

AOP ID and Title:

SNAPSHOT

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AOP 71: Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation

Short Title: Decreased Adult Testosterone 2

Authors

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Status

Author status	OECD status	OECD project	SAAOP status
Under development: Not open for comment. Do not cite		1.29	Under Development

Summary of the AOP

Events

Molecular Initiating Events (MIE), Key Events (KE), Adverse Outcomes (AO)

Sequence	Type	Event ID	Title	Short name
1	MIE	650	Stimulation of adult Leydig cells via the Adrenal Corticosterone, Increased Glucocorticoid (https://aopwiki.org/events/650)	Stimulation of adult Leydig cells via the Adrenal Corticosterone, Increased Glucocorticoid
2	KE	525	Apoptosis of adult Leydig cells, Decreased testosterone by adult Leydig cells (https://aopwiki.org/events/525)	Apoptosis of adult Leydig cells, Decreased testosterone by adult Leydig cells
3	KE	651	Glucocorticoid Receptor mediated alterations in steroidogenic enzymes, Decreased testosterone by adult Leydig cells (https://aopwiki.org/events/651)	Glucocorticoid Receptor mediated alterations in steroidogenic enzymes, Decreased testosterone
4	KE	652	Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig cells (https://aopwiki.org/events/652)	Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig
5	AO	520	Decreased sperm quantity or quality in the adult, Decreased fertility (https://aopwiki.org/events/520)	Decreased sperm quantity or quality in the adult, Decreased fertility

Key Event Relationships

There are no Relationships associated with this AOP

Overall Assessment of the AOP

Domain of Applicability

Life Stage Applicability

Life Stage	Evidence
Adult, reproductively mature	High

Taxonomic Applicability

Term	Scientific Term	Evidence	Links
Rattus norvegicus	Rattus norvegicus	High	NCBI (http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&id=10116)
Homo sapiens	Homo sapiens	High	NCBI (http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&id=9606)

Sex Applicability

Sex	Evidence
Male	High

References

Appendix 1

List of MIEs in this AOP

Event: 650: Stimulation of adult Leydig cells via the Adrenal Corticosterone, Increased Glucocorticoid (<https://aopwiki.org/events/650>)

Short Name: Stimulation of adult Leydig cells via the Adrenal Corticosterone, Increased Glucocorticoid

Key Event Component

Process	Object	Action
glucocorticoid biosynthetic process	glucocorticoid	increased
cell activation		increased

AOPs Including This Key Event

AOP ID and Name	Event Type
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation (https://aopwiki.org/aops/71)	MolecularInitiatingEvent

Biological Context

Level of Biological Organization
Molecular

List of Key Events in the AOP

Event: 525: Apoptosis of adult Leydig cells, Decreased testosterone by adult Leydig cells (<https://aopwiki.org/events/525>)

Short Name: Apoptosis of adult Leydig cells, Decreased testosterone by adult Leydig cells

Key Event Component

AOP71

Process	Object	Action
	testosterone	decreased
apoptotic process		increased

AOPs Including This Key Event

AOP ID and Name	Event Type
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation (https://aopwiki.org/aops/71)	KeyEvent

Biological Context

Level of Biological Organization
Cellular

Cell term

Cell term
Leydig cell

Event: 651: Glucocorticoid Receptor mediated alterations in steroidogenic enzymes, Decreased testosterone by adult Leydig cells (<https://aopwiki.org/events/651>)

Short Name: Glucocorticoid Receptor mediated alterations in steroidogenic enzymes, Decreased testosterone

Key Event Component

Process	Object	Action
glucocorticoid receptor activity	glucocorticoid receptor	abnormal

AOPs Including This Key Event

AOP ID and Name	Event Type
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation (https://aopwiki.org/aops/71)	KeyEvent

Biological Context

Level of Biological Organization
Cellular

Event: 652: Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig cells (<https://aopwiki.org/events/652>)

Short Name: Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig

Key Event Component

Process	Object	Action
regulation of steroid biosynthetic process		abnormal

AOPs Including This Key Event

AOP71

AOP ID and Name	Event Type
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation (https://aopwiki.org/aops/71)	KeyEvent

Biological Context

Level of Biological Organization
Cellular

List of Adverse Outcomes in this AOP

Event: 520: Decreased sperm quantity or quality in the adult, Decreased fertility (<https://aopwiki.org/events/520>)

Short Name: Decreased sperm quantity or quality in the adult, Decreased fertility

Key Event Component

Process	Object	Action
sperm quantity		decreased
	sperm	morphological change
	fertility	decreased
	sperm	decreased

AOPs Including This Key Event

AOP ID and Name	Event Type
Aop:70 - Modulation of Adult Leydig Cell Function Subsequent to Proteomic Alterations in the Adult Leydig Cell (https://aopwiki.org/aops/70)	AdverseOutcome
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation (https://aopwiki.org/aops/71)	AdverseOutcome
Aop:64 - Glucocorticoid Receptor (GR) Mediated Adult Leydig Cell Dysfunction Leading to Decreased Male Fertility (https://aopwiki.org/aops/64)	KeyEvent

Biological Context

Level of Biological Organization
Individual

Appendix 2

List of Key Event Relationships in the AOP

There are no Relationships associated with this AOP