

§6. Reference:

1. Turner RT, Riggs BL and Spelsberg TC. Skeletal effects of estrogen. *Endocr Rev* 1994;15:275-300.
2. Muramatsu M and Inoue S: Estrogens receptors: how do they control reproductive and nonreproductive functions? *Biochem Biophys Res Commun* 2000; 270:1-10.
3. Thomas DB: Do hormones cause cancer? *Cancer* 1984;53:595-604.
4. Watanabe T, Inoue S, Ogawa S, Ishii Y, Hiroi H, Ikeda K, Orimo A and Muramatsu M: Agonistic effect of tamoxifen is dependent on cell type, ERE-promoter context, and estrogen receptors α and β . *Biophys. Res Commun* 1997; 236:140-145.
5. Kuiper GG, Enmark E, Pelto-Huikko M, Nilsson S, Gustafsson JA: Cloning of a novel receptor expressed in rat prostate and ovary. *Proc Natl Acad Sci USA* 1996;93:5925-5930.
6. Accocia F, Marino M: Synergism between genomic and non genomic estrogen action mechanisms. *IUBMB life* 2003;55:145-150.
7. Mangelsdorf DJ, Thummel C, Beato M, Herrlich P, Schutz G, Umesono K, Blumberg B, Kastner P, Mark M and Chambon P: The nuclear receptors superfamily: the second decade. *Cell* 1995;83:835-839.
8. Tsai MJ, O'Malley BW: Molecular mechanism of action of steroid/thyroid receptor superfamily members. *Annu Rev Biochem* 1994;63:451-486.
9. Giguere V, Yang N, Segui P, Evans RM: Identification of a new class of steroid hormone receptors. *Nature* 1988;331:91-94.
10. Enmark E and Gustafsson JA: Orphan receptors-the first eight years. *Mol Endocrinol* 1996;10:1293-1307.
11. Giguere V: Orphan nuclear receptors: from gene to function. *Endocr Rev* 20: 689-725, 1999.
12. Hong H, Yang L, Stallcup MR: Hormone-independent transcriptional activation and coactivator binding by novel orphan nuclear receptors ERR3. *J Biol Chem* 1999;274: 22618-22626.
13. Eudy JD, Yao S, Weston MD, Ma-Edmonds M, Talmadge CB, Cheng JJ, Kimberling WJ and Sumegi J: Isolation of a gene encoding a novel member of the nuclear receptors superfamily from the critical region of Usher syndrome type II at 1q41. *Genomics* 1998;50:382-384.
14. Woronica JD, Calnan B, Ngo V: Requirement for the orphan receptor Nur77 in apoptosis of T-cell hybridomas. *Nature* 1994;367:277-281.
15. Mangelsdorf DJ, Evans RM: The RXR heterodimers and orphan receptors. *Cell* 1995;83:841-850.,
16. Heard DJ, Norby PL, Holloway J and Vissing H: Human ERR γ , a third member of the estrogen receptor-related receptor (ERR) subfamily of orphan nuclear receptors: tissue -specific isoforms are expressed during development and in the adult. *Mol Endocrinol*

- 2000;14:382-392.
17. Evans RM: The steroid and thyroid hormone receptor superfamily. *Science* 1988;240:889-895.
 18. Shi H, Shigeta H, Yang N, Fu K, O'Brian G and Teng CT: Human estrogen receptor-like 1(ESRL1) gene: genomic organization, chromosomal localization and promoter characterization. *Genomics* 1997;44:52-60.
 19. Yang N, Shigeta H, Shi HP and Teng CT: Estrogen receptor-related receptor, hERR-1, modulates estrogen receptor-mediated response of human lactferrin gene promoter. *J Biol Chem* 1996;271:5795-5804.
