Regulation of Gene Expression:
—Clustered arrangement of DNA sequences bound by steroid receptor and other transcription factors;
—Thyroid Hormones and Expression of Cardiac Myosin heavy chain genes:
—Neural and pharmacological control of biological rhythms;
—Visualization of central and peripheral hormonal receptors.
Guanine Nucleotide Binding Proteins:
—The function of the mammalian *ras* proteins;
—Modulation of the substrate specificity of protein phosphatases. Phosphatases and kinases; a dialogue;
—Implication of protein-kinase C in the regulation of adrenocortical cell differentiated functions;
—Biochemical methods for mapping local functional activity in the nervous system.

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The *14th European Symposium on Hormones and Cell Regulation* focused on two complementary areas. The first concerns gene regulation including the control of proto-oncogenes and antioncogenes. The studies presented start from the fundamental problems of the control of gene expression considering the modulation of protooncogenes and antioncogenes in cell proliferation, and end with the role of oncogenes in cell transformation. The second area is the relation of the cell with its environment through ionic channels and receptors for extracellular signals. In these fields also the genes of the proteins are cloned or about to be cloned and the sequences will give us crucial information on their function.

This volume contains the *Proceedings of the 14th Symposium* as follows:

Surface Receptors and Cyclases:
—Guanylate cyclase as a cell surface receptor;
—Transmembrane signal transduction in *Dictyostelium mutans*;
—Ca^{2+} requirement of MSH-receptor function: an unusual example among G-protein associated peptide hormone receptors;
—Irreversible V2 vasopressin receptor activation: effect on down-regulation of the c-AMP mediated cellular response;
—AMPA-sensitive excitatory aminoacid receptors in the chick brain;
—Homology cloning of cDNAs amplified by the polymerase chain reaction. Identification of four new members of the G-protein coupled receptor family.
Regulation of Gene Expression:
—Promoter and enhancer activation properties of the glucocorticoid receptor;
—Transcriptional regulation of the tyrosine aminotransferase gene; structure of a regulatory switch;
—Regulation of expression of the gene encoding aromatase cytochrome *P*-450;
—AP1 and PEA3 are nuclear targets for transcription activation by non-nuclear oncogenes.
Growth Factors:
—The epidermal growth factor receptor and its role in cell transformation;
—Microglial cell functions during brain development.
Controls Mechanisms in other Systems:
—Control of B cell activation in humans;
—Towards an animal model for retinoblastoma;
—Transcriptional activity of the octamer motif in embryonic stem cells and preimplantation embryos.
Ion Channels:
—The role of the ATP-sensitive K-channel in stimulus-response coupling in pancreatic β-cell;
—The plasma membrane Ca^{2+} pump: structural, functional and genetic aspects of isoform diversity;
—Growth control by proton transport: evolutionary considerations and novel approaches based on the cloned yeast proton pump;
—Membrane events involved in the action of endothelin and other vasoconstricting hormones.