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Podcast Transcript  
Episode 23

Hello fellow science lovers - welcome back to *Mollie Medcast*, the podcast for the biomedical journal *Molecular Medicine*. This is Margot Puerta, Associate Editor here at *Molecular Medicine* coming to you from Long Island, New York. In this week's *Mollie Medcast*: "IGF-I Pathway Activation In Fibroids," "A Novel Splice Mutation In GHRHR," and review paper dealing with "Liver Ischemia/Reperfusion Injury."

*Molecular Medicine's* mission is to publish novel work concerned with understanding the pathogenesis of disease at the molecular level, which we hope will lead to the design of specific molecular tools for diagnosis, treatment and prevention. Our podcast, *Mollie Medcast* includes short summaries of our recently published research papers. If you are interested in submitting a manuscript to the journal or finding out more about any of the papers I discuss today, please visit our website for information, [www.molmed.org](http://www.molmed.org). Okay so first up is:

### **IGF-I Pathway Activation In Fibroids**

Uterine leiomyomas (fibroids) are benign neoplasms of the myometrium prevalent in reproductive-aged women. While some fibroids are asymptomatic, others may cause pelvic pain, menstrual bleeding and infertility. Fibroids represent a tremendous public health burden for women in the United States and are an economic cost to society. Treatment options are limited and surgery remains the gold standard, but its costly and its also invasive. Receptor tyrosine kinases or RTKs bring extracellular signals into the cell and help control cell differentiation and proliferation. RTKs play an important role in the enhanced proliferation seen in leiomyomas. In this work Dr. Linda Yu, from the National Institute of Environmental Health and Sciences, and her colleagues, used uterine leiomyomas and myometrial tissue to investigate the differential expression of growth factor RTKs involved in cell mitogenesis. And to do this they used a phosphor-RTK array technique. The title of the manuscript is, "Differential Expression of Receptor Tyrosine Kinases (RTKs) and IGF-I Pathway Activation in Human Uterine Leiomyomas." Analysis revealed that overexpression of RTKs and activation of the IGF-IR signaling pathway are important mediators of uterine leiomyoma growth. These data may provide new anti-tumor targets for noninvasive treatment of leiomyomas.

### **A Novel Splice Mutation In GHRHR**

While most cases of growth hormone deficiency are sporadic, between 5-30% are familial. Growth hormone deficiency can be isolated, combined with other pituitary hormone deficiencies, or in the extreme form can be part of a panhypopituitarism. One of the most famous people who showed signs of an untreated growth hormone deficiency was Charles Sherwood Stratton who worked with PT Barnum under the stage name General Tom Thumb.<sup>1</sup> Isolated growth hormone deficiency or IGHD, which can result from altered pituitary functions, may be of genetic origin and to date, five genes have been linked to IGHD. One of these genes encodes the growth hormone releasing hormone receptor, or GHRHR for short, so, GHRHR? I think I'll stick with GHRHR. GHRHR plays a pivotal role in growth hormone synthesis and secretion by the pituitary. In this work, Dr. Latifa Hilal and colleagues from Morocco and Paris describe the particular phenotypes of two siblings with IGHD, born to a consanguineous union, in whom a novel splice site mutation in the GHRHR gene was identified. These observations broaden the phenotype that's associated with GHRHR defects and the authors discuss a possible role of GHRHR in the development of extrapituitary structures.

And this week's RNA, review and assess article is:

### **Liver Ischemia/Reperfusion Injury**

Ischemia and reperfusion injury represent a complex series of events that result in cellular and tissue damage. In this article, "Molecular Mediators of Liver Ischemia and Reperfusion Injury: A Brief Review," Dr. Andrew Vardanian and his

colleagues from the School of Medicine at UCLA describe the current understanding of molecular mechanisms involved in ischemia and reperfusion injury, primarily in the liver, and their putative therapeutic implications.

That's it for this week's episode of "Mollie Medcast." Check us out again next time when we'll be discussing 'New Risk Loci for Rheumatoid Arthritis,' 'Septic Immune Dysfunction,' and a review regarding 'Toll-Like Receptor 4 Polymorphisms.' You can find all these research papers and review articles on our website, [www.molmed.org](http://www.molmed.org) that's [www.m-o-l-m-e-d.org](http://www.m-o-l-m-e-d.org). For questions or comments regarding this podcast, please send me an email at: [margot@molmed.org](mailto:margot@molmed.org). If you are thinking about submitting a manuscript but you're not sure if it fits within the scope of what we normally publish send me an email with an abstract and a few comments about your work and I'll get back to you. This podcast is available on [molmed.org](#) and is up in iTunes. *Molecular Medicine* is published bimonthly by the Feinstein Institute for Medical Research.

From Long Island, New York, this is [margot@molmed.org](mailto:margot@molmed.org), thanks for listening!

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Associate Editor, *Molecular Medicine*  
Music: [Opuzz.com](http://Opuzz.com)  
Photos: iStock

1. Wikipedia: [http://en.wikipedia.org/wiki/Growth\\_hormone\\_deficiency](http://en.wikipedia.org/wiki/Growth_hormone_deficiency). Accessed May 9, 2008.