 20. Chen F, Zhang Q, McDonald T, Davidoff MJ, Bailey W, Bai C, Liu Q and Caskey CT: Identification of two hERR2-related novel nuclear receptors utilizing bioinformatics and inverse PCR. *Gene* 1999;228:101-109.,
 21. Johnston SD, Liu X, Zuo F, Eisenbraun TL, Wiley SR, Kraus RJ and Mertz JE: Estrogen-related receptor- α 1 functionally binds as a monomer to extend half-site sequence including ones contained within estrogen-response elements. *Mol Endocrinol* 1997;11: 342-352.,
 22. Maglich JM, Sluder A, Guan X, Shi Y, McKee DD, Carrick K, Kamdar K, Willson TM and Moore JT: Comparison of complete nuclear receptor sets from the human, *Caenorhabditis elegans* and *Drosophila* genomes. *Genome Biol* 2001; 2(8): RESEARCH0029. Epub Jul 24, 2001.
 23. Sladek R, Beatty B, Squire J, Copeland NG, Gilbert DJ, Jenkins NA and Giguere V: Chromosomal mapping of the human and murine orphan receptors ERR α (ESRRA) and ERR β (ESRRB) and identification of a novel human ERR α -related pseudogene. *Genomics* 1997;45:320-326.
 24. Ham J and Parker MG: Regulation of gene expression by nuclear hormone receptors. *Curr Opin Cell Biol* 1989;92:22-232.
 25. Glass CK: Different recognition of target genes by nuclear receptor monomers, dimmers and heterodimers. *Endocr Rev* 1994;15:391-407.
 26. Perlmann T and Evans RM: Nuclear receptors in Sicily: all in the famiglia. *Cell* 1997;90:391-397.
 27. Umesono K and Evans RM: Determinants of target gene specificity for steroid/thyroid hormone receptors. *Cell* 1989;57:1139-1146.
 28. Giguere V: To ERR in the estrogen pathway. *Trends Endocrinol Metab* 2003;133: 220-225.
 29. Paech K, Webb P, Kuiper GG, Nilsson S, Gustafsson JA, Kushner PJ, Scanlan TS: Differential ligand activation of estrogen receptors ER α and ER β at AP1 sites. *Science* 1997;277:1508-1510.
 30. Sladek R, Bader JA, Giguere V: The orphan nuclear receptor estrogen-related receptor α is

- a transcriptional regulator of the human medium-chain acyl coenzyme A dehydrogenase gene. *Mol Cell Biol* 1997;17:5400-5409.
31. Bonnelye E, Vanacker JM, Dittmar T, Begue A, Desbiens X, Denhardt DT, Aubin JE, Laudet V and Fournier B: The ERR-1 orphan receptor is a transcriptional activator expressed during bone development. *Mol Endocrinol* 1997;11:905-916.
 32. Vanacker JM, Bonnelye E, Delmarre C and Laudet V: Activation of the thyroid receptor- α gene promoter by the orphan nuclear receptor ERR α . *Oncogene* 1998;17:2429-2435.
 33. Bonnelye E, Vanacker JM, Spruyt N, Alric S, Fournier B, Desbiens X and Laudet V: Expression of the estrogen related receptor -1(ERR-1) orphan receptor during mouse development. *Mech Dev* 1997;65:71-85.
 34. Bonnelye E, Merdad L, Kung V and Aubin JE: The orphan nuclear estrogen receptor-related receptor α (ERR α) is expressed throughout osteoblast Differentiation and regulates bone formation in vitro. *J Biol Chem* 2001;153:971-983.,
 35. Pettersson K, Svensson K, Mattsson R, Carlsson B, Ohlsson R, and Berkenstam A: Expression of a novel member of estrogen response element-binding nuclear receptors is restricted to the early stages of chorion formation during mouse embryogenesis. *Mech Dev* 1997;65:71-85.
 36. Luo J, Sladek R, Bader JA, Matthysen A, Rossant J and Giguere V: Placental abnormalities in mouse embryos lacking orphan nuclear receptor ERR β . *Nature* 1997;388:778-782.
 37. Lorke DE, Susens U, Borgmeyer U and Hermans-Borgmeyer I: Different expression of the estrogen receptor-related receptor γ in the mouse brain. *Brain Res Mol Brain Res* 2000;77: 277-280.
