 74-82.
- 59.- Ebbling FJ; The action of an antiandrogenic steroid 17 α -methyl- β -nortestosterone on sebum secretion in rats treated with testosterone. J Endocrinol 1967; 38: 181-185.
- 60.- Ebbling FJ, Skinner J; The measurement of sebum production in rats treated with testosterone and estradiol. Br J Dermatol 1967; 79: 386-388.

BIBLIOGRAFIA

- 61.- Eidne KA, Bass NM, Sherman M, Millar RP, Kirsch RE; Ligandin concentrations in the steroidogenic tissues of the rat during development. *Biochim Biophys Acta* 1984; 801: 424-428.
- 62.- Ellman GL; Tissue sulphhydryl groups. *Arch Biochem Biophys* 1959; 82: 70-77.
- 63.- Forrester TE, Badaloo V, Bennett FI, Jackson AA; Excessive excretion of 5-oxoproline and decreased levels of blood glutathione in type-II diabetes mellitus. *Eur J Clin Nutr* 1990; 44 (11): 847-850.
- 64.- Freeman BA, Crapo JD; Biology of disease. Free radicals and tissue injury. *Lab Invest* 1982; 47 (5): 412-426.
- 65.- Freundt KJ, Ibrahim HA; Influence of Pb, Cd, Zn, Mn, Cu, Hg or Be Salts on the Glutathione S-Transferases of the Rat Liver. *Bull Environ Contam Toxicol* 1991; 46 (4): 618-624.
- 66.- Fryer AA, Hume R, Strange RC; The development of glutathione S-transferase and glutathione peroxidase activities in human lung. *Biochim Biophys Acta* 1986; 883: 448-453.
- 67.- Fulbert JC, Cals MJ; Les radicaux libre en biologie clinique: origine, rôle pathogène et moyens de défense. *Pathol Biol* 1992; 40 (1): 66-77.
- 68.- Gillery P, Monboisse JC, Maquart FX, Borel JP; Does oxygen free radical increased formation explain long term complications of diabetes mellitus? *Med Hypotheses* 1989; 29: 47-50.
- 69.- Graham RC, Karnovsky MJ; The early stages of absorption of injected horseradish peroxidase in the proximal tubules of mouse kidney: ultrastructural cytochemistry by a new technique. *J Histochem Cytochem* 1966; 14: 291-302.
- 70.- Guichard M, Lespinasse F, Estelin R, Gerbaulet A, Haie C, Lartigau E, Malaise EP, Micheau C, Prade M, Richard JM, Weeger P; Glutathione and cysteine levels in human tumour biopsies. *Br J Radiol* 1990; 63: 557-561.
- 71.- Guthenberg C, Mannervik B; Glutathione S-transferase (transferase π) from human placenta is identical or closely related to glutathione S-transferase (transferase γ) from erythrocytes. *Biochim Biophys Acta* 1981; 661: 255-260.
- 72.- Guthenberg C, Astrand I-M, Alin P, Mannervik B; Glutathione transferases in rat testis. *Acta Chem Scand* 1983; B37 (3): 261-262.
- 73.- Guthenberg C, Warholm M, Rane A, Mannervik B; Two distinct forms of glutathione transferase from human foetal liver. Purification and comparison

BIBLIOGRAFIA

with isoenzymes isolated from adult liver and placenta. Biochem J 1986; 235: 741-745.

74.- Habig WH, Pabst MJ, Jakoby WB; Glutathione S-transferases. The first enzymatic step in mercapturic acid formation. J Biol Chem 1974; 249 (22): 7130-7139.

75.- Halliwell B; Oxidants and human disease: some new concepts. FASEB J 1987; 1: 358-364.

76.- Halliwell B; Current status review: free radicals, reactive oxygen species and human disease: a critical evaluation with special reference to atherosclerosis. Br J Exp Path 1989; 70: 737-757.

77.- Hamilton JB; Male hormone substance: a prime factor in acne. J Clin Endocrinol Metab 1941; 1: 570-592.

78.- Hamilton JB, Mestler GE; Low values for sebum in eunucus and oophorectomized women. Proc Soc Exp Med Biol 1963; 112: 374-378.

79.- Hamilton JB; I. Coarse sternal hairs, a male secondary sex character that can be measured quantitatively: The influence of sex age and genetic factors. II. Other sex-differing characters: relationship to age, to one mother and values of coarse sternal hairs. In "Advances in biology of skin. Hair Growth" vol 9. Montagna W & Dobson RC (eds). Pergamon Press, Oxford 1969: 129-151.

