



## CORPUS CAVERNOSUM

### FUNCTIONAL PHARMACOLOGY ASSAYS

#### PATHOLOGIES OF INTEREST

- Erectile dysfunction (ED)

#### SPECIES

- Animal (rat, rabbit, guinea-pig, others upon request)

#### TISSUES

- Cavernosal smooth muscle

#### FUNCTIONAL RECEPTORS / ENZYMES

- Muscarinic receptors
- Adrenoceptors ( $\alpha 1$ )
- EP1, EP2, EP3 receptors (PGE1)
- ET-A , ET-B receptors (ET-1)
- Rho Kinase
- Phosphodiesterases
- Soluble guanylate cyclase
- Others

#### MODEL DESCRIPTION

The penis is removed and cavernosal smooth muscle is dissected free from the *tunica albuginea*.

The erectile tissue is cut into small strips and mounted under 2 g initial tension in 5 ml organ baths containing oxygenated Krebs-Henseleit solution.

Contractile responses are measured using isometric tension transducers and recorded using a data acquisition system. After one hour of equilibration, tissues are treated with a concentration of norepinephrine or phenylephrine that produces a submaximal response.

Examples of two experimental protocols:

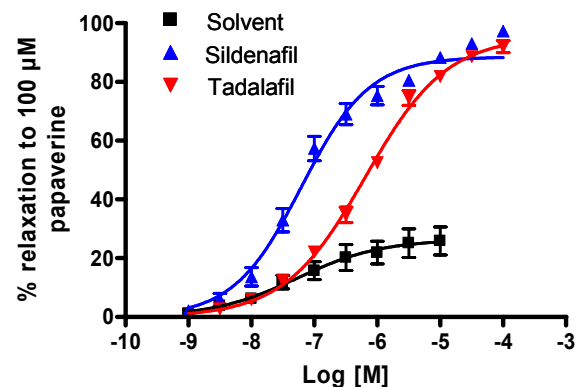
**Protocol A:** Relaxation of pre-contracted tissues by increasing concentrations of test compound.

**Protocol B:** Relaxation of pre-contracted tissues by increasing frequencies of electrical field stimulation in the presence (or absence) of a test compound.

#### SCIENTIFIC PUBLICATIONS

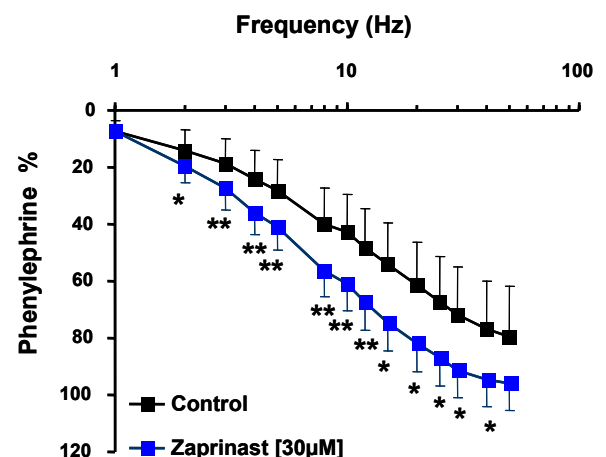
- Palea S et al, *NS Arch Pharmacol* **358** (1, sup), 1998
- Barras M and Palea S, *BJU Int* **91**: 873-7, 2003

#### Protocol A



Effect of increasing concentrations of sildenafil and tadalafil on rabbit isolated *corpus cavernosum* precontracted with 30  $\mu$ M norepinephrine.

#### Protocol B



Potentiating effects of the PDEV inhibitor (zaprinast) on neurogenic relaxations in rabbit isolated *corpus cavernosum* precontracted with 10  $\mu$ M phenylephrine.