

Vaginal blood flow engorgement measured by Laser Doppler Flowmetry (rat/guinea pig/rabbit)

Objectives:

- To evaluate peripheral sexual response by monitoring blood flow in the vaginal wall using Laser Doppler Perfusion Measurement (LDPM) in baseline conditions and after pelvic nerve stimulation, before and after treatment administration.
- Useful for the evaluation of the effect of drugs developed for female sexual disorders, including lubrication difficulties, vaginal dryness, vaginal atrophy or dyspareunia.

Summarized methodology:

Non-invasive laser doppler microprobes are placed against the inner lateroventral side of the vaginal lumen in anaesthetized animals. A bipolar platinum electrode connected to an electrical stimulator is placed on the pelvic nerve to allow electrical stimulation at different stimulation frequencies in view of establishing a frequency-response curve. The carotid artery is catheterized to record blood pressure.

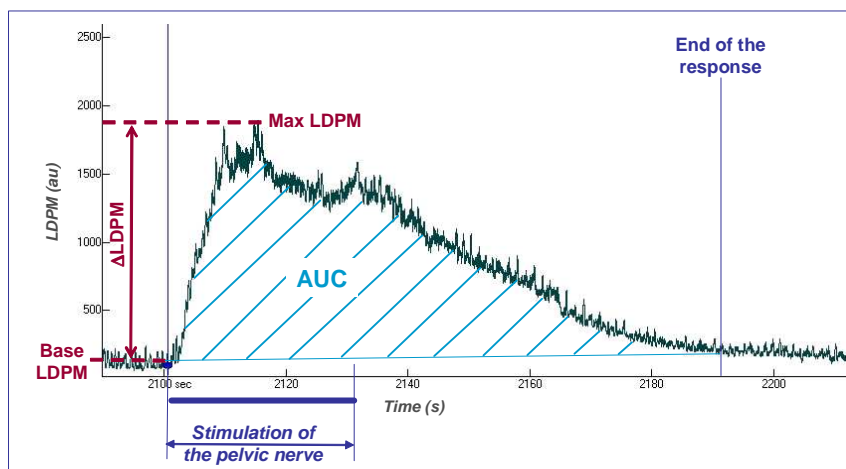


Figure 1: Illustration of the parameters computed for vaginal blood engorgement following electrical stimulation of the pelvic nerve

Endpoints:

- Baseline LDPM and BP, measured during the 30-min baseline period before any pelvic nerve stimulation

And, for each pelvic nerve stimulation:

- the mean maximal amplitude of the response, being the percentage of LDPM increase calculated as follows : $\Delta LDPM \times 100 / \text{Base LDPM}$, and expressed in %
- the area under the curve of the response calculated for the entire response (AUC), normalized by Base LDPM and expressed in % x s
- the vascular capacitance which corresponds to the ratio of the mean maximal amplitude of the response to the corresponding mean BP expressed in % / mmHg.

Related Pelvipharm bibliography:

Giuliano, F. et al. Am J Physiol Regul Integr Comp Physiol (2001): 281:R140-149

Links to applicable therapeutic areas / targeted disorders:

- Sexual pharmacology

* FSD

- Menopause

* Menopausal symptoms

* FSD

- Lower urinary tract