

## John R. Mahoney, Immunology & Cell Biology

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### *Research Interests*

- Host-pathogen interactions
- Inflammation
- Signal transduction

### *Research Summary*

An integral part of the inflammatory response is the production of reactive oxygen species including, superoxide, hydrogen peroxide, and hypochlorous acid. In addition to potent antimicrobial activity, recent work has demonstrated that these compounds elicit specific biological responses from cells. Two of my current graduate students are examining the effect at the effects of HOCl (chlorine bleach) on endothelial cell morphology and vascular physiology. Using an isolated perfused rat heart model and an aortic ring model we are investigating functional and morphological changes using light and electron microscopy. Previous, studies in my lab have demonstrated that HOCl and other neutrophil-derived oxidants may have other important functions in the inflammatory response involving changes in endothelial cell morphology and signal transduction pathways.

### *Publications*

Ochoa, L., Waypa, G., Mahoney, Jr., J.R., Rodriguez, L., and Minnear, F.L. Contrasting effects of hypochlorous acid and hydrogen peroxide on endothelial permeability: Prevention with cAMP drugs, *American Journal of Respiratory and Critical Care Medicine* 156:1247-1255, 1997.

Chesney, J., Eaton, J.W. and Mahoney, Jr., J.R. Bacterial glutathione: a sacrificial defense against chlorine oxidants, *Journal of Bacteriology*, 178(7): 2131-2135, 1996.

Mahoney, Jr., J.R. Chelation treatment of iron poisoning. In: Handbook of metal-ligand interactions in biological fluids, G. Berthon, ed., Marcel Dekker, 1995.