 38. Susens U, Hermans-Borgmeyer I, Borgmeyer U: Alternative splicing and expression of the mouse estrogen receptor-related receptor gamma. *Biochem Biophys Res Commun* 2000;267:532-53.
 39. Xie W, Hong H, Yang NN, Lin RJ, Simon CM, Stallcup MR and Evans RM: Constitutive activation of transcription ad binding of coactivator by estrogen-related receptors 1 and 2. *Mol Endocrinol* 1999;13:2151-2162.,
 40. Lu D, Kiriyma Y, Lee KY and Giguere V: Transcription regulation of the estrogen-inducible pS2 breast cancer marker gene by ERR family of orphan nuclear receptors. *Cancer Res* 2001;61:6755-6761.
 41. Zhang Z, and Teng TC: Estrogen receptor α and estrogen receptor-related receptor α 1 compete for binding and coactivator. *Mol Cell Endocrinol* 2001;172:223-233.
 42. Kraus RJ, Ariazi EA, Farrell MI and Mertz JE: Estrogen-related receptor α 1 actively antagonizes estrogen receptor-regulated transcription in MCF-7 mammary cells. *J Biol Chem* 2002;277:248626-24834.
 43. Vanacker JM, Bonnelye E, Chopin-Delannoy S, Delmarre C, Cavailles V and Laudet V:

- Transcriptional activities of the orphan nuclear receptor ERR α (estrogen receptor-related receptor- α). Mol Endocrinol 1999;13:764-733.
44. Chen S, Zhou D, Yang C and Sherman M: Molecular basis for the constitutive activity of estrogen-related receptor α -1. J Biol Chem 2001;276:28465-28470.
45. Ostberg T, Jackbsson M, Attersand A, Urquiza AM, Jendeberg L: A triple mutant of the drosophila ERR confers ligand-induced suppression of activity. Biochem 2003;42:6427-6435.
46. Horard, B and Vanacker, JM: Estrogen receptor-related receptors: orphan receptors desperately seeking a ligand. J Mol Endocrinol 2003;31:349-57.
47. Yang N and Chen S: Two organochlorine pesticides, toxaphene and chlordane, are antagonists for estrogen-related receptor α -1 orphan receptor. Cancer Res 1999;59: 4519-4524.
48. Tremblay GB, Kunath T, Bergeron D, Lapointe L, Champigny C, Bader JA, Rossant J and Giguere V: Diethylstilbestrol regulates trophoblast stem cell differentiation as a ligand of orphan nuclear receptor ERR β . Genes Dev 2001;15:833-838.
49. Coward P, Lee D, Hull MV and Lehmann JM: 4-hydroxytamoxifen binds to and deactivates the estrogen-related receptor γ . Proc Natl Acad Sci USA 2001;98: 8880-8884.
50. Tremblay GB, Bergeron D, Giguere V: 4-hydroxytamoxifen is an isoform-specific inhibitor of orphan estrogen-receptor-related (ERR) nuclear receptors β and γ . Endocrinology 2001;142: 4572-4576.
51. Kamei Y, Ohizumi H, Fujitani Y, Nemoto T, Tanaka T, Takahashi N, Kawada T, Miyoshi M, Ezaki O and Kakizuka A: PPAR γ coactivator 1 β /ERR ligand 1 is an ERR protein ligand, whose expression induces a high-energy expenditure and antagonizes obesity. Proc Natl Acad Sci USA 2003;100:12378-12383.
52. Vanacker JM, Pettersson K, Gustafsson JA and Laudet V: Transcriptional targets shared by estrogen receptor-related receptors (ERRs) and estrogen receptor (ER) α but not by ER β . J Biol Chem 1999;18:4270-4279.
53. Luo X, Ikeda Y and Parker KL: A cell-specific nuclear receptor is essential for adrenal and gonadal development and sexual differentiation. 1994;Cell 77: 481-490.
