

ON THE NATURE OF THE SENSORY ARRESTINS OF THE DIPTERAN INSECTS

ANOPHELES GAMBIAE AND *DROSOPHILA MELANOGASTER*

By

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who have encouraged and inspired me
to do my best and give it my all
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LIST OF ABBREVIATIONS

7TM	seven transmembrane
β_2 AR	β_2 adrenergic receptor
AC	adenylyl cyclase
Arr	arrestin
AgArr	<i>Anopheles gambiae</i> arrestin
AgOr	<i>Anopheles gambiae</i> odorant receptor
AP	alkaline phosphatase
cAMP	cyclic adenosine monophosphate
CNG	cyclic nucleotide gated
CO ₂	carbon dioxide
DIG	digoxigenin
DmArr	<i>Drosophila melanogaster</i> arrestin
DmOr	<i>Drosophila melanogaster</i> odorant receptor
EAG	electroantennogram
FITC	Fluorescein isothiocyanate
FISH	fluorescence <i>in situ</i> hybridization
G protein	guanine nucleotide-binding protein
GFP	green fluorescent protein
GPCR	G protein-coupled receptor
GRK	G protein receptor kinase
GS	gene switch
ISH	<i>in situ</i> hybridization

MAPK-----mitogen-activated protein kinase
MOE-----main olfactory epithelium
MGC-----macrogglomerular complex
NH₃-----ammonia
OBP-----odorant binding protein
ODE-----odorant degrading enzyme
OR-----odorant receptor
ORN-----odorant receptor neuron
POD-----peroxidase
PBS-----phosphate buffered saline
PLC-----phospholipase C
RT-PCR-----Real Time PCR
SH3-----Src kinase Homology 3
SNMP-----sensory neuron membrane protein
SSR-----single sensillum recording
TARGET-----temporal and regional gene expression targeting
UTP-----uridine triphosphate
VNO-----vomeronasal organ