

The Greenwood Genetic Center: A Privileged Institution

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JC Self Research Institute
Greenwood Genetic Center

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Greenwood Genetic Center

Origins - 1974



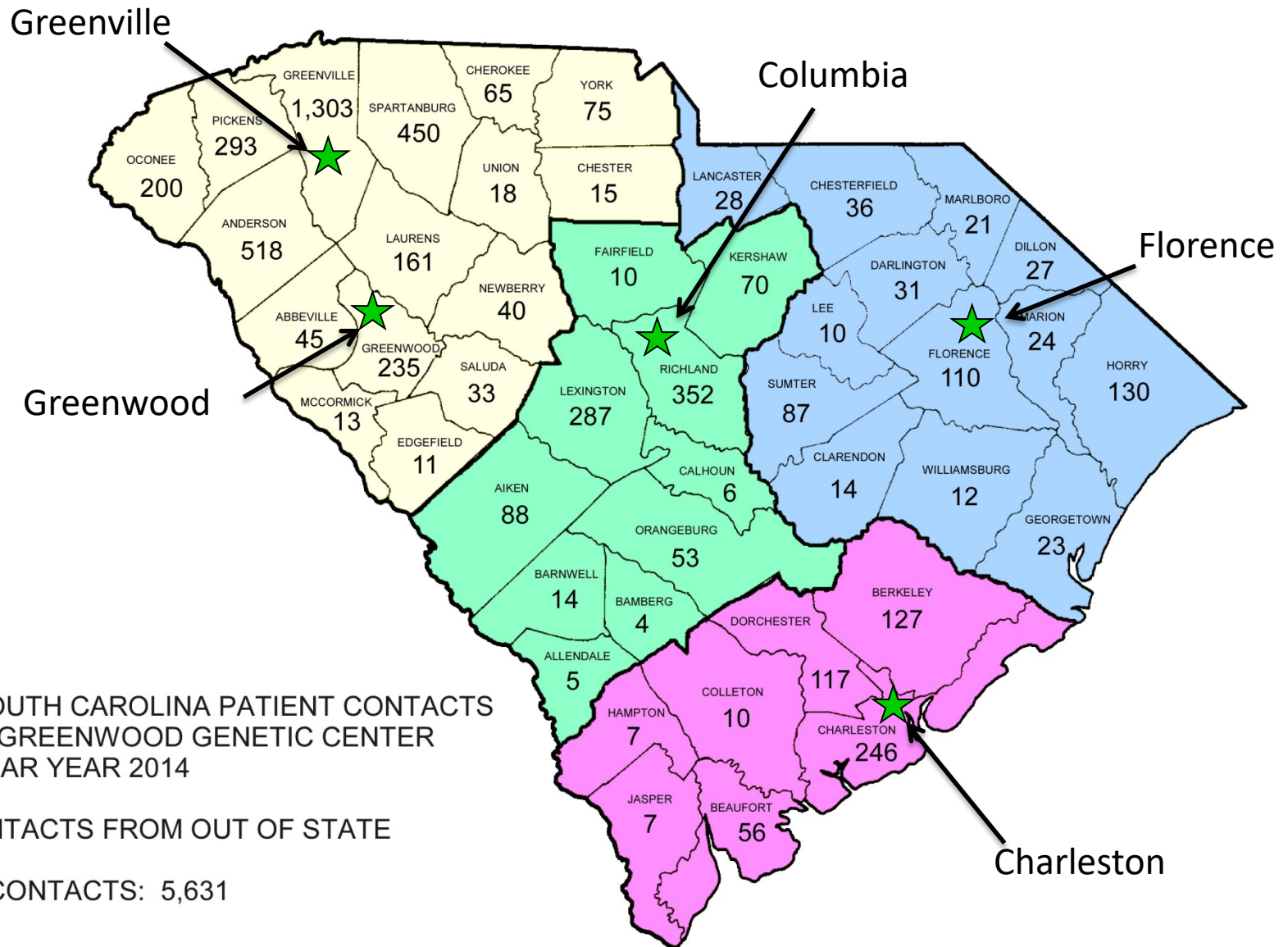
Private, non-profit institute

Greenwood Genetic Center

Mission:

- Provide clinical genetic services and diagnostic testing
- Develop educational programs and materials
- Conduct research in the field of medical genetics

