Abstract

Cytokines and nitric oxide (NO) are soluble regulators of many essential cellular processes. Changes in the effects of cytokines and NO on cells leads to the development of several diseases so understanding these effects is needed to inform the understanding of basic cell biology and disease development. Work in my laboratory is specifically interested in how cytokine- and NO-mediated cell signaling act in a coordinated manner to cross-influence each other. Within this context, we are studying how cytokines regulate the expression of nitric oxide synthases and how NO-mediated protein S-nitrosylation influences cytokine signaling. I will present recent investigations that identify a new positive feedback mechanism by which NO augments the expression of inducible NO synthase expression through the S-nitrosylation of Ras as well as studies that identify a new mechanism by which endothelial NO synthase expression is up-regulated by the inflammatory cytokine IL-17.