

Rat Genome Database: An Integrated Rat Phenomics and Genomics Data Resource

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20th Annual Meeting of the Complex Trait Community | Rat Genome & Models

October 9, 2023



Strain Registration

General

Strain: *SS-Ncf2^{em1}Mcwi^{-/-}*

Symbol: *SS-Ncf2^{em1}Mcwi^{-/-}*
Strain: *SS-Ncf2^{em1}^{-/-}/Ncf2^{em1}^{-/-}*
Substrain: Mcwi
Full Name: *SS-Ncf2^{em1}Mcwi^{-/-}/Ncf2^{em1}Mcwi^{-/-}*
RGD ID: 5688066
Citation ID: RRID:RGD_5688066
Ontology ID: [RS:0003149](#)
Alleles: [Ncf2^{em1}Mcwi](#)
Previously known as: *SS-Ncf2em1Mcwi^{-/-}*; *SS-Ncf2em1Mcwi/1Mcwi*; *SS-Ncf2^{em1}Mcwi/1Mcwi*; *SS-Ncf2em1Mcwi/Ncf2em3Mcwi^{-/-}*
Type: mutant
Source: PhysGen Knockouts
Origin: ZFN mutant founders were backcrossed with *SS/JrHsdMcwi* offsprings maintained as homozygous and heterozygous
Genetic Status: Homozygous
Last Known Status: Live Animals; Cryopreserved Sperm (as of 2018-09-05)

| Rat Assembly | Chr | Position (strand) |
|---------------------------|-----|-------------------------|
| mRatBN7.2 | 13 | 64,958,217 - 64,958,221 |
| Rnor_6.0 | 13 | 70,229,196 - 70,229,200 |
| Rnor_5.0 | 13 | 75,200,283 - 75,200,287 |

Position

Variant: *Ncf2em1Mcwi-var1* - *Rattus norvegicus*

Name: *Ncf2em1Mcwi-var1*
RGD ID: 14349038
Description: Variant associated with allele [Ncf2^{em1}Mcwi](#); this allele was made by ZFN mutagenesis. The resulting mutation is a 5-bp frameshift deletion in exon 2 (del 253-257)
Type: deletion ([SO:0000159](#))

Associated Allele: [Ncf2^{em1}Mcwi](#)
Reference Nucleotide: GAGAA
Variant Nucleotide:

| Rat Assembly | Chr | Position (strand) | Source |
|---------------------------|-----|-----------------------------|--------|
| mRatBN7.2 | 13 | 64,958,217 - 64,958,221 (+) | RGD |
| Rnor_6.0 | 13 | 70,229,196 - 70,229,200 (+) | RGD |
| Rnor_5.0 | 13 | 75,200,283 - 75,200,287 (+) | RGD |

Aliases: NC_005112.4.g.70229196_70229200del

Total mutants (N) Curated position(N) Coverage(%)

1332

321

24.1

[Disease Annotations](#) [Click to see Annotation Detail View](#)

[proteinuria](#) (IMP)

[renal fibrosis](#) (IMP)

[Phenotype Annotations](#) [Click to see Annotation Detail View](#)

Mammalian Phenotype

[decreased NAD\(P\)H oxidase activity](#) (IMP)

[decreased susceptibility to hypertension](#) (IMP)

[salt-sensitive hypertension](#) (IMP)

[Phenotype Values via PhenoMiner](#) [Click to see Annotation Detail View](#)

 10 ▾

Options: [View chart](#) | [Download data table](#) | [View expanded data table](#)

Clinical Measurement

[heart rate](#)

[mean arterial blood pressure](#)

[body weight](#)

[heart wet weight](#)

[right kidney wet weight](#)

[left kidney wet weight](#)