Genetic Clinics



The Focus of the Greenwood Genetic Center

Intellectual Disabilities

Birth Defects

Autism

JC Self Research Institute of Human Genetics

Research Division of the Greenwood Genetic Center

Research Teams

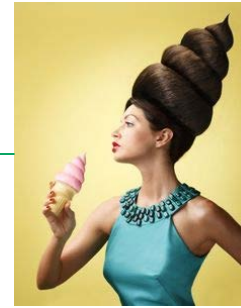
- Mental Retardation
- Autism
- Limb Malformations
- NTD / Birth Defects



That Recessive Gene



Burger King



Dairy Queen



Dairy Princess



Burger Prince



Mr. Pizza

XLID

Identified >28 XLID genes

Enrolled >700 families

Associated with numerous rare syndrome
support groups

NTD

SC Birth Defects Prevention Program – 1991

Decreased rate of NTDs by >60%

Accounts for 70 healthy babies/year

Autism

South Carolina Autism Project (SCAP): 1996
200 Probands

2nd Cohort ASD (2014): 100 Probands

3rd Cohort ASD (2015): 100 Probands

Capabilities

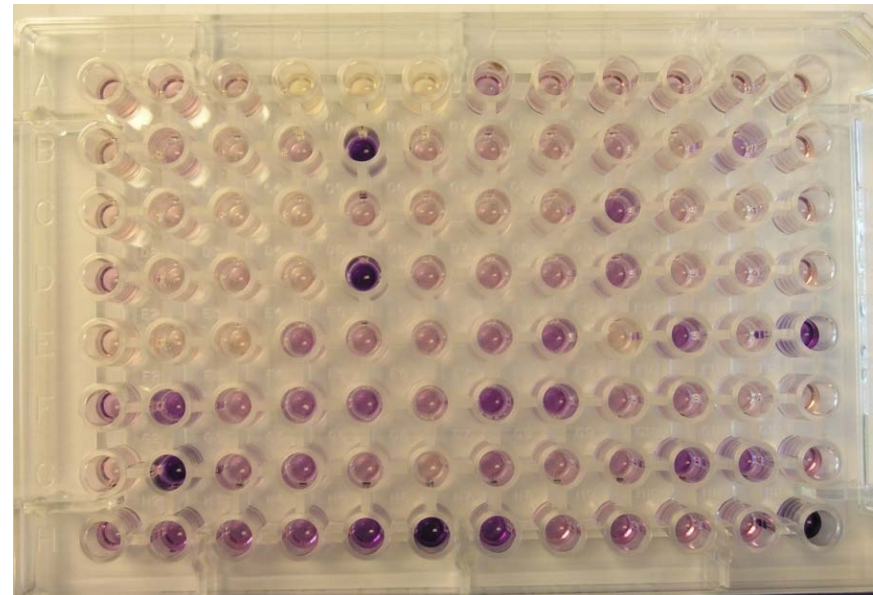
- Next Generation Sequencing
- Microarray Analyses
- Biochemical Analysis
- Molecular Genetic Studies