80.- Hayakawa T, Lemahieu RA, Udenfriend S; Studies on glutathione-S-arene oxidase transferase -A sensitive assay and partial purification of the enzyme from sheep liver. Arch Biochem Biophys 1974; 162: 223-230.

81.- Hiley C, Fryer A, Bell J, Hume R, Strange RC; The human glutathionine S-transferases. Immunohistochemical studies of the developmental expression of Alpha- and Pi-class isoenzymes in liver. Biochem J 1988; 254: 255-259.

82.- Hirrell PA, Hume R, Fryer AA, Collins MF, Drew R, Bradwell AR, Strange RC; Studies on the developmental expression of glutathione S-transferase isoenzymes in human heart and diaphragm. Biochim Biophys Acta 1987; 915: 371-377.

83.- Homma H, Listowsky I; Identification of Y_b-glutathione-S-transferase as a major rat liver protein labeled with dexamethasone 21-methanesulfonate. Proc Natl Acad Sci USA 1985; 82: 7165-7169.

84.- Homma H, Maruyama H, Niitsu Y, Listowsky I; A subclass of GST as intracellular high-capacity and high-affinity steroid-binding proteins. Biochem J 1986; 235: 763-768.

BIBLIOGRAFIA

- 85.- Horton R; Glutathione and HIV infection. Lancet 1990; 335: 234.
- 86.- Jakoby WB, Habig WH; Glutathione Transferases. "Enzymatic basis of detoxication" (W. B. Jakoby eds) vol II 63-94 (1980).
- 87.- Jakoby WB; Glutathione transferases-An Overview. Methods Enzymol 1985; 113: 495-498.
- 88.- Johnson JA, Neal TL, Collins JH, Siegel FL; Characterization of methylation of rat liver cytosolic glutathione S-transferases by using reverse-phase h.p.l.c. and chromatofocusing. Biochem J 1990; 270: 483-489.
- 89.- Junod AF; Oxygen free radicals and lungs. Intensive Care Med 1989; 15: S21-S23.
- 90.- Kano T, Sakai M, Muramatsu M; Structure and expression of a human class pi glutathione S-transferase messenger RNA. Cancer Res 1987; 47; 5626-5630.
- 91.- Kantor RRS, Giardina SL, Bartolazzi A, Townsend AJ, Myers CE, Cowan KH, Longo DL, Natali PG; Monoclonal Antibodies to Glutathione S-Transferase Pi-Immunohistochemical Analysis of Human Tissues and Cancers. Int J Cancer 1991; 47 (2): 193-201.
- 92.- Ketterer B, Meyer DJ, Coles B, Taylor JB, Pemble S; Glutathione transferases and carcinogenesis. Antimutagenesis and Anticarcinogenesis mechanisms. Ed. Delbert M. Shankel, Phillip E Hartman, Tsuneo Kada and A Hollaender. Plenum Publishing Corporation 1986: 103-126.
- 93.- Ketterer B; Protective role of glutathione and glutathione transferases in mutagenesis and carcinogenesis. Mutat Res 1988; 202: 343-361.
- 94.- Ketterer B, Meyer DJ; Glutathione transferases: A possible role in the detoxication and repair of DNA and lipid hydroperoxides. Mutat Res 1989; 214: 33-40.
- 95.- Koberda J, Hellmann A; Glutathione S-Transferase activity of leukemic cells as a pronostic factor for response to chemotherapy in acute leukemias. Med Oncol Tumor Pharmacother 1991; 8(1): 35-38.
- 96.- Kodate C, Fukushi A, Narita T, Kudo H, Soma Y, Sato K; Human placental form of GST (GST-pi) as a new immunohistochemical marker for human colonic carcinoma. J Cancer Res 1986; 77 (3): 226-229 (Jp).
- 97.- Kong K-H, Inoue H, Takahashi K; Non-essentiality of cysteine and histidine residues for the activity of human class pi glutathione S-transferase. Biochem Biophys Res Commun 1991; 181 (2): 748-755.

