

# LOUIS-BRUNO RUEST

**Work:**

Birth Defects Center  
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Craniofacial Biology  
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## EDUCATION

- 1996-2002                      Doctor of Philosophy (Ph.D.), Experimental Medicine  
McGill University, Lady Davis Institute for Medical Research,  
Montréal, Canada. (Advisor: Dr. Eugenia Wang)
- Thesis title: Peptide elongation factors and caspase-3 in myocytes: a  
    way to control apoptosis (August 2001).
- 1993-1996                      Bachelor of Science (B.Sc) with Major in Biology/Microbiology.  
University of Sherbrooke, Sherbrooke, Canada

## PROFESSIONAL EXPERIENCE

- 2002-                              Postdoctoral Research Associate, Birth Defects Center and  
Dept. of Molecular, Cellular and Craniofacial Biology  
University of Louisville School of Dentistry, Louisville, KY.  
(Advisor: Dr. David E. Clouthier)
- Research Focus: The main focus of my research is to study the  
    function of the endothelin-A receptor signaling in neural crest cells  
    during craniofacial and cardiovascular development.

- 2000-2002 Graduate Student/ Research Associate, Dept. of Biochemistry and Molecular Biology, University of Louisville School of Medicine, Louisville, KY. (Advisor: Dr. Eugenia Wang)
- Research Focus: My work focused on the characterization of apoptotic regulation by peptide elongation factors in brain-dead rabbit hearts, a model used to study cardiac transplantation.
- 1996-2000 Researcher (graduate student), Bloomfield Center for Research in Aging, Lady Davis Institute for Medical Research, Montréal, Canada. (Advisor: Dr. Eugenia Wang)
- Research Focus: I studied apoptosis in skeletal muscle and its regulation by the peptide elongation factors 1a. I also worked on the regulation of apoptosis-related protein synthesis in skeletal muscle.
- 1995 Researcher (summer student), Department of Biology, Faculty of Sciences, University of Sherbrooke, Sherbrooke, Qc, Canada. (Advisor: Dr. Adrien R. Beaudoin)
- Research Focus: I worked on the characterization of the ectoenzyme ATP-diphosphohydrolase isolated from bovine hearts and aortas.

#### AWARDS AND HONORS

- 2004-2006 Junior Personnel Award, Research Fellowship  
Heart and Stroke Foundation of Canada
- 2002 Finalist, Scientific Poster Presentation Research! Louisville
- 1998-2001 Doctoral Research Award  
Medical Research Council of Canada  
(now Canadian Institutes of Health Research)
- 1995 Summer Student Scholarship  
Fond de Recherche en Santé du Québec (FRSQ) (Quebec Health Research Fund)
- 1994 Student Scholarship  
Foundation Desjardins

## PROFESSIONAL SOCIETY MEMBERSHIP

- 2003- Society for Developmental Biology (SDB)
- 2003- Federation of American Society of Experimental Biology (FASEB)
- 2003- American Association for the Advancement of Science (AAAS)
- 1997-1998 American Society for Cell Biology

## ACADEMIC ACTIVITIES

- 2004 Judge, Research Louisville
- 1998-1999 Organizer, Bloomfield Center for Research in Aging Journal Club

## RESEARCH SUPPORT

- 2004- Agency: Heart and Stroke Foundation of Canada  
Dates: 09/01/04-08/31/06  
Amount: CAN\$38,000/yr

## INVITED SPEAKER

1. Patterning of neural crest cells by endothelin. Birth Defects Center, University of Louisville, Louisville KY. Research Seminar. November 30, 2004.

## PUBLICATIONS

### PEER REVIEWED

1. **Ruest LB**, Marcotte R, Wang E. 2002. Peptide elongation factor eEF1A-2/S1 expression in cultured differentiated myotubes and its protective effect against caspase-3-mediated apoptosis. *J. Biol. Chem.* 277: 5418-5425.
2. **Ruest LB**, Khalyfa A, Wang E. 2002. Development-dependent disappearance of caspase-3 in skeletal muscle is post-transcriptionally regulated. *J. Cell. Biochem.* 86: 21-28.

