



The Pied Piper

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Announcing New RGD Release



RGD is happy to announce its 3rd major release of 2007. This release includes the addition of Celera genome positions for genes, major developments in ortholog data and comparative map information, improved protein information and links; and gene families and disease gene data.

• **Celera Genome Positions**^{new} –RGD now provides [genomic positions for genes on the Celera Assembly](#) as well as a Celera Assembly option on the GBrowse to provide users with a view of data elements within the context of the Celera Assembly. -[view example](#) , [Go to GBrowser](#)

• **New Protein Links**^{new} –Weekly updates of data from the International Protein Index now provide users with the most up to date links to essential protein and family information and identifiers including IPI, UNIPARC, Ensembl Protein, InterPro, Pfam, PRINTS, PROSITE, PANTHER, RZPD, SMART, ProDom, Superfamily-SCOP, TIGRFAM, and Gene3D-Cath. -[view example](#)

• **Human and Mouse Genes**^{new} –Weekly downloads from EntrezGene now provide RGD users with up-to-date, complete data on human and mouse genes including:

- Genomic and cytogenetic map positions
- Summary description paragraphs for human genes and some mouse genes -[view example](#)
- Links to GDB, MGD, KEGG, Uniprot, PubMed, HGNC, NPRD, EntrezGene, UniGene, OMIM
- Links to human and mouse genes in UCSC Browser and NCBI MapView
- Links to nucleotide and protein sequences
- Links to GEO for expression data
- Links to PubMed references
- Gene searches for any or all species are available through the general search or [gene query form](#)

• **Orthology Data**^{new} –Ortholog relationships among rat, mouse and human are now updated weekly. Comparative map data for all three species are provided on each gene report as well as a link to the comparative map at NCBI Map Viewer.

• **Disease Genes**^{new} –The Rat orthologs of 1547 genes listed at OMIM have been fully curated using all rat papers published on each gene.

• **Gene Families and Nomenclature**^{new} –The nomenclature for two major gene families, alpha tubulin and prolactin related genes has been completed. Identification and nomenclature assignment was coordinated with Dr. Michael Soares and the Mouse Genome Database. Details were published in Soares et al, Mammalian Genome 2007, Mar 18(3): 154-6. [A publication on the nomenclature resolution of the alpha tubulin family will appear in Genomics soon.](#)

• **Ontology Annotation Files**^{new} –Annotations files for pathway, phenotype and disease information for rat, mouse, and human genes and QTLs as well as rat strains are now available on the FTP site in a folder entitled "[annotated_rgd_objects_by_ontology](#)". Files containing GO annotations for rat genes are in the gene_association files on the FTP site. All files are updated weekly.

Conference Watch

July 19-25 , 2007

ISMB

Vienna, Austria

October 25-28, 2007

Second International Biocurator

Meeting

San Jose, CA, USA

November 1-5, 2007

Genome Informatics

Cold Spring Harbor, NY, USA

December 6-9, 2007

Rat Genomics and Models

Cold Spring Harbor, NY, USA

New @ RGD

Nearly 17,000 Genes with Gene Ontology Annotations!

– Increased manual curation efforts and automated pipelines have allowed RGD to increase the number of genes with functional information to 16,959.

GOA Annotations from EBI

– RGD has implemented a new pipeline to add GO annotations from GOA at EBI to RGD genes.

RGD Data Scoreboard:

Data totals available below and at [RGD homepage](#)

Read other [news from RGD](#)

Contact RGD

New Rat Biomart

RGD in collaboration with the NHLBI Proteomics Center at the Medical College of Wisconsin announces the release of the [Rat Biomart](#). Rat Biomart can be accessed from the Tools section on the RGD homepage. This first release has the following rat datasets available:

- RGD Genes - Rat genes, external database identifiers, map locations, gene ontology annotations
- RGD Microsatellites - Rat microsatellite markers, map locations, allele sizes in different inbred strains

Biomart can be used to quickly create customized datasets by filtering the data in RGD. For example you can find the genes mapped in a QTL region by filtering the RGD genes dataset using chromosome and start/stop locations. For data annotation you can upload a file of identifiers (RGD IDs, Genbank Accessions, Uniprot IDs, etc) and download RGD functional annotations and mapping locations.