BIBLIOGRAFIA

- 98.- Konohana A, Konohana I, Schroeder WT, O'Brien WR, Amagai M, Greer J, Shimizu N, Gammon WR, Siciliano MJ, Duvic M; Placental GST-pi mRNA is abundantly expressed in human skin. *J Invest Dermatol* 1990; 95: 119-126.
- 99.- Kudo H, Mio T, Kokunai T, Tamaki N, Sumino K, Matsumoto S; Quantitative analysis of glutathione in human brain tumors. *J Neurosurg* 1990; 72: 610-615.
- 100.- Kuzmich S, Tew KD; Detoxification mechanisms and tumor cell resistance to anticancer drugs. *Med Res Rev* 1991; 11 (2): 185-217.
- 101.- Lafuente A, Giralt M, Cervelló I, Pujol F, Mallol J; Glutathione S-transferase activity in human superficial transitional cell carcinoma of the bladder. Comparison with healthy controls. *Cancer* 1990; 65 (9): 2064-2068.
- 102.- Laisney V, Van Cong N, Gross M-S, Parisi I, Foubert C, Weil D, Frézal J; Localisation du groupe synténique LDHA-GST3-ESAS sur le chromosome 11 chez l'homme. Analyses des hybrides homme-rongeur classiques et d'un type nouveau (non adhérents à la paroi). *Ann Genet* 1983; 26 (2): 69-74.
- 103.- Lapierre C; Changes induced in the sebaceous glands by sex hormones applied locally to the skin of the mouse. *C Rend Soc Biol* 1953; 147: 1302-1306.
- 104.- Lash LH, Jones DP; Purification and properties of the membranal thiol oxidase from porcine kidney. *Arch Biochem Biophys* 1986; 247 (1): 120-130.
- 105.- Leibovitz BE, Siegel BV; Aspects of free radical reactions in biological systems: aging. *J Gerontol* 1980; 35 (1): 45-56.
- 106.- Leung M-F, Chou I-N; Relationship between 1,chloro-2,4-dinitrobenzene-induced cytoskeletal perturbations and cellular glutathione. *Cell Biol Toxicol* 1989; 5 (1): 51-66.
- 107.- Li N-Q, Reddanna P, Thyagaraju K, Reddy CCh, Tu Ch-PD; Expression of glutathione S-transferases in rat brains. *J Biol Chem* 1986; 261 (17): 7596-7599.
- 108.- Listowsky I, Abramovitz M, Homma H, Niitsu Y; Intracellular binding and transport of hormones and xenobiotics by glutathione-S-transferases. *Drug Metab Rev* 1988; 19 (3/4): 305-318.
- 109.- Lowry OH, Rosebrough NJ, Farr AL, Randall RJ; Protein measurement with the folin phenol reagent. *J Biol Chem* 1951; 193: 265-275.
- 110.- Mallol J, Giralt M; Inhibition of hepatic glutathione S-transferase (GST) by androgenic steroids. *J Steroid Biochem* 1990; 36 (suppl): 69S.

BIBLIOGRAFIA

- 111.- Mangione S, Kueppers F, Puglia C, Greenspon LW; Erythrocytes Prevent Inactivation of Alpha1-Antitrypsin by Cigarette Smoke. *Eur Respir J* 1991; 4 (1): 26-30.
- 112.- Mannervik B, Jensson H, Alin P, Örning L and Hammarström S; Transformation of leukotrine A₄ methyl ester to leukotrine C₄ monomethyl ester by cytosolic rat glutathione transferases. *FEBS Lett* 1984; 174 (2): 289-293.
- 113.- Mannervik B; The isoenzymes of glutathione transferase. *Adv Enzymol* 1985; 57: 357-417.
- 114.- Mannervik B, Alin P, Guthenberg C, Jensson H, Tahir MK, Warholm M, Jornvall H; Identification of three classes of cytosolic glutathione transferase common to several mammalian species: correlation between structural data and enzymatic properties. *Proc Natl Acad Sci USA* 1985; 82: 7202-7206.
- 115.- Mannervik B, Castro VM, Danielson VH, Tahir MK, Hansson J, Ringborg U; Expression of class pi glutathione transferase in human malignant melanoma cells. *Carcinogenesis* 1987; 8 (12): 1929-1932.
- 116.- Mannervik B, Danielson UH; GST- Structure and catalytic activity. *Crit Rev Biochem Mol Biol* 1988; 23 (3): 283-337.
- 117.- Mannervik B, Awasthi YC, Board PG, Hayes JD, Di Ilio C, Ketterer B, Listowsky I, Morgenstern R, Muramatsu M, Pearson WR, Pickett CB, Sato K, Widersten M, Wolf CR; Nomenclature for Human Glutathione Transferases. *Biochem J (Lett)* 1992; 282: 305-306.
- 118.- Marcus CJ, Habig WH, Jakoby WB; Glutathione transferase from human erythrocytes. Nonidentity with the enzymes from liver. *Arch Biochem Biophys* 1978; 188 (2): 287-293.
- 119.- Massoud R, Lobello M, Destefano E, Molino A, Zelaschi D, Federici G; Monoclonal antibodies against human placental Glutathione Transferase (Class-pi). *Hybridoma* 1991; 10 (1): 89-94.
- 120.- Masters JRW; Biochemical basis of resistance to chemotherapy. *Radiother Oncol* 1990; 19 (4): 297-305.
- 121.- Maruyama H, Listowsky I; Preferential binding of steroids by anionic forms of rat glutathione S-transferase. *J Biol Chem* 1984; 259 (20): 12449-12455.
- 122.- Meffert H, Diezel W, Sönnichsen N; Stable lipid peroxidation products in human skin: detection, ultraviolet light-induced increase, pathogenic importance. *Experientia* 1976; 32 (11): 1397-1398.

