Appendix C4 – Steroidogenesis (Sliced testes)

Steroidogenesis (Sliced Testes)	
Purpose	Provides an in vitro assay to detect chemicals that affect the synthesis of the sex steroid hormones.
Design	Fresh testes are sliced into approximately 50-100 mg fragments. Each fragment is incubated in 9 mm test tubes for 4 hours. After each hour, the supernatant is collected and fresh media with or without test chemical (as appropriate) was added. A composite sample was prepared and analyzed at the end of the four hour incubation period. Aminoglutethimide serves as the positive control and 2,4-dintirophenol served as the cytotoxicity control.
Endpoints	Testosterone is measured by radioimmunoassay (RIA). Cell viability was determined by the LDH assay.
Interpretation	Fold or percent inhibition is the basis for expressing the outcome of the assay. No data interpretation criteria were adopted by the EPA.
Main peer review comments	At the recommendation of the EDMVAC, EPA terminated efforts on this assay prior to the interlaboratory validation phase.
Strengths	• Only assay that is specific for the entire steroidogenesis pathway. • Rapid and inexpensive • Detects chemicals that inhibit steroidogenesis • Results appear to correlate well with other in vitro and in vivo data

Steroidogenesis (Sliced Testes)	
Limitations	• Cannot identify chemicals that **induce** steroidogenesis. • Cannot detect chemicals that are toxic specifically to the Leydig cell. • Limited metabolism