Rat Genomics and Models Conference

December 6 - 9, 2007

Abstract Deadline: October 5, 2007

You are cordially invited to participate in the fifth meeting on Rat Genomics & Models, which will be held at Cold Spring Harbor Laboratory. The meeting will begin with dinner and the first session on the evening of Thursday, December 6, and will conclude with lunch on Sunday, December 9, 2007. We are looking forward to a broad-based meeting, and abstracts are welcomed on all scientific topics related to rat genetics, genomics and physiology.

The format of the meeting will include six oral sessions consisting of invited and short talks, limited to approximately 15 minutes, principally on unpublished work. Oral presentations will be selected by the organizers from the submitted abstracts. The other submitted abstracts will be presented in poster session (s). As is usual at Cold Spring Harbor meetings, all abstracts of both poster and platform sessions will be published in an abstract book given to all the participants.

Organizers:

Timothy Aitman, Imperial College, London, UK
Norbert Huebner, Max-Delbruck-Center for Molecular Medicine
Anne Kwitek, Medical College of Wisconsin
James Shull, University of Nebraska Medical Center

[Register for Rat Genomics and Models Conference](#)

[Visit Rat Genomics and Models Conference Homepage](#)

Stem Cells Make Neurons, and Tumors, in Rat Model of Parkinson's Disease

In a new study that illustrates the promise and perils of stem cell therapy, scientists found that implanting human embryonic stem cells led to dramatic functional improvement – but also to brain tumors – in a rat model of Parkinson's disease (PD).

Since their isolation in the 1980s, human embryonic stem cells – which are capable of generating nearly all the cells that make up the human body – have been eyed as a potential toolkit for treating PD and a host of other diseases. The challenge is getting them to turn into the needed cell type. Without the proper cues, they could simply make more of themselves, possibly leading to tumors.

PD is characterized by gradually worsening tremor, slowness of movement, and stiffened muscles. It's considered an ideal candidate disease for stem cell therapy because it damages a relatively small population of neurons. Those neurons produce the chemical dopamine, and make their home in a brain region known as the substantia nigra, which connects to another region called the striatum.

RGD welcomes users comments, questions and inquires. Please use following contacts to ensure your inquiry is addressed promptly.

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[Contact RGD Curation](#)

[Contact RGD Tools](#)

[Contact RGD Webmaster](#)

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Submit to The Pied Piper

Submit information about your rat research, an upcoming conference or new, exciting tools that aid in rat research to The Pied Piper.

****Click here to see requirements***

The new study, published in Nature Medicine, *describes a high-yield method for inducing human embryonic stem cells to become dopaminergic neurons. When those neurons were implanted into the striatum of rats with a condition similar to PD, the rats ultimately recovered their full motor functions. Disturbingly, however, a small fraction of the implanted cells formed tumors.

[Read Full Article](#)

Source: [NINDS](#)



RGD in the Community

Upcoming RGD Activities:

Victoria Petri, PhD, RGD Research Scientist, will attend the GO Consortium Meeting September 23-25 and the GO Reference Genomes Meeting September 26-27, 2007, both in Princeton, New Jersey.

Simon Twigger, PhD., RGD Co-PI and Victoria Petri, PhD, RGD Research Scientist, will attend the [Second International Biocurator Meeting](#) October 25-28, 2007 in San Jose, CA.

Recent RGD Activities:

Simon Twigger, PhD., RGD Co-PI and Victoria Petri, PhD, RGD Research Scientist, attended the GO Consortium Meeting January 8-10, 2007.

Jennifer Smith, MS, RGD Curator, and Mary Shimoyama, RGD Program Manager, attended the Biology of Genomes Meeting May 8-12, 2007 at Cold Spring Harbor Laboratories.

