

# Rebecca A.R. Bryant

Department of Biology  
Carleton College  
Northfield MN 55057  
email: rbryant@carleton.edu  
tel: (507) 646-4545 fax: (507) 646-5757

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## Education

- Postdoctoral Fellow Harvard Medical School, Department of Pathology 1997-2000
- Ph.D. University of Massachusetts, Molecular and Cellular Biology February 1998
- B.A. Clark University, Biochemistry and Molecular Biology May 1991

## Teaching Experience

- Visiting Assistant Professor Department of Biology, Carleton College, Northfield MN 2000-2001
  - Responsible for Biochemistry and two associated laboratories
  - Designed and taught Molecular Biology and associated laboratory
  - Coordinated and taught Introductory Biology laboratories
  - Directed student in an independent research study
  - Served as member of senior comprehensive exam committees
- Teaching Assistant Introduction to Biology, University of Massachusetts 1991
- Teaching Assistant Biochemistry Laboratory, University of Massachusetts 1992

## Research Experience

- Postdoctoral Research Dr. Hidde Ploegh, Dept. of Pathology, Harvard Medical School 1997-2000

*Cysteine Proteases involved in antigen presentation and angiogenesis.* Novel radiolabeled active-site directed probes were developed and used to study the roles of cysteine proteases, specifically cathepsins, in MHC Class II-restricted antigen presentation and angiogenesis.
- Graduate Thesis Research Dr. David E. Hansen, Dept. of Chemistry, Amherst College 1991-1997

*Toward an antibody peptidase: Mechanistic studies of peptide-bond hydrolysis.* Thesis awarded the Byron Prize for Best Dissertation in 1997. An HPLC-based assay for the hydrolysis of peptide bonds was developed. The effect of torsional strain on the rate of peptide-bond hydrolysis was investigated.
- Graduate Rotation Dr. Bruce Jacobson, Dept. of Biochemistry, University of Massachusetts 1992
- Undergraduate Research Dr. Donald Nelson, Dept. of Chemistry, Clark University 1990
- Summer Research Dr. Judith McDowell Capuzzo, Woodshole Oceanographic Institute 1990

## Awards/Funding

- Rosenow Fund for Independent Study Student Support, Carleton College Winter 2001
- Postdoctoral Fellowship, Cancer Research Institute January 1999-August 2000
- Postdoctoral Support, NIH Training in Transplantation Biology Grant, declined December 1998-November 1999
- Byron Prize for Best Dissertation, Molecular and Cellular Biology Program March 1998
- Best Graduate Student Poster Award, AAAS Meeting June 1996
- Keystone Award for Outstanding Scientific Contribution,  
Keystone Symposium on "Exploring and Exploiting Antibody and Ig Superfamily Combining Sites" February 1996
- Molecular and Cellular Biology Program Travel Awards February/June 1996
- Outstanding Teaching Assistant Award, Molecular and Cellular Biology Program Spring 1992
- Research Assistantship, Amherst College 1992-1997
- Teaching Assistantships, University of Massachusetts Fall 1991-Spring 1992

## Publications

- Shi, G-P., R.A.R. Bryant, R. Riese, S. Verhelst, C. Driessen, D. Bromme, H.L. Ploegh, and H.A. Chapman (2000) Role for Cathepsin F in Invariant Chain Processing and MHC Class II Peptide Loading by Macrophages. *J. Exp. Med.* 191(7):1177-1186.
- Felbor, U., L. Dreier, R.A.R. Bryant, H.L. Ploegh, B.R. Olsen, and W. Mothes (2000) Endostatin Release from Collagen XVIII by Secreted Cathepsin L. *EMBO J.* 19(6):1187-1194.
- Villadangos, J.A., R.A.R. Bryant, J. Deussing, C. Driessen, A-M. Lennon-Dumenil, R.J. Riese, W. Roth, P. Saftig, G-P. Shi, H.A. Chapman, C. Peters, and H. Ploegh (1999) Proteases Involved in MHC Class II Antigen Presentation. *Immunol. Rev.* 172:100-120.
- Driessen, C., R.A.R. Bryant, A-M. Lennon-Dumenil, J.A. Villadangos, P.W. Bryant, G-P. Shi, H.A. Chapman, and H. Ploegh (1999) Cathepsin S Controls the Trafficking and Maturation of MHC Class II Molecules in Dendritic Cells. *J. Cell. Biol.* 147:775-790.
- Bryant, R.A.R. and D.E. Hansen (1996) Direct Measurement of the Uncatalyzed Rate of Hydrolysis of a Peptide Bond. *J. Am. Chem. Soc.* 118:5489-5499.

## Manuscripts Under Review or In Preparation

- Lennon-Dumenil, A-M., R.A.R. Bryant, C. Driessen, L. Bikoff, H.L. Ploegh, and P.W. Bryant, MHC Class II-associated Invariant Chain is Required for Cathepsin L Activity in Antigen Presenting Cells. *J. Cell. Biol.*, submitted.
- Bryant, R.A.R., S. Shin, M. Bogyo, J. McMaster, and H.L. Ploegh, Synthesis and Characterization of a New Radiolabeled Cysteine Protease Inhibitor: Use in Biological Systems. manuscript in preparation.
- Bryant, R.A.R., Z. Wang, R. Plourde, D.E. Hansen, and R.J. Sugasawara. RJS8-1, Mouse Monoclonal to FK-520 (Ascomycin). manuscript awaiting corporate release for publication.