Collaborations

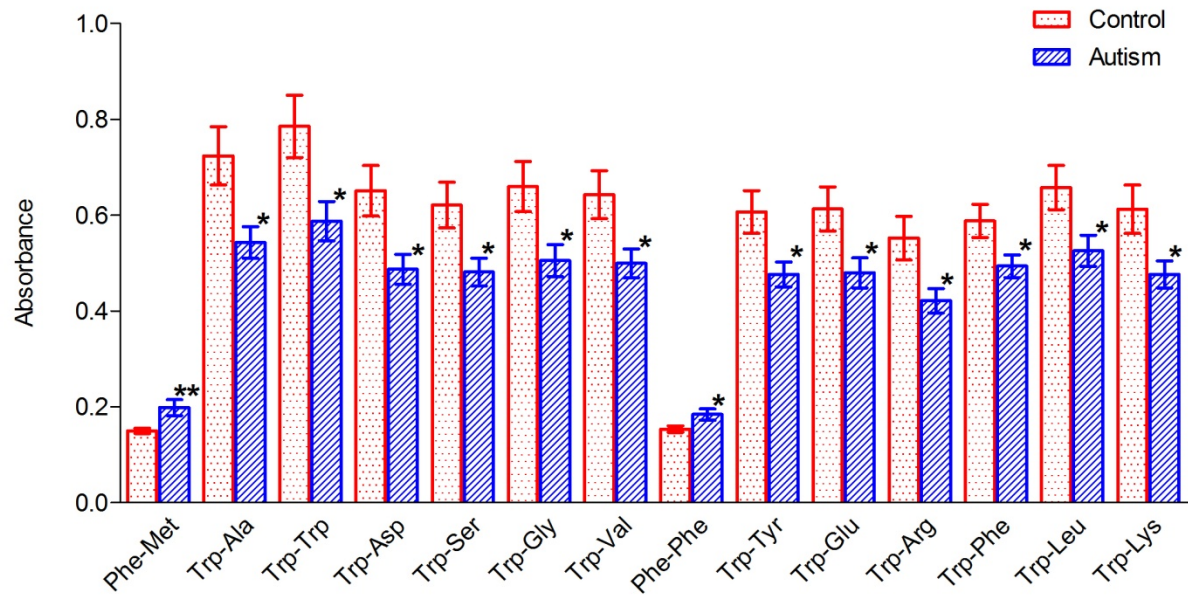
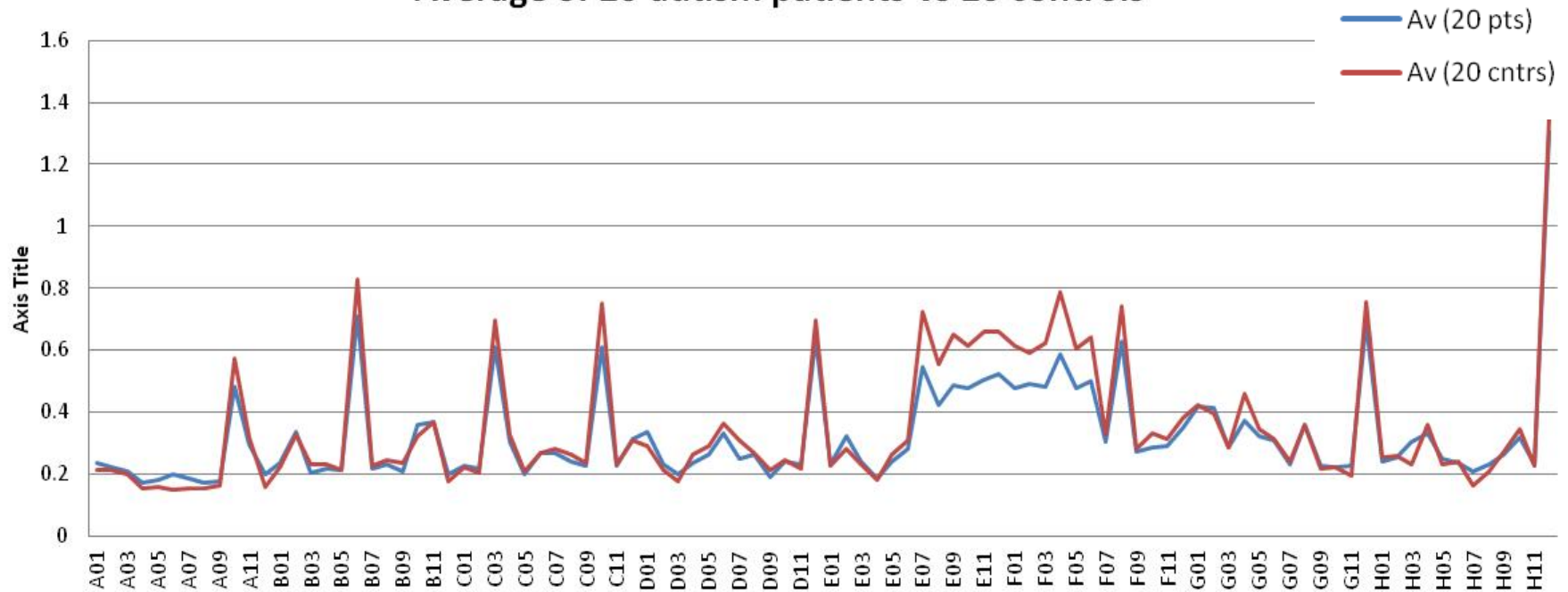
- Functional Studies
 - Electrophysiology
 - Cell biology
 - Animal models
- Proteomic Analyses