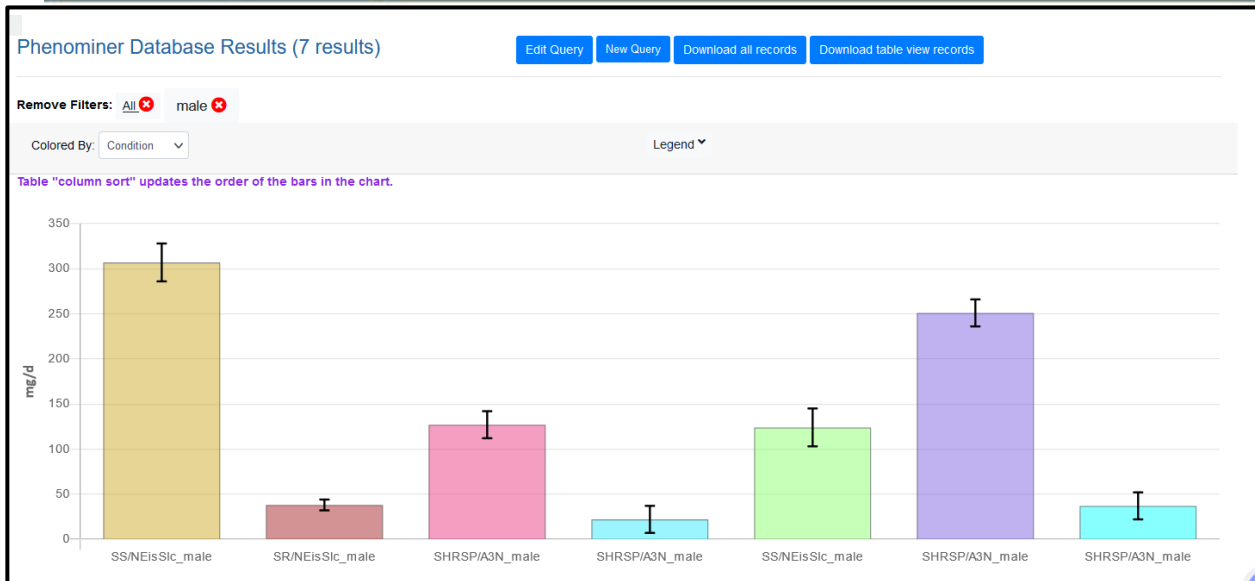
[urine total protein excretion rate](#)

[urine albumin excretion rate](#)

[urine sodium excretion rate](#)

[urine creatinine excretion rate](#)

 10 ▾



| Category | 1332 Mutant Strains | | Annotations (N) |
|--------------|---------------------|--------------|-----------------|
| | Number | Coverage (%) | |
| Disease | 224 | 16.8 | 427 |
| MP Phenotype | 305 | 23.3 | 1794 |
| PhenoMiner | 299 | 22.4 | 12,180 |

Find Models

Genetic Models

Autism Models

Rat PhenoMiner (Quantitative Phenotypes)

Chinchilla PhenoMiner

Expected Ranges (Quantitative Phenotype)

Disease Ontology,

71 results for term "proteinuria & inbred"

| Strain | Considered as type ... | Disease/Phenotype | With conditions | Evidence Code | Reference |
|-------------|------------------------|---------------------------------|--|---------------|-----------|
| SHRSP/Bbb | induced | increased urine protein level 🌱 | sodium content drinking water controlled potassium content diet controlled protein content diet | IAGP | 2307158 |
| SHRSP/Bbb | induced | increased urine protein level 🌱 | controlled sodium content diet controlled potassium content diet controlled protein content diet | IAGP | 11040458 |
| SHRSP/Gcrr | | increased urine protein level 🌱 | | IAGP | 13432198 |
| SS/Jr | | increased urine protein level 🌱 | | IAGP | 634617 |
| SS/Jr | | Albuminuria 🌱 | | IAGP | 634617 |
| SS/jrHsdMkw | | proteinuria 🌱 | | IAGP | 12798539 |
| SS/jrHsdMkw | induced | increased urine protein level 🌱 | controlled sodium content diet | IAGP | 727992 |

Phenominer Database Results (14 results)

[Edit Query](#)[New Query](#)[Download all records](#)[Download table view records](#)

