



## Illinois Wesleyan University Digital Commons @ IWU

---

John Wesley Powell Student Research  
Conference

2006, 17th Annual JWP Conference

---

Apr 8th, 9:00 AM - 10:00 AM

# Effects of DosEC Deletion Mutants

Mai Nguyen

*Illinois Wesleyan University*

Laura Moore, Faculty Advisor

*Illinois Wesleyan University*

Follow this and additional works at: <http://digitalcommons.iwu.edu/jwprc>

---

Mai Nguyen and Laura Moore, Faculty Advisor, "Effects of DosEC Deletion Mutants" (April 8, 2006). *John Wesley Powell Student Research Conference*. Paper 27.

<http://digitalcommons.iwu.edu/jwprc/2006/posters/27>

This Event is brought to you for free and open access by The Ames Library, the Andrew W. Mellon Center for Curricular and Faculty Development, the Office of the Provost and the Office of the President. It has been accepted for inclusion in Digital Commons @ IWU by the faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.

Poster Presentation P57

## **EFFECTS OF DOSEC DELETION MUTANTS**

Mai Nguyen and Laura Moore\*  
Chemistry Department, Illinois Wesleyan University

Escherichia coli is a facultative anaerobic bacterium that utilizes different metabolic pathways when the oxygen concentration changes. Among many enzymes that regulate these pathways, DosEC is a purported direct oxygen sensor and a heme-regulated phosphodiesterase. When the central heme is at the +2 oxidation state, the conformation of the N-terminal domain changes, resulting in the activation of the C-terminal domain in DosEC . When activated, this domain breaks down cAMP, an important secondary messenger in the cell signaling pathway. In this study, we investigate the role of DosEC in the metabolism of Escherichia coli by comparing the growth rate of wild type and deletion mutants of dosEC in minimum media and/or oxidative stress conditions. We will also monitor the activity of DosEC by examining cAMP level. We expect to see a difference in the cAMP level between the wide type and the dosEC deletion mutant strains.