

**cDNA Cloning and Gene Characterization of  
Large and Small Subunits of  
Ribonucleotide Reductase in Soybean**

by  
Xinsheng Xiong

Dissertation submitted to the Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements of the degree of

Doctor of Philosophy  
in  
Biology

Approved by: Joe R. Cowles, Chairman  
Asim Esen  
Elizabeth A. Grabau  
Muriel Lederman  
Charles L. Rutherford

March 2000  
Blacksburg, Virginia

Keywords: Ribonucleotide Reductase, Soybean, DNA Sequence,  
Cloning, Gene Family, Gene Expression, Poly(A) Site