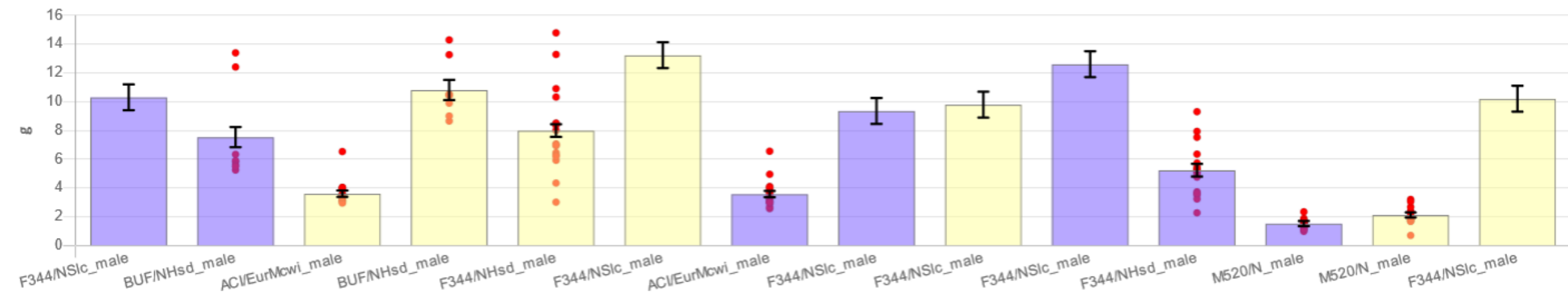
Colored By: Phenotype ▾

Legend ▾

epididymal fat pad weight

retroperitoneal fat pad weight

Table "column sort" updates the order of the bars in the chart.



| Strain | Phenotype | Conditions | Study | Experiment Name | Sex | Age | # of Animals | Value | Units | SEM | SD | Individual Records | Method | Method Duration | Post Insult Time Value | Record ID | Study ID | | | | | | | |
|-------------|--|-------------------|--|------------------------------|--------------------------------|----------|--------------|-------|-------|------|------|---------------------------------|--|-----------------|------------------------|-----------|-----------|------------|------------|--------|----------|----------|--------------------------------|--------------------------------|
| F344/NSlc | retroperitoneal fat pad weight | control condition | Kose H, et al., Exp Anim. 2008 Apr;57(2):135-8. | retroperitoneal fat pad mass | male | 217 days | 9 | 10.3 | g | 0.7 | 2.1 | | post excision weight measurement | 0 | 0 | 66188 | 716 | | | | | | | |
| BUF/NHsd | retroperitoneal fat pad weight | control condition | Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28. | retroperitoneal fat pad mass | male | 119 days | 8 | 7.53 | g | 1.18 | 3.34 | Download Values | scale | | 0 | 138396 | 3200 | | | | | | | |
| | | | | | | | | | | | | Animal ID | Value | Units | Strain | Sex | Phenotype | | | | | | | |
| ACI/EurMcwi | epididymal fat pad weight | control condition | Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28. | epididymal fat pad mass | male | 119 days | | | | | | | | | | | | 200 | | | | | | |
| | | | | | | | | | | | | | | | | | | | BUF_2017_8 | 5.24 g | | BUF/NHsd | male | retroperitoneal fat pad weight |
| | | | | | | | | | | | | | | | | | | | BUF_2017_3 | 5.49 g | | BUF/NHsd | male | retroperitoneal fat pad weight |
| | | | | | | | | | | | | | | | | | | | BUF_2017_4 | 5.61 g | | BUF/NHsd | male | retroperitoneal fat pad weight |
| | | | | | | | | | | | | | | | | | | | BUF_2017_7 | 5.83 g | | BUF/NHsd | male | retroperitoneal fat pad weight |
| BUF/NHsd | epididymal fat pad weight | control condition | Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28. | epididymal fat pad mass | male | 119 days | | | | | | | | | | | 200 | | | | | | | |
| | | | | | | | | | | | | | | | | | | BUF_2017_5 | 6.33 g | | BUF/NHsd | male | retroperitoneal fat pad weight | |
| | | | | | | | | | | | | | | | | | | BUF_2017_2 | 12.41 g | | BUF/NHsd | male | retroperitoneal fat pad weight | |
| BUF_2017_1 | 13.39 g | | BUF/NHsd | male | retroperitoneal fat pad weight | | | | | | | | | | | | | | | | | | | |
| F344/NHsd | epididymal fat pad weight | control condition | Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28. | epididymal fat pad mass | male | 119 days | 17 | 7.99 | g | 0.72 | 2.98 | Download Values | scale | | 0 | 138402 | 3200 | | | | | | | |
| F344/NSlc | epididymal fat pad weight | control condition | Kotoh J, et al., J Vet Med Sci. 2016 Aug 11. | epididymal fat pad mass | male | 175 days | 7 | 13.23 | g | 0.81 | 2.14 | | post excision weight measurement | 0.0 | 0 | 98059 | 1978 | | | | | | | |
| ACI/EurMcwi | retroperitoneal fat pad weight | control condition | Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28. | retroperitoneal fat pad mass | male | 119 days | 18 | 3.57 | g | 0.22 | 0.95 | Download Values | scale | | 0 | 138386 | 3200 | | | | | | | |

RGD Registration and Data Submission

RGD accepts multiple types of direct data submissions. These include...



