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Titolo	Role of the transcriptome in breast cancer prevention // Jose Russo, Irma H. Russo
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Altri autori (Persone)	Russolrma H
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface -- The epidemiology of breast cancer and the basis for prevention -- In vivo model for breast cancer prevention -- Comparative effects of the preventive effect of pregnancy, steroidal hormones and hCG in the transcriptomic profile of the rat mammary gland -- The use of in vitro three-dimensional system for testing preventing agents -- Methodological approach fro studying the human breast -- The transcriptoma of breast cancer prevention -- Chromatin remodeling and pregnancy induced differentiation -- The role of spliceosome in the human breast -- Non coding RNAs and breast cancer prevention -- The role of stem cell in breast cancer prevention -- Index.
Sommario/riassunto	This book is designed for advanced students and researchers in cell biology, biochemistry, molecular biology, medicine in general, and cancer in particular. It provides the latest data on the transcriptome of the mammary gland in order to establish the molecular and cellular biology of differentiation leading to cancer prevention. The authors have based their work on the epidemiological evidence that early first full term pregnancy is a protective factor in humans against breast cancer and using this knowledge have developed in vivo and in vitro experimental systems that have demonstrated mechanistically how the

differentiation takes place. The transcriptoma analysis of the female breast shows that an early first full term pregnancy reprograms the organ by imprinting a genomic signature that differs according to reproductive history. This reprogramming takes place at the chromatin level by changing the transcriptional process. The modification of the transcriptional control is due to the expression of non-coding RNA sequences and post-transcriptional control driven by the spliceosome. The plasticity of the genome of the human breast makes possible this reprogramming that is not only induced by the physiological process of pregnancy but by the use of hormones mimicking pregnancy. The role of stem cells and their reprogramming during differentiation are presented as a new paradigm in breast cancer prevention.