54. Freedman L P: Increasing the complexity of coactivation in nuclear receptor signaling. Cell 1999;97:5-8.
55. Gao X, Loggie BW, Nawaz Z: The roles of sex steroid receptor coregulators in cancer. Mol Cancer 2002;1:1-7.
56. Schreiber SN, Knutti D, Brogli K, Uhlmann T, Kralli A: The transcriptional coactivator PGC-1 regulates the expression and activity of the orphan nuclear receptor ERR α . J Biol Chem 2003;278:9013-9018.
57. Sanyal S, Kim JY, Kim HJ, Takeda J, Lee YK, Moore DD and Choi HS: Differential

- regulation of the orphan nuclear receptor SHP gene promoter by orphan nuclear receptor ERR isforms. *J Biol Chem* 2002;277:1739-1748.
58. Zhang Z, and Teng, TC: Estrogen receptor-related receptor alpha 1 interacts with coactivator and constitutively activates the estrogen response elements of the human lactoferrin gene. *J Biol Chem* 2000;275:20837-20846.
59. Bonnelye E, Kung V, Laplace C, Galson DL and Aubin JE: Estrogen receptor-related receptor α impinges on the Estrogen axis in bone: potential function in osteoporosis. *Endocrinology* 2002;143:3658-3670.
60. Makishima M, Okamoto AY, Repa JJ, Tu H, Learned RM, Luk A, Hull MV, Lustig KD, Mangelsdorf DJ, Shan B: Identification of a nuclear receptor for bile acids. *Science* 1999;284:1362-1365.
61. Huss JM, Kopp RP, Kelly DP: Peroxisome proliferator-activated receptor coactivator-1 α (PGC-1 α) coactivates the cardiac-enriched nuclear receptors estrogen-related receptor- α and- α . Identification of novel leucine-rich interaction motif within PGC-1 α . *J Biol Chem* 2002;277:40265-40274.
62. Hentschke M, Susens U, Borgmeyer U: PGC-1 and PERC, coactivators of the estrogen receptor-related receptor gamma. *Biochem Biophys Res Commun* 2002;299:872-879.
63. Yang C, Zhou D, Chen S: Modulation of aromatase expression in the breast tissue by ER α -1 orphan nuclear receptor. *Cancer Res* 1998;58: 5695-5700.
64. Vanacker JM, Delmarre C, Guo X and Lauden V: Activation of the Osteopontin promoter by the orphan nuclear receptor estrogen receptor related α . *Cell Growth Differ* 1998;9: 1007-1014.
65. Trapp T and Holsboer F: Nuclear orphan receptor as a repressor of glucocorticoid receptor transcriptional activity. *J Biol Chem* 1996;271:9879-9882.
66. Rollerova E and Urbancikova M: Intracellular estrogen receptors, their characterization and function. *Endocr Reg* 2000;34: 203-218.
67. Sanchez R, Nguyen D, Rocha W, White JH and Mader S: Diversity in the mechanisms of gene regulation by estrogen receptors. *Bioessays* 2002;24:244-254.
68. Clinton GM and Hua W: Estrogen action in human ovarian cancer. *Crit Rev Oncol Hematol* 1997;25:1-9.
69. Russo J, Hu YF, Yang X and Russo IH: Developemntall, cellular and molecular basis of human breast of human breast cancer. *J Natl Cancer Inst Monogr* 2000;27:17-37.
70. Ariazi EA, Clark GM and Mertz JE: Estrogen-related receptor α and Estrogen-relate receptor γ associated with unfavorable and favorable biomarkers, respectively in human breast cancer. *Cancer Res* 2002;62: 6510-6518.
71. Suzuki T, Miki Y, Moriya T, Shimada N, Ishida T, Hisakawa H, Ohuchi N, Sasano H: Estrogen-related receptor α in human breast carcinoma as a potent prognostic factor.

- Cancer Res 2004;64:4670-4676.
72. Chen S, Itoh T, Wu K, Zhou D and Yang C: Transcriptional regulation of aromatase expression in human breast tissue. J Steriod Biochem Mol Bio 2003;83:93-99.