Biolog PMM Plates

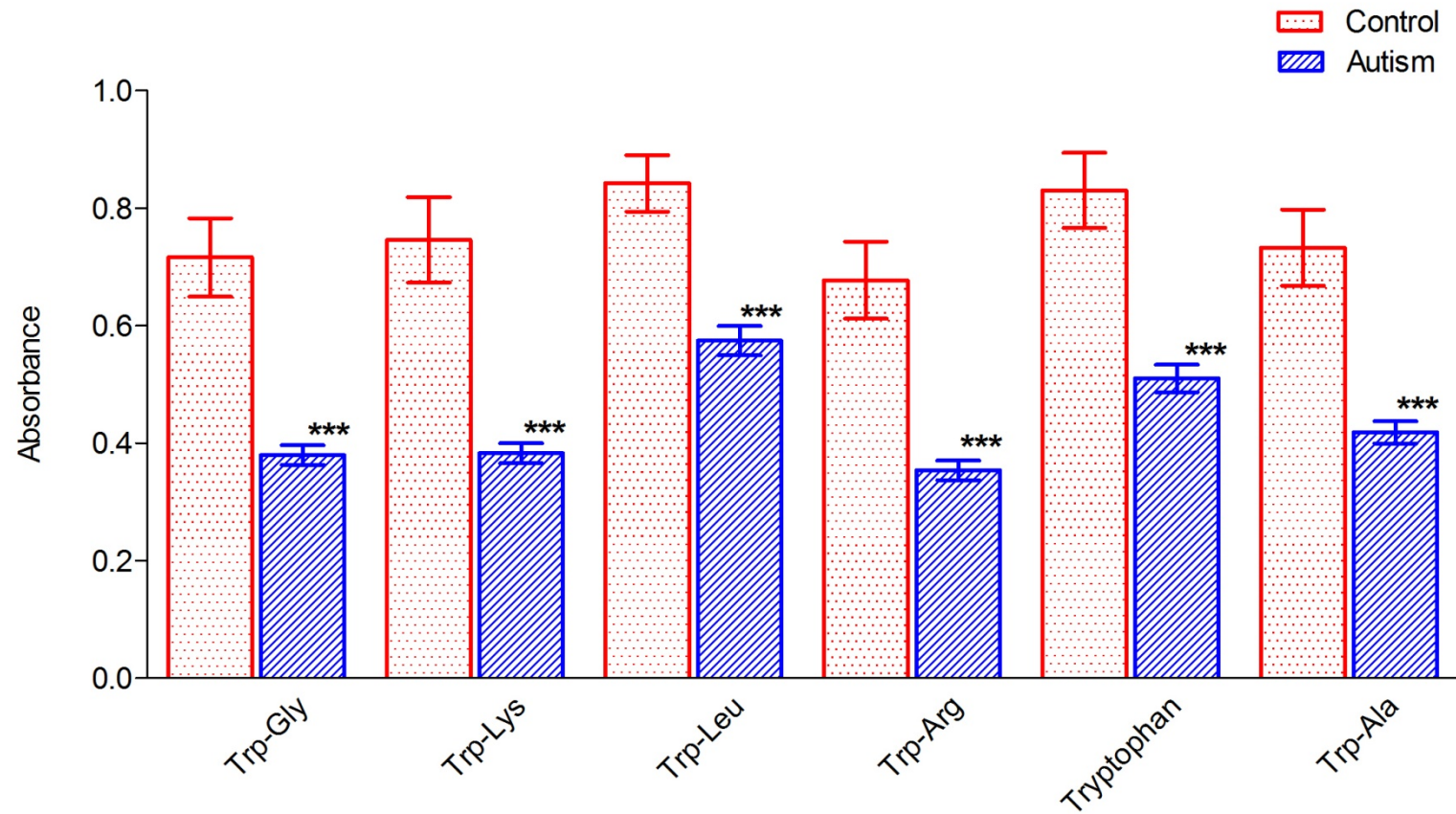
- 50 μ l/well of cell suspension (20,000 cells/well)
- Incubate 40-48 hours, add Redox Dye Mix (tetrazolium) and incubate for 24 hours
- Plate substrates:
 1. Carbon energy sources (sugars, polysaccharides, nucleotides, and carboxylic acids)
 - 2-4. Amino acids and dipeptides
 5. Ions
 - 6-8. Hormones and metabolic effectors

