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Journal of Steroid Biochemistry & Molecular Biology 74 (2000) 243

The Journal of Steroid Biochemistry & Molecular Biology

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Preface

Estrogens and women's health—benefit or threat? Nobel Symposium No 113, June 29–July 1, 1999—Karlskoga, Sweden

Estrogens and women's health currently represents one of the most intensely debated medical problems, both nationally and internationally and both among professionals and the public. Important issues are e.g. risk for breast and endometrial cancer in connection with hormone replacement therapy, possible harmful effects of environmental estrogens, possible beneficial (or harmful!) effects of fytoestrogens, true efficacy of estrogen substitution to prevent/cure osteoporosis, cardiovascular disease, urinary incontinence, Alzheimer's disease and other neurodegenerative diseases etc. All these considerations constitute good reasons to bring together experts in the field of estrogen action as well as closely related fields to obtain an update on recent advances that might help to provide some answers to the questions formulated above.

Estrogens are perhaps the best studied of all steroid hormones. Our basic understanding of mechanisms of action of estrogens has increased tremendously during the last few decades. Through the pioneering work of Elwood Jensen estrogen receptors were discovered as the first example of steroid receptors. During the last few years new and completely unanticipated knowledge has changed our views considerably as to how estrogens act. The cloning of the novel estrogen receptor β in 1995, first reported at a Keystone meeting in March 1996, has opened up new dimensions and helps to explain some of the old mysteries of estrogen action. Intriguingly, ERβ seems to oppose the actions of ERα, at least in some tissues, and this ying-yang relationship needs to be considered when designing novel, receptor subtype specific estrogenic drugs. Furthermore, the three-dimensional structures of the ligand-binding domains of both ER subtypes have now been solved, liganded with both agonists and antagonists thus yielding a much clearer understanding of the molecular mechanisms of estrogen antagonism. Transgenic mice deleted with respect to each of the two ERs, or both, have been generated and continue to give exciting data on the biology of estrogen receptors, e.g. with respect to reproduction, cardiovascular function and behavior. The molecular biology of estrogen and other steroid hormone receptors has exploded into a new chapter with the emerging, seemingly never-ending number of coactivators/corepressors, often assembled into impressive multisubunit protein machines, of essential importance for the downstream signalling of steroid receptors in their regulation of rate of transcription of target genes. All of these fascinating topics as well as other exciting and related research work are represented in this Nobel Symposium issue.

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0960-0760/00/$ - see front matter
PII: S0960-0760(00)00182-5