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## Abstract

## Introduction

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## History

### Backdoor Pathways to 5 $\alpha$ -Dihydrotestosterone



## 5 $\alpha$ -Dione Pathway

*in vitro*

## 11-Oxygenated Androgen Pathways

### Definition

### Nomenclature and Background

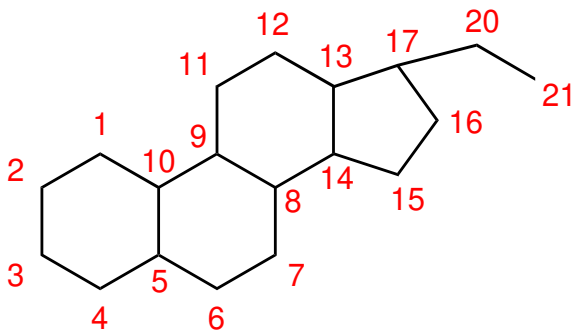


Figure 1



*sic*

## Biochemistry

### Backdoor Pathways to 5 $\alpha$ -Dihydrotestosterone

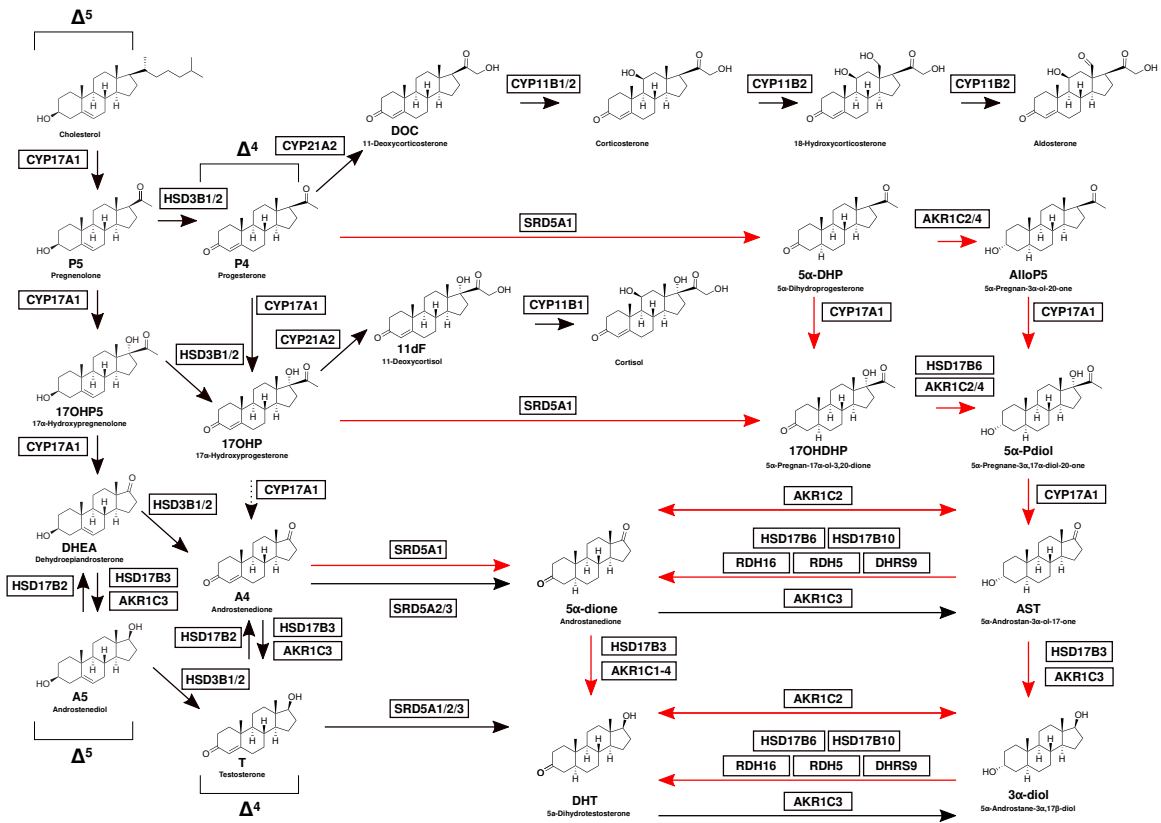


Figure 2



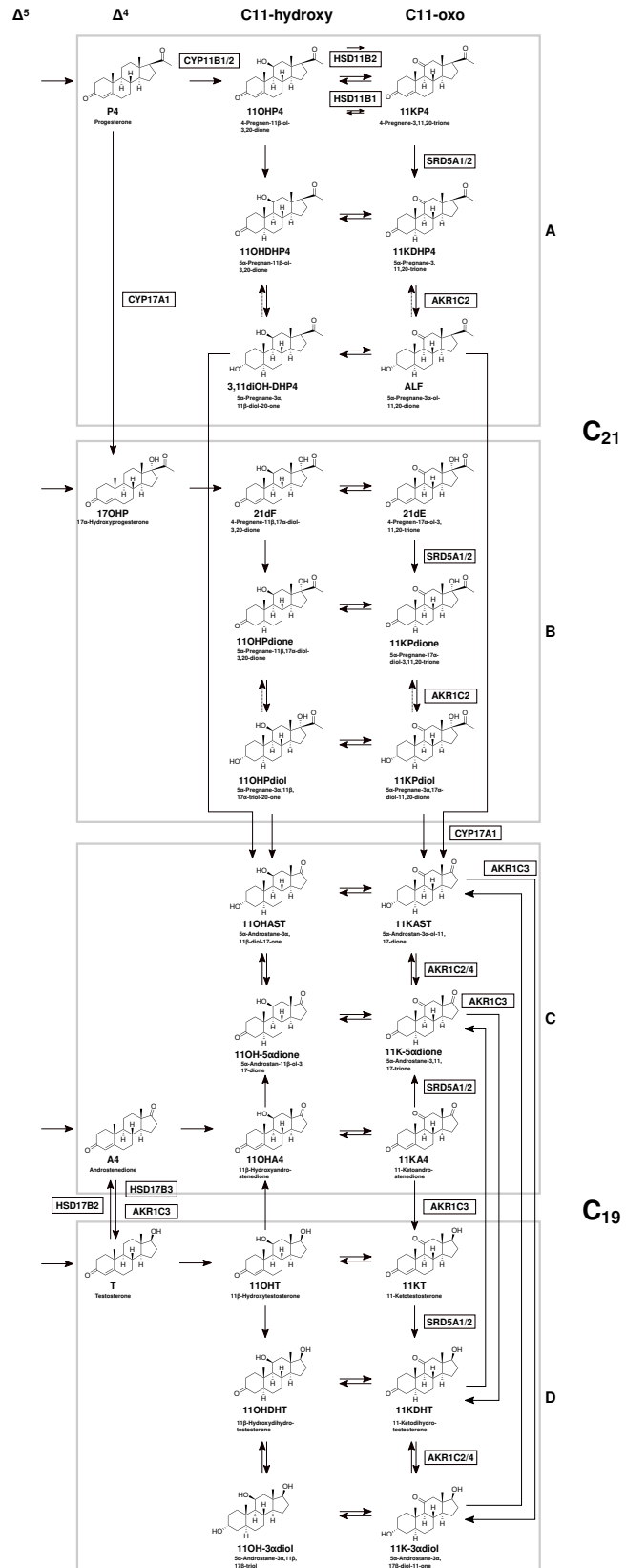
## 17 $\alpha$ -Hydroxyprogesterone Pathway

## 5 $\alpha$ -Dione Pathway

## Progesterone Pathway



Figure 3







## 11-Oxygenated Androgen Pathways

*in vitro*

**Other Backdoor Androgen Pathways**



## Clinical Significance

### 11-Oxygenated Androgens

### Hyperandrogenism

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## Congenital Adrenal Hyperplasia

## Other Disorders of Sex Development



## Premature Adrenarche

## Polycystic Ovary Syndrome

## Cushing's Disease



## Prostate Cancer

### Future Directions

**The role of non-classical CAH in  
CP/CPPS**

**Benign Prostatic Hyperplasia,  
Chronic Prostatitis/Chronic Pelvic  
Pain Syndrome**

**The biomarkers of disease control in  
CAH due to CYP21A2 deficiency**



## SRD5A2 in the backdoor pathway to DHT

### Additional Information

#### Acknowledgements

#### Competing Interests

#### Immune Response Regulation

#### Funding

## Abbreviations and Identifiers

### Steroids

| Abbreviation | Systematic Name | Trivial Name | Other Names and Abbreviations | PubChem CID |
|--------------|-----------------|--------------|-------------------------------|-------------|
|              |                 |              |                               |             |
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| Abbreviation | Systematic Name | Trivial Name | Other Names and Abbreviations | PubChem CID |
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| Abbreviation | Systematic Name | Trivial Name | Other Names and Abbreviations | PubChem CID |
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**Enzymes**

| HGNC Gene Symbol | Enzyme Name |
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| HGNC Gene Symbol | Enzyme Name |
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### Conditions

| Abbreviation | Full Name |
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### Other Abbreviations

| Abbreviation | Full Name |
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