## Publications – Book Reviews/News Articles

- Bryant, R.A.R. (2000) Birth of Glial Cells Revealed. *FOCUS: News from Harvard Medical, Dental & Public Health Schools*, June 23 issue.
- Bryant, R.A.R. (2000) Bacteria Dispose of Electron Waste by Exterior Shuttle. *FOCUS: News from Harvard Medical, Dental & Public Health Schools*, May 5 issue.
- Bryant, R.A.R. (2000) With or Without Backbone, Organisms Use GATA to Have Guts. *FOCUS: News from Harvard Medical, Dental & Public Health Schools*, May 5 issue.
- Bryant, R.A.R. (2000) CASK: Scaffold Protein, Transcription Factor, or is it Both? *FOCUS: News from Harvard Medical, Dental & Public Health Schools*, March 24 issue.
- Bryant, R.A.R. and C.A. Roberts (1995) Book Review of A Ph.D. is Not Enough! by Peter J. Feibelman. *Association for Women in Mathematics Newsletter*, 24(4).

## Presentations – Selected Seminars and Posters

- “Gone Fishin’: Discovering the Enzyme that Releases the Angiogenesis Inhibitor Endostatin.”, Department of Biology, Carleton College, Northfield MN, seminar (September 2000).
- “Radiolabeled Active-Site Probes for the Study of Cysteine Proteases”, Department of Chemistry, Northern Arizona University, Flagstaff AZ, seminar (November 1999).
- “Active-site Labeling of Cathepsin S in Dendritic Cells”, Biology of Proteolysis Meeting, Cold Spring Harbor NY, poster (May 1999).
- “A Novel, Radiolabeled Inhibitor of Cathepsin S”, New England Immunology Conference, Woodshole MA, poster (October 1999).
- “Proteases Important in Antigen Processing and Presentation”, Molecular and Cellular Biology Annual Retreat, University of Massachusetts, Amherst MA, Byron Prize acceptance seminar (March 1998).
- “Toward a Sequence-Specific Antibody Protease: A Sensitive Assay for Peptide-Bond Hydrolysis”, Keystone Symposium on “Exploring and Exploiting Antibody and Ig Superfamily Combining Sites,” Taos NM, poster (February 1996).
- “Progress Toward a Sequence-Specific Antibody Peptidase: A Sensitive Assay for Peptide-Bond Hydrolysis”, AAAS Meeting, Flagstaff AZ, poster (June 1996).
- “Determination of the Uncatalyzed Rate of Hydrolysis of a Peptide Bond”, Chemistry-Biology Interface, University of Massachusetts, Amherst MA, chalk talk (April 1996).
- “Catalytic Antibodies”, Department of Chemistry, Clark University, Worcester MA, seminar (February 1996).

## Professional Activities

- Editor, The Journal of Undergraduate Study & Independent Research 2001
- Participant, Midwest Faculty Seminar, "Genetic Research and the Future of Medicine", University of Chicago 2001
- Consultant, Lexigen Pharmaceuticals Corporation 2000
- Panel Member, "Preparing for Graduate School", Carleton College 2000
- Participant, AMWA Meeting "The Human Genome Project and the Future of Medicine", Whitehead Institute 2000
- Member, American Medical Writers Association 2000
- Member, New England Science Writers Association 2000
- Judge, Boston Latin School Science Fair, Boston MA 2000
- Organizer, Molecular and Cellular Biology Colloquium Series, University of Massachusetts 1995-1996
- Host, "A Day with a Scientist" for home-taught junior high school students 1995
- Organizer, poster session for the annual Molecular and Cellular Biology Symposium, University of Massachusetts 1994-1996
- Student Representative, Molecular and Cellular Biology Program Committee, University of Massachusetts 1994-1996
- Volunteer Scientist, "Community Science Spree Day", Amherst MA 1994
- Volunteer Scientist, Science-by-Mail Program, Boston Museum of Science 1993-1995
- Member, American Association for the Advancement of Science 1993-1996
- Member, Association for Women in Science 1993-1996

## References

Dr. Mark McKone  
 Department of Biology  
 Carleton College  
 Northfield MN 55057  
 (507) 646-4393  
 mmckone@carleton.edu

Dr. Hidde Ploegh  
 Department of Pathology  
 Harvard Medical School  
 Boston, MA 02115  
 (617) 432-4777  
 ploegh@hms.harvard.edu

Dr. David E. Hansen\*  
 Department of Chemistry  
 Amherst College  
 Amherst, MA 01002  
 (413) 542-2731  
 dehansen@alpha2.amherst.edu

Dr. Barbara A. Osborne\*  
 Vet. and Animal Science  
 University of Massachusetts  
 Amherst, MA 01003  
 (413) 545-4882  
 osborne@vasci.umass.edu

\* Graduate Faculty, Program in Molecular and Cellular Biology, University of Massachusetts, Amherst, MA 01002.