reveal a hitherto unknown pathway by which PARP1 promotes DSB-induced transcription silencing and identified NELF complex as the first component of the DNA damage response that selectively accumulates at DSBs surrounding transcriptionally active genes.

ST-05.01.1-002
Structural basis for the recognition and processing of DNA containing bulky lesions by the mammalian nucleotide excision repair system

A. Evdokimov[1], A. Popov[1], I. Petruseva[1], O. Lavrik[1,2]
[1]*Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia,* [2]*Novosibirsk State University, Novosibirsk, Russia*

Mammalian NER eliminates the broadest diversity of bulky lesions from DNA with wide specificity. At that the double incision efficiency for structurally different adducts can vary over several orders of magnitude. Therefore, great attention is drawn to the question of the relationship among structural properties of bulky DNA lesions and the rate of damage elimination. The synthetic DNA structures (model DNA) which imitate NER intermediates and substrates, e.g. double-stranded DNA bearing an appropriate modification are widely used instruments of NER investigations *in vitro*.

Our present work concerns the properties of several structurally diverse model DNAs containing bulky modifications. We evaluated the impact of these lesions on spatial organization and stability of the model DNA. Their affinity for the damage sensor XPC was also studied.

According existing concepts, it was expected, that the values of melting temperature decrease, bending angles and K_D values clearly define the model DNAs substrate properties, but the experimentally estimated levels of the substrate properties were far away from these expectations.

Molecular dynamics simulations have revealed structural and energetic basement of the discrepancies observed.

A several lesion-specific regions of DNA secondary structure stabilization and destabilization were found, and their possible impacts on efficiencies of DNA damage recognition and subsequent excision was suggested.

ST-05.01.1-003
Adipocytokine levels in benign prostate hyperplasia and prostate cancer patients

F. Kosova, G. Temeltas, T. Müezzinoglu, Z. Ari
Celal Bayar University, Izmir, Turkey

Objective: The occurrence of prostate cancer in men is one of the most common types of cancer. Recent studies have found important links between cancer and adipocytokines. Adipocytokines are thought to be factors in the occurrence of a variety of diseases. In addition, adipocytokines studies in cancer patients showed that these hormones may have an effect in the formation of cancer. In this study we aimed to evaluate the relationship between adiponectin, resistin, and leptin levels in BHP and prostate cancer patients.
Methods: This study was conducted from September 2012 to April 2013 at the Department of Medical Biochemistry and Department of Urology of Celal Bayar Univ. Medical Faculty, Manisa, Turkey. Blood samples were collected from 20 people in the same age range who had been diagnosed by examination and biopsy as BPH (benign prostatic patients) and prostate cancer patients but not operated on. Leptin, adiponectin, resistin, human serum levels were measured using ELISA kit.
Results: In the prostate cancer group, serum adiponectin and resistine levels were significantly decreased when compared to the BPH group. However, in the prostate cancer group serum leptin, levels were not significantly different from those in the respective BPH group.
Conclusion: This information and our own findings show that adiponectin and resistin, from the adipocytokine family, may play an important role in the progression of prostate cancer, and thus it may be possible to use them as diagnostic markers. Therefore, similar studies should be considered with a greater number of patients at different stages.

ST-05.01.1-004
A study on antiproliferative and genotoxic potentials in L929 and HeLa cell lines – the mutagenic activities in Salmonella strains of novel 2,5-disubstituted-benzoxazole derivatives

E. Oksuzoglu[1], E. Foto[2], F. Zilifdar[2], T. Ertan-Bolelli[3], K. Bolelli[3]
[1]*Aksaray University, Aksaray, Turkey,* [2]*Hacettepe University, Ankara, Turkey,* [3]*Ankara University, Ankara, Turkey*

Cancer is a mortal disease worldwide. The discovery and development of new treatments for cancer are urgently needed because of problems with current treatments such as toxicity and drug-resistance. Thus, research is directed towards novel drug designs with lower side effects and increased chemotherapeutic efficacy. Benzazoles, which are the substituted benzoxazole and benzimidazole derivatives, have been targeted by much research for many years because they constitute an important class of heterocyclic compounds that exhibit substantial chemotherapeutic activity.

In this study, some novel fused heterocyclic compounds of 2,5-disubstituted-benzoxazole derivatives, which were previously synthesized by our group, were evaluated from anticancer perspective by using various assays. Ames/*Salmonella* assay was used to examine mutagenic potentials of the compounds. Sulforhodamine B (SRB) cytotoxicity test was performed to assess growth inhibition of L929 and HeLa cancer cell lines treated with this compounds. DNA-damaging genotoxic potantials of the compounds were evaluated by using the comet assay.

By using Ames/*Salmonella* assay in the presence of S9 fraction, compound B22 (5-nitro-2-(p-nitrobenzyl) benzoxazole) was found to be mutagenic in both *S. typhimurium* TA98 and TA 100 strains at all tested doses. IC_{50} values which were evaluated by SRB cytotoxicity assay revealed that compound B11 (2-(p-nitrobenzyl) benzoxazole) (IC_{50}=99.16 μM) was the most antiproliferative compound on HeLa cancer cells, and it might cause DNA damage such as single and double-strand breaks in cancer cells. The comet assay results showed that B11 produced DNA damage at lower concentrations than the other compounds tested on HeLa cancer cells. Among the tested compounds, B11 was found to be a remarkable compound.

In conclusion, B11 could be a good candidate as a new anticancer agent. The present findings may provide future opportunities to design and develop more effective new chemotherapeutic drugs.