PhenoMiner Data Submission

provides information and forms for submitting quantitative phenotype measurement data to RGD for inclusion in PhenoMiner.



Strain Registration

provides a form to let you register your strain with RGD.



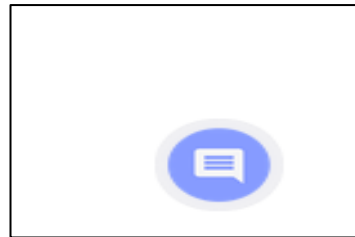
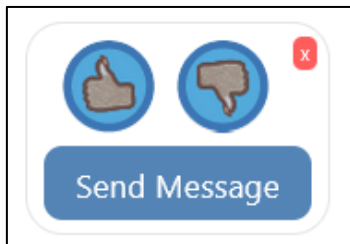
Gene/Allele Registration

provides a form to let you register a gene or allele with RGD.



QTL Registration

provides a form to let you register your QTL with RGD.



Coming soon!

To acknowledge data submission, RGD is going to

Project: Kwitek Data for Bisphenol F Exposure on Inbred Founders of Heterogeneous Stock Rats

Description:

Data comprise of quantitative phenotype values for individual HS founder rats exposed to BPF.

RGD References

Genetic background in the rat affects endocrine and metabolic outcomes of bisphenol F exposure..

Wagner VA, et al., Toxicol Sci. 2023 Jun 28;194(1):84-100. doi: 10.1093/toxsci/kfad046.. RGD ID: [401824684](#)

Submitter Information

- Valerie Wagner
- Anne Kwitek

Submitted Files

Phenotypes

- [Kwitek Data for Bisphenol F Exposure on Inbred Founders of Heterogeneous Stock Rats](#)

| Object Information | |
|--------------------|-----------------------------|
| Rgd Id: | 401827281 |
| Created: | 2023-09-27 |
| Species Type: | Rat <input type="text"/> |
| Last Modified: | 2023-09-27 |
| Status: | ACTIVE <input type="text"/> |
| | ACTIVE |
| | RETIRED |
| | WITHDRAWN |

Project: Solberg Woods Data for Adiposity in Heterogeneous Stock Rats

Description:

Data comprise of quantitative phenotype values and genotypes for individual heterogeneous stock rats and inbred founders. ...

RGD References

Genetic Fine-Mapping and Identification of Candidate Genes and Variants for Adiposity Traits in Outbred Rats..

Keele GR, et al., Obesity (Silver Spring). 2018 Jan;26(1):213-222. doi: 10.1002/oby.22075. Epub 2017 Nov 28.. RGD ID: [38548922](#)

Sept8/SEPTIN8 involvement in cellular structure and kidney damage is identified by genetic mapping and a novel human tubule hypoxic model.

Keele GR, et al., Sci Rep. 2021 Jan 22;11(1):2071. doi: 10.1038/s41598-021-81550-8.. RGD ID: [127345129](#)

Submitter Information

- Leah Solberg Woods

Annotation [Click to see Annotation Detail View](#)

Strains with Phenominer Data

| | | |
|----------------------------|------------------------------|-----------------------------|
| + NMci:HS | + ACI/EurMci | + BN/SsNHsd |
| + BUF/NHsd | + F344/NHsd | + M520/N |
| + WKY/NHsd | | |

Phenotype Annotations [Click to see Annotation Detail View](#)

Mammalian Phenotype

| | | |
|--|---|---|
| decreased epididymal fat pad weight (IAGP) | decreased retroperitoneal fat pad weight (IAGP) | increased body mass index (IAGP) |
| increased body weight (IAGP) | increased epididymal fat pad weight (IAGP) | increased retroperitoneal fat pad weight (IAGP) |

The RGD Team

Principal Investigator: Anne Kwitek, PhD

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Thank you!

The rat research community and researchers who faithfully contribute the data and use our website!



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CORE
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RESOURCE

