

## **CURRICULUM VITAE**

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## **NF- $\kappa$ B signaling in the stress response: Cellular response to environmental carcinogen**

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Photonic radiation such as ionizing radiation (IR) and ultraviolet (UV) radiation is one of the most well known carcinogen/mutagen. Accordingly, organisms have been evolved complex responses to the radiation and genetic defects which can not properly respond to it is sensitive to radiation (*rad* mutants). I would like to talk about the mechanisms which underlie the mammalian response to radiation, especially focusing on how photonic radiation activates NF- $\kappa$ B as well as its physiological significance.

NF- $\kappa$ B is activated in response to proinflammatory stimuli, infections and physical stress and plays a central role in wide variety of physiological processes such as inflammation, innate immunity, stress response, growth and differentiation. While activation of NF- $\kappa$ B by many stimuli including IR depends on the I $\kappa$ B kinase (IKK) complex, which phosphorylates I $\kappa$ Bs at N-terminal sites, the mechanism of NF- $\kappa$ B activation by UV radiation remained enigmatic as it is IKK independent. I will present our data showing that the signaling cascade composed of p38 MAPK and CK2 is responsible for activating NF- $\kappa$ B in response to UV. I would also like to discuss about the mechanism by which how IR might activate NF- $\kappa$ B in an IKK-dependent manner.