T
his issue of Period Biol compiles a set of studies ranging from origi-
nal scientific articles to reviews in oncology. Some deal with genes
(and functional disturbances caused by their mutations) known to be
important in the generation of cancer, and other report on genes that
might be involved in cancerogenesis. It is a collection of selected reader’s
digest for a wide variety of biologists, clinicians and others interested in
the future of cancer research.

Among realizations resulting from sequencing the human genome
was the fact that cancer is basically a genetic disease. We now know that
cancer – in order to become a deadly disease – must accumulate at least
six mutations dispersed across the six functionally linked groups of
genes: proto-oncogenes, tumor-suppressor genes, processes like angio-
genesis, cell immortalization, drug detoxification and cell invasiveness
including metastasis. The number of candidate genes involved in all
forms of cancer is over 400 and rising. However, further research would
yield better understanding about their actions and their roles in various
types of cancer.

It is also unknown how these cancer-causing genes might be con-
nected with genes controlling the function of other tissues, organs and
organic systems like for example the immune system or the neuro-
endocrine and reproductive systems. And, lastly, the environmental
influences, perhaps via epigenetic modification of yet unknown (number
of) genes, might also be directly or indirectly implicated in the etiology of
cancer.

Comparably, clinical relevance of outcomes of such basic research
would be indispensable for more successful patient treatment and care.
The research into these issues is predicted to pick up the pace in the
future.

Therefore, there is a need to report more often on the novelties in
this field of exploration. With this dedicated-to-oncology issue of Period
Biol we aimed to introduce the arising new basic cancer research and
prepare scientists as well as clinicians for novel advancing outcomes.