BIBLIOGRAFIA

- 123.- Meister A; New aspects of glutathione biochemistry and transport: selective alteration of glutathione metabolism. *Nut Rev* 1984; 42: 3031-3042.
- 124.- Meyer DJ, Ketterer B; $5\alpha,6\alpha$ -Epoxy-cholestane-3 β -ol(cholesterol α -oxide): A specific substrate for rat liver glutathione transferase B. *FEBS Lett* 1982; 150 (2): 499-502.
- 125.- Meyer DJ, Coles B, Pemble SE, Gilmore KS, Fraser GM, Ketterer B; Theta, a New Class of Glutathione Transferases Purified from Rat and Man. *Biochem J* 1991; 274: 409-414.
- 126.- Mezzetti A, Lapenna D, Calafiore A M, Proietti-Franceschilli G, Porreca E, De Cesare D, Neri M, Di Ilio C, Cuccurullo F; Glutathione-related enzyme activities and lipoperoxide levels in human internal mammary artery and ascending aorta. Relations with serum lipids. *Arterioscler Thromb* 1992; 12: 92-98.
- 127.- Mihailovic MLJ, Lorenc L, Dabovic M, Bjelakovic M; Free-radical oxidative transformations of androst-4-ene-3 β ,9 α ,17 β -triol 3,17-diacetate. *Tetrahedron* 1988; 44 (19): 6201-6206.
- 128.- Mitra A, Govindwar S, Kulkarni AP; Inhibition of Hepatic Glutathione-S-Transferases by Fatty Acids and Fatty Acid Esters. *Toxicol Lett* 1991; 58 (2): 135-141.
- 129.- Moorghen M, Cairns J, Forrester LM, Hayes JD, Hall A, Cattan AR, Wolf CR, Harris AL; Enhanced expression of Glutathione S-Transferases in colorectal carcinoma compared to non-neoplastic mucosa. *Carcinogenesis* 1991; 12 (1): 13-17.
- 130.- Morgenstern R, Meijer S, Depierre JW, Ernster L; Characterization of rat liver microsomal glutathione S-transferase activity. *Eur J Biochem* 1980; 104: 167-174.
- 131.- Morgenstern R, Guthenberg C, Depierre JW; Microsomal glutathione S-transferase. Purification, initial characterization and demonstration that it is not identical to the cytosolic glutathione S-transferases A, B and C. *Eur J Biochem* 1982; 128: 243-248.
- 132.- Morrow CH, Cowan KH; Glutathione S-Transferase and Drug Resistance. *Cancer Cells* 1990; 21: 15-21.
- 133.- Moscow JA, Townsend AJ, Goldsmith ME, Whang-Peng J, Vickers PJ, Poisson R, Legault-Poisson S, Myers CE, Cowan KH; Isolation of the human anionic glutathione S-transferase cDNA and the relation of its gene expression to estrogen-receptor content in primary breast cancer. *Proc Natl Acad Sci USA*

BIBLIOGRAFIA

1988; 85: 6518-6522.

134.- Moscow JA, Fairchild CR, Madden MJ, Ransom DT, Wieand HS, O'Brien EE, Poplack DG, Cossman J, Myers CE, Cowan KH; Expression of anionic Glutathione S-transferases and P- Glycoprotein genes in human tissues and tumors. *Cancer Res* 1989; 49: 1422-1428.

135.- Mukhtar H, Bresnick E; Gluathione-S-epoxide transferase in mouse skin and human foreskin. *J Invest Dermatol* 1976; 66: 161-164.

136.- Mukhtar H; Steroid hormone metabolism in skin. In "Pharmacology of the skin". Mukhtar H (ed). CRS Press, London 1992: pp. 100-109.

137.- Nishihara T, Maeda H, Okamoto K, Oshida T, Mizoguchi T, Terada T; Inactivation of human placenta glutathione S-transferase by SH/SS exchange reaction with biological disulfides. *Biochemical and Biophys Res Commun* 1991; 174 (2): 580-585.

138.- Nogués R, Puerto AM, Giralt M, Cervelló I, Sugrañes JA, Ortín F, Mallol J; Influencia de los lípidos sebáceos en el crecimiento de folículo piloso humano. *Method Find Exp Clin (en premsa)*.