Stan Lauladerkind, RGD Research Scientist, attended the Human Genome Meeting May 21-24, 2007 in Montreal, Canada.



Facts and Functions of RGD

New Rat Community Forum Format!

RGD recently upgraded the Rat Community Forum (RCF) system and RCF now utilizes the MailMan format. All previous discussions and questions have been preserved and transferred into the archives of the new RCF system.

Users can now post messages quickly by using a single email address with no need to log into a web interface to get a message into the system. The Rat Community Forum remains moderated and all messages are released pending approval from the RCF Administrator.

In order to ensure high quality information is addressed in the forum, currently only registered users are allowed to post to the forum.

[Access the New Rat Community Forum Home Page Here](#)

[Access the Rat Community Forum Message Archives Here](#)

[Post a message to the Rat Community Forum](#)

If you would like to see a particular tool or data type featured in a future installment of "Facts and Functions"

of RGD", [Send your idea to the Editor](#)

RGD Resources:

ANEX University of Tokushima Rat Database	http://www.anex.med.tokushima-u.ac.jp/rat/index-e.html
ARB Rat Genetic Database	http://www.niams.nih.gov/rtbc/ratgbase/
Baylor College of Medicine	http://www.hgsc.bcm.tmc.edu/
Ensembl	http://www.ensembl.org/Rattus_norvegicus/
Entrez Genome Database for Rattus norvegicus	http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=genomeprj&cmd=Retrieve&dopt=Overview&list_uids=10621
IDP-MHC Rat Sequence Database:	http://www.ebi.ac.uk/ipd/mhc/rt1/index.html
ILAR -Institute for Laboratory Animal Research	http://dels.nas.edu/ilar_n/ilarhome/
Mammalian Gene Collection	http://mgc.nci.nih.gov/
National Bio Resource Project Rat Japan	http://www.anim.med.kyoto-u.ac.jp/nbr
NCBI	http://www.ncbi.nlm.nih.gov/
NHGRI Rat Genome Sequencing Homepage	http://www.genome.gov/10001855
NIH Animal Genetic Resource	http://dvrnet.ors.od.nih.gov/gen_repository.asp/
NIH Animal Genetic Resource: list of rat strains and stocks	http://dvrnet.ors.od.nih.gov/rat_strains.htm/
NIH Autoimmune Rat Model Repository	http://dvrnet.ors.od.nih.gov/ratcenter/index.html
NIH Rat Genomics and Genetics	http://www.nih.gov/science/models/rat/
PGA	http://pga.mcw.edu/
RatMap	http://ratmap.gen.gu.se/
Rat Community Forum @ RGD	http://gray.hmgc.mcw.edu/mailman/listinfo/rat-forum
RGD	http://rgd.mcw.edu/
RGNC	http://rgnc.gen.gu.se/
RGSC	http://www.hgsc.bcm.tmc.edu/projects/rat
RRRC	http://www.nrrrc.missouri.edu/
TIGR Rat Gene Index	http://compbio.dfci.harvard.edu/tgi/
UCSC	http://www.genome.ucsc.edu/
University of Iowa Rat EST Project	http://ratest.uiowa.edu/
VISTA at LBL	http://pipeline.lbl.gov/rat/
Wellcome Trust Centre Rat Mapping Resources	http://www.well.ox.ac.uk/rat_mapping_resources/
Whitehead/MIT Genetic Maps of Rat Genome	http://www.genome.wi.mit.edu/rat/public/

We invite you to register for future issues of The Pied Piper-[Register Here!](#)

If you are having difficulties viewing this newsletter please go to <http://rgd.mcw.edu/newsletter> to view it as a page in your web browser.

The Bioinformatics Research Center is a part of the Medical College of Wisconsin. RGD is

funded by grant HL64541 from the National Heart, Lung, and Blood Institute on behalf of the NIH. Please read [our disclaimer](#).

We also encourage you to become a member of The Rat Community Forum (RCF)- [Register Here!](#)

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This Newsletter was constructed by Angela Zuniga-Meyer.