73. Landis SH, Murray T, Bolden S, Wingo PA: Cancer statistics. CA Cancer J Clin 1999;49:8-31.
74. Sehouli J, Akdogan Z, Heinze T, Konsgen D, Stengel D, Mustea A, Lichtenegger W: Preoperative determination of CASA and CA-125 for the discrimination between benign and malignant pelvic tumor mass: a prospective study. Anticancer Res 2003;23: 1115-1118.
75. Brandenberger AW, Tee MK, Jaffe RB. Estrogen receptor alpha and beta mRNAs in normal ovary, ovarian serous cystadenocarcinoma and ovarian cancer cell lines: down-regulation of ER- β in neoplastic tissues. J Clin Endocrinol Metabol 1998;83:1025-1028.
76. Lau KM, Mok SC and Ho SM. Expression of human estrogen receptor- α and- β , progesterone receptor and androgen receptor mRNA in normal and malignant ovarian epithelial cells. Proc Natl Acad Sci USA 1999;96: 5722-5727.
77. Scambia G, Ferrandina G, D'Agostino G, Fagotti A, Stefano MD, Fanfani F, Serri FG, Mancuso S: Oestrogen and progesterone receptors in ovarian carcinoma. Endocr Relat Cancer 1998;5:293-301.
78. Akahira J, Suzuki T, Ito K, Kaneko C, Darnel AD, Moriya T, Okamura k, Yaegashi N, Sasano H. Differential expression of progesterone receptor isoforms A and B in the normal ovary, and in benign, borderline, and malignant ovarian tumors. Jpn J Cancer Res 2002;93:807-815.
79. Kommooss F. In "Hormone-Dependent Cancer" editor Pasqualini JR and Katzenellenbogen, pp. 541-572, Dekker, New York, 1995.
80. Hua W, Christanson T, Rougeot C, Rochefort H, Clinton GM: SKOV-3 ovarian carcinoma has functional estrogen receptor but are growth-resistant to estrogen and antiestrogens. J Steroid Biochem Molec Biol 1995;55:279-289.
81. Papadimitriou CA, Markaki S, Siapkara S, Vlachos G, Efstatouli E, Griman I, Hamilos G, Zorou M, Dimopoulos MA: Hormonal therapy with letrozole for relapsed epithelial ovarian cancer. Long-term results of a phase II study. Oncology 2004;66:112-117.
82. Williams CJ and Simera I: Tamoxifen for relapse of ovarian cancer. The Cochrane Library, 3 Chichester, UK: John Wiley & Sons, Ltd, 2004.
83. Bowman A, Gabra H, Langdon Sp, Lessells A, Stewart M, Young A, Smyth JF: CA-125 response is associated with estrogen receptor expression in a phase II trial of letrozole in ovarian cancer: identification of an endocrinesensitive subgroup. Clin Cancer Res 2002;8:2233-2239.
84. Kyo S, Kanaya T, Takakura M, Tanaka M, Yamashita A, Inoue H, Inoue M: Expression of human telomerase subunits in ovarian malignant, borderline and benign tumors. Int J

- Cancer 1999;80:804-809.
85. Cheung CP, Yu S, Wong KB, Chan LW, Lai FM, Wang X, Suetsugi M, Chen S, Chan FL: Expression and function study of estrogen receptor-related receptor in human prostatic cells and tissues. J Clin Endocrinol 2004;90:1830-1844.
86. Allred DC, Harvey JM, Berardo M, Clark GM: Prognostic and Predictive factors in breast cancer by immunohistochemical analysis. Mol Pathol 1998;11:155-15.
87. Deavers TM, Malpica A, Silva EG. Immunohistochemistry in gynecological pathology. Int J Gynecol Cancer 2003;13:567-579.
88. Gaub MP, Bellard M, Scheuer I, et al: Activation of the ovalbumin gene by the estrogen receptor involves the Fos-Jun complex. Cell 1990;63:1267-1276.
89. Saegusa M, Okayasu I: Changes in expression of estrogen receptors α and β in relation to progesterone receptor and pS2 status in normal and malignant endometrium. Jpn J Cancer Res 2000;91:510-518.