139.- Oesch F, Schmassmann H, Ohnhaus E, Althaus U, Lorenz J; Monooxygenase, epoxide hydrolase, and glutathione S-transferase activities in human lung. Variation between groups of bronchogenic carcinoma and noncancer patients and interindividual differences. *Carcinogenesis* 1980; 1 (10): 827-835.

140.- Ofner P, Douglas WHJ, Spilman SD, Vena RL, Krinsky-Feibush P, LeQuesne PW; Hydroxylation of [³H]5 α -androstane-3 β ,17 β -diol by whole tissue, epithelial cells and fibroblasts from the same hyperplastic human prostate. *J Steroid Biochem* 1985; 22 (3): 391-397.

141.- Ohl VS, Litwack G; Selective inhibition of glutathione S-transferases by 17 β -estradiol disulfate. *Arch Biochem* 1977; 180: 186-190.

142.- Pabst MJ, Habig WH, Jakoby WB; Glutathione S-transferase A. A novel kinetic mechanism in which the major reaction pathway depends on substrate concentration. *J Biol Chem* 1974; 249 (22): 7140-7150.

143.- Pacifici GM, Warholm M, Guthenberg C, Mannervik B, Rane A; Organ distribution of glutathione transferase isoenzymes in the human fetus: differences between liver and extrahepatic tissues. *Biochem Pharmacol* 1986; 35 (9): 1616-1619.

BIBLIOGRAFIA

- 144.- Pacifici GM, Franchi M, Colizzi C, Giuliani L, Rane A; GST in humans: development and tissue distribution. *Arch Toxicol* 1988; 61: 265-269.
- 145.- Parker MW, Lo Bello M, Federici G; Crystallization of Glutathione S-Transferase from human placenta. *J Mol Biol* 1990; 213: 221-222.
- 146.- Pasha KV, Vijayan E; Glutathione and gamma-glutamyl transpeptidase in the adult female rat brain after intraventricular injection of LHRH and somatostatin. *Biochem Int* 1990; 21 (2): 209-217.
- 147.- Peters WHM, Kock L, Nagengast FM, Kremers PG; Biotransformation enzymes in human intestine: critical levels in human intestine: critical low levels in the colon. *Gut* 1991 32: 408-412.
- 148.- Philbert MA, Beiswanger CM, Waters DK, Reuhl KR, Lowndes HE; Cellular and regional distribution of reduced glutathione in the nervous system of the rat: histochemical localization by mercury orange and O-phthaldialdehyde-induced histofluorescence. *Toxicol Appl Pharmacol* 1991; 107: 215-227.
- 149.- Pickett CB, Telakowski-Hopkins CA, Ding GJ-F, Argenbright L, Lu AYH; Rat liver glutathione S-transferases. Complete nucleotide sequence of a glutathione S-transferase mRNA and the regulation of the Ya, Yb and Yc mRNAs by 3-methylcholanthrene and phenobarbital. *J Biol Chem* 1984; 259 (8): 5182-5188.
- 150.- Ploemen JHTM, Vanommen B, Vanbladeren PJ; Irreversible Inhibition of Human Glutathione S-Transferase Isoenzymes by Tetrachloro-1,4-Benzoquinone and Its Glutathione Conjugate. *Biochem Pharmacol* 1991; 41 (11): 1665-1669.
- 151.- Pochi PE, Strauss JS; Sebaceous gland function before and after bilateral orchectomy. *Arch Dermatol* 1963; 88: 729-731.
- 152.- Pochi PE, Strauss JS; Endocrinologic control of development and activity of the human sebaceous gland. *J Invest Dermatol* 1974; 62: 191-201.
- 153.- Polidoro G, Di Ilio C, Sacchetta P, Del Boccio G, Federici G; Isoelectric focusing of brain cortex GSH S-transferase activity in mammals: evidence that polymorphism is absent in man. *Int J Biochem* 1984; 16 (7): 741-746.
- 154.- Pré J; La lipoperoxydation. *Pathol Biol* 1991; 39 (7): 716-736.
- 155.- Puerto AM; Contribución al estudio de la fisiopatología androgénica. Aplicación a la alopecia seborreica masculina. [Tesi Doctoral]. Granada (Spain): Universitat de Granada, 1987. pp 183.