3. **Ruest LB**, Dager M, Yanagisawa H, Charite J, Hammer RE, Olson EN, Yanagisawa M, Clouthier DE. 2003. *dHAND-Cre* transgenic mice reveal specific potential functions of dHAND during craniofacial development. *Dev. Biol.* 257: 263-277. (Cover feature)
4. **Ruest LB**, Hammer RE, Yanagisawa M, Clouthier DE. 2003. *Dlx5/6*-enhancer directed expression of Cre recombinase in the pharyngeal arches and brain. *Genesis* 37: 188-194.
5. Pan J, **Ruest LB**, Xu S, Wang E. 2004. Immuno-characterization of the switch of peptide elongation factors eEF1A-1/EF-1 $\alpha$  and eEF1A-2/S1 in the central nervous system during mouse development. *Brain Res. Dev. Brain Res.* 149: 1-8.
6. **Ruest LB**, Xiang X, Lim KC, Levi G, Clouthier DE. 2004. Endothelin-A receptor-dependent and-independent signaling pathways in establishing mandibular identity. *Development.* 131: 4413-4423.
7. **Ruest LB**, Kedzierski R, Yanagisawa M, Clouthier DE. 2005. Deletion of the endothelin-A receptor gene within the developing mandible. *Cell Tissue Res.* 319: 447-453. (Cover feature)
8. **Ruest LB**, Clouthier DE. *Hand2-Cre* transgenic mice reveal potential neural crest and non-neural crest functions of Hand2 during cardiovascular development. *Dev. Dyn.* (Submitted)
9. Yeh T Jr., McDonald MJ, Webb SJ, Schroeder MJ, Hauck MA, **Ruest LB**, Wang E, Koenig SC. Myocardial apoptosis forty-eight hours after brain death: implications in donor heart dysfunction. *J. Thorac. Cardiovasc. Surg.* (Submitted, under revision).
10. **Ruest LB**, Clouthier DE. Potential evolutionary role for endothelin-A receptor function during cephalic neural crest cell development. *Dev. Dyn.* (Submitted).

## COVER FEATURES

1. *Developmental Biology* (2003) Vol. 257 (2): 263-277.
2. *Cell & Tissue Research* (2005) Vol. 319 (3): 447-453.

## PUBLISHED ABSTRACTS

1. Picher M, Sevigny J, Levesque F, **Ruest LB**, Beaudoin AR. 1995. The bovine aorta ATP-diphosphohydrolase, an ectoenzyme involved in the hydrolysis of P-2-purinoceptor agonists. *Mol Biol. Cell* 6 (Suppl 6): 2550. (American Society of Cell Biology (ASCB) meeting, December 1995, Washington, DC)
2. **Ruest LB**, He XY, Khalyfa A, Wang E. 1997. Paracrine induction of programmed cell death by apoptotic cultured myotubes. *Mol. Biol. Cell* 8 (Suppl S): 187. (American Society of Cell Biology (ASCB) meeting, December 1997, Washington, DC)

3. Wang E, **Ruest LB**. 1997. Age-dependent muscle atrophy and paracrine induction of apoptosis. *Mol. Biol. Cell* 8 (Suppl S): 734. (American Society of Cell Biology (ASCB) meeting, December 1997, Washington, DC).
4. **Ruest LB**, Beavin JL, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Marking dHAND-positive cell lineage with a dHAND-Cre transgene. P. 103 (LXVII Cold Spring Harbor Symposium on Quantitative Biology: The Cardiovascular System, May-June 2002, Cold Spring Harbor, NY)
5. **Ruest LB**, Clouthier DE. 2003. Elucidating the timing of endothelin-A receptor function in neural crest cells using conditional gene inactivation. *Dev. Biol.* 259: 577. (Society for Developmental Biology (SDB) 62<sup>nd</sup> Annual Meeting, July-August 2003, Boston, MA)
6. **Ruest LB**, Xiang X, Lim K, Levi G, Clouthier DE. 2004. Endothelin-A-receptor dependent and independent pathways establish a mandibular identity during facial morphogenesis. *Dev. Biol.* 271: 610. (Society for Developmental Biology 63<sup>rd</sup> Annual Meeting, July 2004, Calgary, AB, Canada).
7. Clouthier DE, **Ruest LB**. 2005. Timing and function of endothelin-A receptor signaling during vertebrate lower jaw development. *FASEB J.* 19: A793. (Experimental Biology 2005 and XXXV International Congress of Physiological Sciences, March-April 2005, San Diego, CA)
8. **Ruest LB**, Brock T, Clouthier DE. 2005. Elucidating the timing of the endothelin-A receptor function during craniofacial development. *Dev Biol.* 283: 665 (Society for Developmental Biology 64<sup>th</sup> Annual Meeting, July-August 2005, San Francisco, CA)

