

## 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 Do not cite		1.29	Under Development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 ( <a href="https://aopwiki.org/events/650">https://aopwiki.org/events/650</a> )	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 ( <a href="https://aopwiki.org/events/525">https://aopwiki.org/events/525</a> )	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 ( <a href="https://aopwiki.org/events/651">https://aopwiki.org/events/651</a> )	Glucocorticoid Receptor mediated alterations in steroidogenic enzymes, Decreased testosterone by adult Leydig cells
4	KE	652	Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig cells ( <a href="https://aopwiki.org/events/652">https://aopwiki.org/events/652</a> )	Direct effects of Corticosterone on steroidogenesis, Decreased testosterone by adult Leydig cells
5	AO	520	Decreased sperm quantity or quality in the adult, Decreased fertility ( <a href="https://aopwiki.org/events/520">https://aopwiki.org/events/520</a> )	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 ( <a href="http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&amp;id=10116">http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&amp;id=10116</a> )
Homo sapiens	Homo sapiens	High	NCBI ( <a href="http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&amp;id=9606">http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&amp;id=9606</a> )

**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 ( <a href="https://aopwiki.org/aops/71">https://aopwiki.org/aops/71</a> )	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 ( <a href="https://aopwiki.org/aops/71">https://aopwiki.org/aops/71</a> )	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 ( <a href="https://aopwiki.org/aops/71">https://aopwiki.org/aops/71</a> )	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

AOP ID and Name	Event Type
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation ( <a href="https://aopwiki.org/aops/71">https://aopwiki.org/aops/71</a> )	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 ( <a href="https://aopwiki.org/aops/70">https://aopwiki.org/aops/70</a> )	AdverseOutcome
Aop:71 - Modulation of Adult Leydig Cell Function Subsequent to Glucocorticoid Activation ( <a href="https://aopwiki.org/aops/71">https://aopwiki.org/aops/71</a> )	AdverseOutcome
Aop:64 - Glucocorticoid Receptor (GR) Mediated Adult Leydig Cell Dysfunction Leading to Decreased Male Fertility ( <a href="https://aopwiki.org/aops/64">https://aopwiki.org/aops/64</a> )	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