BIBLIOGRAFIA

- 156.- Puerto AM, Mallol J; Regional scalp differences of the androgenic metabolic pattern in subjects affected by male pattern baldness. *Rev Esp Fisiol* 1990; 46 (3): 289-296.
- 157.- Radulovic LL, Kulkarni AP; H.p.l.c. separation and study of the charge isomers of human placental glutathione transferase. *Biochem J* 1986; 239: 53-57.
- 158.- Ramsdell HS, Eaton DL; Mouse liver glutathione S-transferase isoenzyme activity toward aflatoxin B₁-8,9-epoxide and benzo(a)pyrene-7,8-dihydrodiol-9,10-epoxide. *Toxicol Appl Pharmacol* 1990; 105: 216-225.
- 159.- Raza H, Awasthi YC, Zaim MT, Eckert RL, Mukhtar H; Glutathione S-transferases in human and rodent skin: multiple forms and species-specific expression. *J Invest Dermatol* 1991; 96 (4): 463-467.
- 160.- Reed DJ; Glutathione - Toxicological implications. *Ann Rev Pharmacol Toxicol* 1990; 30: 603-631.
- 161.- Reinemer P, Dirr HW, Ladenstein R, Schaffer J, Gallay O, Huber R; The Three-Dimensional Structure of Class-pi Glutathione S-Transferase in Complex with Glutathione Sulfonate at 2.3 Å Resolution. *EMBO J* 1991; 10 (8): 1997-2005.
- 162.- Ricci G, Del Boccio G, Pennelli A, Lobello M, Petruzzelli R, Caccuri AM, Barra D, Federici G; Redox Forms of Human Placenta Glutathione Transferase. *J Biol Chem* 1991; 266 (32): 21409-21415.
- 163.- Robson CN, Lewis AD, Wolf CR, Hayes JD, Hall A, Proctor SJ, Harris AL, Hickson ID; Reduced levels of drug-induced DNA cross-linking in nitrogen mustard-resistant Chinese hamster ovary cells expressing elevated glutathione S-transferase activity. *Cancer Res* 1987; 47: 6022-6027.
- 164.- Romero Alvira D, Villalba Martín MP, Mur Villaplana M, Cabeza Lambán F, Guerrero Navarro L, Simal Gil E; Importancia de los antioxidantes en la alimentación humana. *Med Clin* 1990; 94: 69-75.
- 165.- Saintruf C, Malfoy B, Scholl S, Zafrani B, Dutrillaux B; GST-pi-Gene is frequently coamplified with INT2 and HSTF1 proto-oncogenes in human breast cancers. *Oncogene* 1991; 6 (3): 403-406.
- 166.- Schmidt RJ, Khan L, Chung LY; Are free radicals and not quinones the haptic species derived from urushiol and other contact allergenic mono- and dihydric alkylbenzenes? The significance of NADH, glutathione and redox cycling in the skin. *Arch Dermatol Res* 1990; 282; 56-64.

BIBLIOGRAFIA

- 167.- Scott TR, Kirsch RE; The isolation of a fetal rat liver glutathione S-transferase isoenzyme with high glutathione peroxidase activity. *Biochim Biophys Acta* 1987; 926: 264-269.
- 168.- Seidegard J, Vorachek WR, Pero RW, Pearson WR; Hereditary differences in the expression of the human glutathione transferase active on trans-stilbene oxide are due to a gene deletion. *Proc Natl Acad Sci USA* 1988; 85: 7293-7297.
- 169.- Seidegard J, Pero RW, Markowitz MM, Roush G, Miller DG, Beattie EJ; Isoenzyme(s) of glutathione transferase (class mu) as a marker for the susceptibility to lung cancer: a follow up study. *Carcinogenesis* 1990; 11 (1): 33-36.
- 170.- Shen H, Tamai K, Satoh K, Hatayama I, Tsuchida S, Sato K; Modulation of class pi glutathione transferase activity by sulphydryl group modification. *Arch Biochem Biophys* 1991; 286 (1): 178-182.
- 171.- Sherman M, Campbell JAH, Titmuss SA, Kew MC, Kirsh RE; Glutathione S-transferase in human hepatocellular carcinoma. *Hepatology* 1983; 3 (2): 170-176.
- 172.- Siegers C-P, Böse-Younes H, Thies E, Hoppenkamps R, Younes M; Glutathione and GSH-dependent enzymes in the tumorous and nontumorous mucosa of the human colon and rectum. *J Cancer Res Clin Oncol* 1984; 107: 238-241.
- 173.- Sies H; Oxidative stress: from basic research to clinical application. *Am J Med* 1991; 91 (suppl 3C): 343-350.
- 174.- Singh BR, Shaw RW; Selective inhibition of oat glutathione-S-transferase activity by tetrapyrroles. *FEBS Lett* 1988; 234 (2): 379-382.
- 175.- Singhal SS, Ahmad H, Sharma R, Gupta S, Haque AK, Awasthi YC; Purification and Characterization of Human Muscle Glutathione S-Transferases - Evidence That Glutathione S-Transferase zeta-Corresponds to a Locus Distinct from GST1, GST2 and GST3. *Arch Biochem Biophys* 1991; 285 (1): 64-73.
- 176.- Sluyterman LAA, Wijdenes J; Chromatofocusing: isoelectric focusing on ion exchangers in the absence of an externally applied potential. In: "Proc Int Symp Electrofocusing and Isotachophoresis". Radola BJ, Graesslin D (eds). Berlin, 1977: pp. 463-466.
- 177.- Soter NA, Lewis RA, Corey EJ, Austen KF; Local effects of synthetic leukotrienes (LTC₄, LTD₄, LTE₄ and LTB₄) in human skin. *J Invest Dermatol* 1983; 80: 115-119.

