Development of a Test Battery For Epigenetic Non-genotoxic Carcinogens
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Background
It is known that carcinogens designated on the basis of long term animal test results are annoyingly prone to variation, both in terms of potency and mechanism of action, which leads to complexity in their assessment for cancer risk to humans. The classification of carcinogens into two categories, namely, Genotoxic and Non-Genotoxic has been proposed to give a foundation on which cancer risk assessment can be reasonably based. The term “Genotoxic Carcinogens” indicates a class of agents producing cancer by directly altering the genetic material of target cells, while “Non-Genotoxic Carcinogens” represents a class of agents producing cancer by some secondary mechanism not related to direct DNA damage (Peters et al., 1992). Epigenetic changes are thought to be associated with changes in DNA methylation and histone deacetylation. Epigenetic changes could be reversible, in contrast to mutations, and may be involved in the development and expression of cancer. DNA methylation and histone deacetylation can be important mechanisms for “epigenetic change” or “epigenetic changes” to occur. Thus, these changes may play a role in carcinogenesis.

Methodology
A study of Effects of Naphthalene on Apoptosis

Discussion
Different classes of non-genotoxic carcinogens behave in a variety of different ways and their mechanisms of action of these carcinogens include tumor initiation, decreased GJC and altered expression of critical genes including cell growth, cell death and DNA repair through changes in DNA methylation. DNA methylation seems to be the most important mechanism for “Epigenetic change” to occur.

Cytochrome c has an important function in animal development. GJC involved in the progression of large structural genes in the human genome. Changes in the DNA methylation of somatic cells are associated with the appearance of cancer cells. DNA methylation is one of the most important mechanisms for the change of cell phenotype of cells by changing the status of DNA methylation.

Results
Figure 3.1 shows the determination of the expression of p53 by immunohistochemistry.

Future Work
For future additional study, we plan to focus on the mechanisms of DNA methylation in non-genotoxic carcinogenic agents. A study needs to be conducted on the role of DNA methylation in the development of the human genome.

References

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