Abstract

Viruses are infectious agens, which cause disruption of a host cellular redox homeostasis. This effect is mediated by cellular defense machinery or via viral gene products. In order to restore cellular redox enviroment, activation of cellular adaptive response takes place. That is mediated by transcription factor Nrf2, which leads to upregulation of gene expression of antioxidant enzymes. Under suboptimal redox condition, or by detecting foreign nucleic acid, redox sensitive transcription factor Nf-κB is also being activated, what leads to expresion of proteins mediating cellular imunne responses. It is important to remember that these proteins might show malignant effects to surrounding tissues during long term inflammations. With respect to that, viruses have evolved mechanisms, through which they are able to overcome or hijack these pathways, in order to propagate the infection.

Key words: intracellular redox state, ROS, RNS, oxidative stress, antioxidant enzymes, regulation of gene expression, virus infections