BIBLIOGRAFIA

- 178.- Sparnins VL, Venegas PL, Wattenberg LW; Glutathione S-transferase activity: enhancement by compounds inhibiting chemical carcinogenesis and by dietary constituents. *JNCI* 1982; 68 (3): 493-496.
- 179.- Staal FJ, Ela SW, Roederer M, Anderson MT, Herzenberg LA, Herzenberg LA; Glutathione deficiency and human immunodeficiency virus infection. *Lancet* 1992; 339: 909-912.
- 180.- Stahlberg M-R, Hietanen E; Glutathione and glutathione-metabolizing enzymes in the erythrocytes of healthy children and in children with insulin-dependent diabetes mellitus, juvenile rheumatoid arthritis, coeliac disease and acute lymphoblastic leukaemia. *Scand J Clin Lab Invest* 1990; 50: 125-130.
- 181.- Steinberg P, Schramm H, Schladt L, Robertson LW, Thomas H, Oesch F; The distribution, induction and isoenzyme profile of glutathione S-transferase and glutathione peroxidase in isolated rat liver parenchymal, Kupffer and endothelial cells. *Biochem J* 1989; 264: 737-744.
- 182.- Steisslinger HW, Pfeiderer G; Acidic and basic forms of glutathione S-transferases from human placenta and comparison with human kidney glutathione S-transferase. *Enzyme* 1988; 40: 1-6.
- 183.- Stenberg G, Board PG, Carlberg I, Mannervik B; Effects of directed mutagenesis on conserved arginine residues in a human class alpha Glutathione Transferase. *Biochem J* 1991; 274: 549-555.
- 184.- Stockman P K, Beckett G J, Hayes J D; Identification of a basic hybrid glutathione S-transferase from human liver. Glutathione S-transferase δ is composed of two distinct subunits (B_1 and B_2). *Biochem J* 1985; 227: 457-465.
- 185.- Strange RC, Johnson PH, Lawton A, Moult JA, Tector MJ, Tyminski RJ, Cotton W; Studies on the variability of glutathione S-transferase from human erythrocytes. *Clin Chim Acta* 1982; 120: 251-260.
- 186.- Strange RC, Faulder CG, Davis BA, Hume R, Brown JAH, Cotton W, Hopkinson DA; The human glutathione S-transferases: studies on the tissue distribution and genetic variation of the GST1, GST2 and GST3 isozymes. *Ann Hum Genet* 1984; 48: 11-20.
- 187.- Strange RC, Hiley C, Roberts C, Jones PW, Bell J, Hume R; Studies on copper-zinc superoxide dismutase expression in developing human liver and kidney. *Free Radic Res Commun* 1989; 7 (2): 105-112.
- 188.- Strange RC, Matharoo B, Faulder GC, Jones P, Cotton W, Elder JB, Deakin M; The human glutathione S-transferases: a case-control study of the incidence of the GST1 0 phenotype in patients with adenocarcinoma.

BIBLIOGRAFIA

Carcinogenesis 1991; 12 (1): 25-28.

189.- Strange RC, Fryer AA, Matharoo B, Zhao L, Broome J, Campbell DA, Jones P, Cervelló Pastor I, Singh RVP; The human glutathione S-transferases: comparison of isoenzyme expression in normal and astrocytoma brain. Biochim Biophys Acta 1992; 1139: 222-228.

190.- Strauss JS, Kligman A, Pochi PE; The effect of androgens and estrogens on human sebaceous glands. J Invest Dermatol 1962; 39: 139-156.

191.- Strauss JS, Pochi PE; The hormonal control of human sebaceous glands. In "Advances in Biology of skin". vol IV. Montagna W & Ellis RA (eds). Pergamon Press, Oxford. 1963: 220-254.

