

THE ROLE OF DIET IN THE REGULATION OF *DROSOPHILA* OVARIAN
STEM CELLS AND THEIR PROGENY

By

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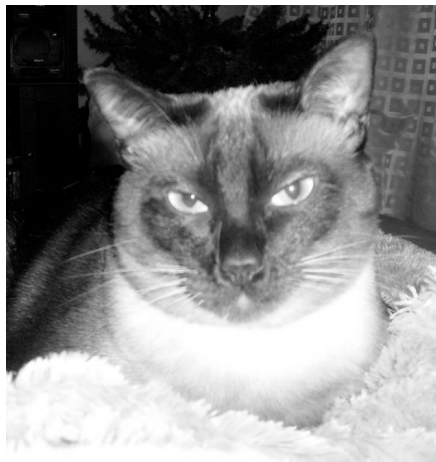
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LIST OF ABBREVIATIONS

β -gal- β galactosidase (LacZ)

2D LC-MS/MS- 2-Dimensional Liquid Chromatography Tandem Mass Spectrometry

4E-BP- Eukaryotic translation initiation factor eIF4e binding protein (*Thor* in *Drosophila*)

A2BP1- Ataxin 2-binding protein 1

AdipoR- Adiponectin receptor

Adp- Adipose

AKT/PKB- Protein kinase B

ALS- Acid labile subunit (CG8561)

AMP- 5' adenosine monophosphate

AMPK- 5' adenosine monophosphate-activated protein kinase

AMPKK- AMPK kinase

APC- Anaphase promoting complex

APC- Anaphase promoting complex

arm-LacZ- Armadillo LacZ

Atg1,13, and 17- Autophagy-related genes

ATP- adenosine triphosphate

Bam- Bag of marbles

BGCN- Benign gonial cell neoplasm

BMI- Body Mass Index

Bmm- Brummer

BMP- Bone morphogenic protein

BrdU- 5-bromo-2-deoxyuridine

C. elegans- *Caenorhabditis elegans*

CaMKK- Calmodulin-dependent protein kinase kinase

Cdc- cell division cycle

Cdk- cyclin-dependent kinase

CG5315- *Drosophila* adiponectin receptor (dAdipoR)

CHIPS- Complete Hierarchical Integration of Protein Searches

CNS- central nervous system

CycB- Cyclin B

CycE- Cyclin E

Dap- Dacapo

DAPI- 4',6-diamidino-2-phenylindole

DGC- *Drosophila* Gene Collection

DGRC- *Drosophila* Genomics Resource Center

DIAP- *Drosophila* inhibitor of apoptosis protein

DILP- *Drosophila* insulin-like peptide

DNA- deoxyribonucleic acid

DPP- Decapentaplegic

Drk- *Drosophila* homolog of the SH2-SH3 domain adaptor protein Grb2

DSHB- Developmental Studies Hybridoma Bank

DTC- Distal tip cell

Dup- Double-parked

E2F- E2F transcription factor

E-Cad- E-Cadherin

EdU- 5-ethynyl-2-deoxyuridine

eIF4E- Eukaryotic initiation factor 4E

eIF4G- Eukaryotic initiation factor 4G

ExPASy- Expert Protein Analysis System

F-6-P- Fructose-6-phosphate

Fas III- Fasciclin III

FAT- Focal adhesion kinase targeting

FATC- C-terminal FAT kinase domain

FBF1,2- *C. elegans* relative of *Drosophila* Pumilio

Flp- Flipase

FOXO- Forkhead box, sub-group “O”

FRB- FKBP12-rapamycin binding domain

FRT- Flipase recognition target

FSC- Follicle stem cell

FSH- Follicle-stimulating hormone

G-6-P- Glucose-6-phosphate

GBB- Glass bottom boat

GDNF- Glial cell-line-derived neurotropic factor

Gel-C-MS/MS- In-gel tryptic digestion followed by liquid chromatography-tandem mass spectrometry

GFP- Green fluorescent protein

GLD1,3- *C. elegans* ortholog of *Drosophila* Bicaudal-C

GLUT4- Glucose transporter type 4

GSC- Germline stem cell

HEAT- Huntingtin elongation factor 3, protein phosphatase 2A, PI3-kinase TOR1

Hh- Hedgehog

HS- Heat-shock

HSC- Hematopoietic stem cell

Hts- Hu-li tai shao

hts-RC- Hu-li tai shao ring canal

IDGF- Imaginal disc growth factor

IGF- Insulin-like growth factor

Imp-L2- Ecdysone-inducible gene L2

InR- Insulin receptor

IRS- Insulin receptor substrate

iTRAQ- isobaric tags for relative and absolute quantitation

LamC- Lamin C

LKB1/STK11- Serine/threonine kinase 11

Lsd2,1- Lipid storage droplet 1 and 2

LSM- Laser Scanning Microscope

LSP- Larval serum protein

MAPK- Mitogen-activated protein kinase

Mdm2- Murine double minute oncogene

MRLC- Non-muscle regulatory light chain

MSC- Mesenchymal stem cell

MudPIT- Multidimensional Protein Identification Technology

Nos- Nanos

NSC- Neural stem cell

Orb- OO18-RNA binding

PAQR- Progestin and adipoQ receptor

PBS- Phosphate buffered saline

Pelo- Pelota

PH- Pleckstrin homology domain

PHH3- Phosphohistone H3

PHO36 (IZH2)- Plasma membrane protein involved in zinc homeostasis and osmotin-induced apoptosis

PI3K- Phosphoinositide 3-kinase

PIKK- Phosphoinositol kinase-related kinase

PMSF- Phenylmethanesulfonylfluoride

pSORT- program for subcellular localization prediction

PTEN- Phosphatase and tension homolog

Pum- Pumilio

Put- Punt

PX- Phox homology domain

Raptor- Regulatory-associated protein of TOR

Rb- Retinoblastoma

Rheb- Ras homolog enriched in brain

Rictor- Rapamycin-insensitive companion of TOR

RNA- Ribonucleic acid

RP49- Ribosomal protein 46 (standard control for RT-PCR)

RT-PCR- Reverse Transcription Polymerase Chain Reaction

S. cerevisiae- Saccharomyces cerevisiae

S6K- Ribosomal protein S6-p70-protein kinase

Sax- Saxophone

SCF- Skp, Cullin, F-box containing complex

Sema-2a- Semaphorin-2a

Slif- Slimfast

SLIP- Self-Ligation of Inverse PCR Products

STAT3- Signal transducer and activator of transcription 3

Stg- String

TAG- Triacylglycerol or Triglyceride

TargetP- program for subcellular location of eukaryotic proteins

TCA- Tricarboxylic acid cycle

TCA- Trichloroacetic acid

TGF β - Transforming growth factor β

Tkv- Thickveins

TMHMM- program for prediction of transmembrane helices in proteins

TNF α - Tumor necrosis factor-alpha

TOR- Target of rapamycin

TOS- TOR signaling motif

TSC1/2- Tuberous sclerosis protein 1 and 2 complex

TUNEL- Terminal deoxynucleotidyl transferase dUTP nick end labeling

UAS- Upstream activating sequence

Vas- Vasa

VDRC- Vienna *Drosophila* RNAi Center

Vps34- Vacuolar protein sorting 34

WDTC1- WD and tetratricopeptide repeats 1 (human homolog of adipose)

YP- Yolk protein