## PRESENTATIONS

1. Picher M, Sevigny J, Levesque F, **Ruest LB**, Beaudoin AR. 1995. The bovine aorta ATP-diphosphohydrolase, an ectoenzyme involved in the hydrolysis of P-2-purinoceptor agonists. *Mol Biol. Cell* 6 (Suppl 6): 2550. (American Society of Cell Biology (ASCB) meeting, December 1995, Washington, DC)
2. **Ruest LB**, He XY, Khalyfa A, Wang E. 1997. Paracrine induction of programmed cell death by apoptotic cultured myotubes. *Mol. Biol. Cell* 8 (Suppl S): 187. (American Society of Cell Biology (ASCB) meeting, December 1997, Washington, DC)
3. Wang E, **Ruest LB**. 1997. Age-dependent muscle atrophy and paracrine induction of apoptosis. *Mol. Biol. Cell* 8 (Suppl S): 734. (American Society of Cell Biology (ASCB) meeting, December 1997, Washington, DC). **This work was awarded the Glenn Award for the best scientific presentation in the Biology of Aging at the 1997 ASCB meeting.**

4. **Ruest LB**, Beavin JL, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Marking dHAND-positive cell lineage with a dHAND-Cre transgene. P. 62 (Weinstein 2002 Cardiovascular Development Conference, May 2002, Salt Lake City, UT)
5. **Ruest LB**, Beavin JL, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Marking dHAND-positive cell lineage with a dHAND-Cre transgene. P. 103 (LXVII Cold Spring Harbor Symposium on Quantitative Biology: The Cardiovascular System, May-June 2002, Cold Spring Harbor, NY)
6. **Ruest LB**, Daeger M, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Analysis of dHAND-positive cell lineage during craniofacial development with a *dHAND-Cre* transgene. P.145 (Mouse Molecular Genetics, August-September 2002, Cold Spring Harbor, NY)
7. **Ruest LB**, Beavin JL, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Analysis of dHAND-positive cell lineage during cardiovascular development with a *dHAND-Cre* transgene. P.C-11 (Symposium on phenotyping: Molecular Cardiovascular Function and Development, October 2002, Bethesda, MD)
8. **Ruest LB**, Daeger M, Charite J, Olson EN, Yanagisawa M, Clouthier DE. 2002. Analysis of dHAND-positive cell lineage during craniofacial development with a *dHAND-Cre* transgene. (Research! Louisville 2002, October 2002, Louisville, KY, **finalist**)
9. **Ruest LB**, Clouthier DE. 2003. Elucidating the timing of endothelin-A receptor function in neural crest cells using conditional gene inactivation. *Dev. Biol.* 259: 577. (Society for Developmental Biology (SDB) 62<sup>nd</sup> Annual Meeting, July-August 2003, Boston, MA)
10. **Ruest LB**, Clouthier DE. 2003. Conditional inactivation of the endothelin-A receptor gene during craniofacial development. (Research! Louisville 2003, November 2003, Louisville, KY).
11. **Ruest LB**, Vinson BC, Clouthier DE. Endothelin-A receptor-dependent and independent signaling pathways establish a mandibular identity. (Research! Louisville 2003, November 2003, Louisville, KY).
12. **Ruest LB**, Xiang X, Lim K, Levi G, Clouthier DE. 2004. Endothelin-A-receptor dependent and independent pathways establish a mandibular identity during facial morphogenesis. *Dev. Biol.* 271: 610. (Society for Developmental Biology 63<sup>rd</sup> Annual Meeting, July 2004, Calgary, AB, Canada).
13. **Ruest LB**, Xiang X, Lim KC, Levi G, Clouthier DE. 2004. Endothelin-A receptor signaling differentiates between development of upper and lower jaws. (Research! Louisville 2003, November 2003, Louisville, KY).

14. Clouthier DE, **Ruest LB**. 2005. Timing and function of endothelin-A receptor signaling during vertebrate lower jaw development. *FASEB J.* 19: A793. (Experimental Biology 2005 and XXXV International Congress of Physiological Sciences, March-April 2005, San Diego, CA)
15. **Ruest LB**, Brock T, Clouthier DE. 2005. Elucidating the timing of the endothelin-A receptor function during craniofacial development. *Dev Biol.* 283: 665 (Society for Developmental Biology 64<sup>th</sup> Annual Meeting, July-August 2005, San Francisco, CA)

## REFERENCES

1. Dr. David E. Clouthier, Ph.D.  
(Postdoctoral supervisor)  
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3. Dr. Eugenia Wang, Ph.D.  
(Ph.D. mentor)  
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4. Dr. M. Michele Pisano, Ph.D.  
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