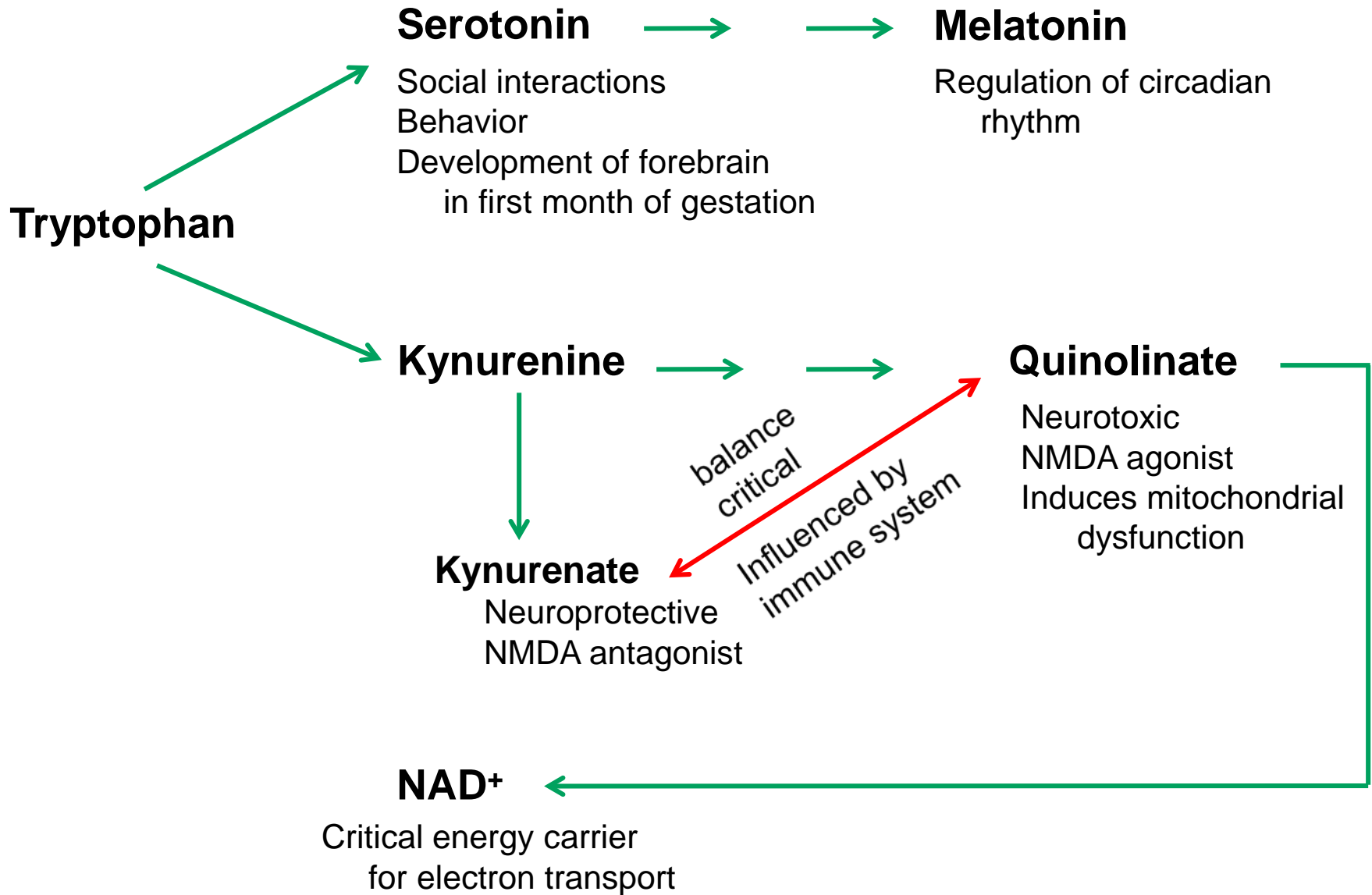


Average of 20 autism patients vs 20 controls



50 ASD patients vs. 50 controls





Screening Test

With All Tryp

Sample	Correct	Error	
Autism	46	4	50
Control	33	17	50

Sensitivity = 92%

Specificity = 66% Bagging

With All Tryp and PM5

Sample	Correct	Error	
Autism	46	4	50
Control	46	4	50

Sensitivity = 92%

Specificity = 92% Bagging

Greenwood Genetic Center



It's in our genes