192.- Tahir MK, Guthenberg C, Mannervik B; Inhibitors for distinction of three types of human glutathione transferase. FEBS Lett 1985; 181 (2): 249-252.

193.- Tamai K, Shen H, Tsuchida S, Hatayama I, Satoh K, Yasui A, Oikawa A, Sato K; Role of cysteine residues in the activity of rat glutathione transferase P (7-7). Elucidation by oligonucleotide site-directed mutagenesis. Biochem Biophys Res Commun 1991; 179 (2): 790-797.

194.- Taylor JB, Oliver J, Sherrington R, Pemble SE; Structure of human Glutathione S-Transferase class mu genes. Biochem J 1991; 274: 587-593.

195.- Terrier P, Townsend AJ, Coindre JM, Triche TJ, Cowan KH; An immunohistochemical study of pi class glutathione S-transferase expression in normal human tissue. Am J Pathol 1990; 137 (4): 845-853.

196.- Tew KD; The involvement of Glutathione S-Transferases in drug resistance. Anticancer Drugs 1989; 191: 103-112.

197.- Thomas P; Mécanismes physiopathologiques des altérations cutanées photo-induites. Rev Fr Gynécol Obstét 1991; 86 (6): 443-447.

198.- Tu CPD, Weiss MJ, Li NQ, Reddy CC; Tissue-specific expression of the rat glutathione S-transferases. J Biol Chem 1983; 258 (8): 4659-4662.

199.- Turi S, Nemeth I, Vargha I, Matkovics B, Dobos E; Erythrocyte defense mechanisms against free oxygen radicals in haemodialysed uraemic children. Pediatr Nephrol 1991; 5: 179-183.

200.- Tyrrell R M, Pidoux M; Correlation between endogenous glutathione content and sensitivity of cultured human skin cells to radiation at defined wavelengths in the solar ultraviolet range. Photochem Photobiol 1988; 47 (3): 405-412.

BIBLIOGRAFIA

- 201.- Ujihara M, Tsuchida S, Satoh K, Sato K, Urade Y; Biochemical and immunological demonstration of prostaglandin D₂, E₂ and F_{2α} formation from prostaglandin H₂ by various rat glutathione S-transferase isozymes. *Arch Biochem Biophys* 1988; 264 (2): 428-437.
- 202.- Vanbladeren PJ, Vanommen B; The Inhibition of Glutathione S-Transferases - Mechanisms, Toxic Consequences and Therapeutic Benefits. *Pharmacol Ther* 1991; 51 (1): 35-46.
- 203.- Vander Jagt DL, García KB; Immunochemical comparisons of proteins that bind heme and bilirubin: human serum albumin, alpha-fetoprotein and glutathione S-transferases from liver, placenta and erythrocyte. *Comp Biochem Physiol* 1987; 87B (3): 527-531.
- 204.- Vermeulen NPE; Analysis of mercapturic acids as a tool in biotransformation, biomonitoring and toxicological studies. *Trends Pharmacol Sci* 1989; 10: 177-181.
- 205.- Robertson IGC, Guthenberg C, Mannervik B, Jernström B; Differences in stereoselectivity and catalytic efficiency of three human glutathione transferases in the conjugation of glutathione with 7β,8α-dihydroxy-9α,10α-oxy-7,8,9,10-tetrahydrobenzo(a)pyrene. *Cancer Res* 1986; 46: 2220-2224.
- 206.- Vanpoppel G, Devogel N, Vanbladeren PJ, Kok FJ; Increased cytogenetic damage in smokers deficient in Glutathione S-Transferase isozyme-mu. *Carcinogenesis* 1992; 13 (2): 303-305.
- 207.- Waxman DJ; GST: Role in alkylating agent resistance and possible target for modulation chemotherapy - A review. *Cancer Res* 1990; 50: 6449-6454.
- 208.- Waziers I, Cugnenc PH, Berger A, Leroux J-P, Beaune PH; Drug-metabolizing enzyme expression in human normal, peritumoral and tumoral colorectal tissue samples. *Carcinogenesis* 1991; 12 (5): 905-909.
- 209.- Werns SW, Lucchesi BR; Free radicals and ischemic tissue injury. *TIPS* 1990; 11: 161-166.
- 210.- Whyte WL, Pong RS, Buckpitt AR; GSH and GSH S-transferases in the urinary bladder of different species. *Biochem Pharmacol* 1984; 33 (11): 1813-1816.
- 211.- Wiencke JK, Kelsey KT, Lamela RA, Toscano WA; Human Glutathione S-Transferase deficiency as a marker of susceptibility to epoxide-induced cytogenetic damage. *Cancer Res* 1990; 50 (5): 1585-1590.