Female sexual dysfunction (FSD)

Human disorder:
According to Master and Johnson (1966), the female sexual response consists of four successive phases: excitement, plateau, orgasm and resolution. In 1979, Kaplan proposed the aspect of sexual desire and the three-phase model consisting of desire, arousal and orgasm. Female sexual dysfunction (FSD) can affect each of these sexual response phases. In the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as well as in the recent reclassification system made by the American Foundation of Urologic Disease (AFUD), FSD has been classified in four main subtypes including hypo-active sexual desire disorder (HSDD), sexual arousal disorder (FSAD), orgasm disorder (FOD) and sexual pain disorder. FSD is a highly prevalent disorder (approximately 30% of women) and epidemiological studies have pointed out that the most common complaint in women is HSDD (Rosen, 2000; Laumann, 1999). Despite this high prevalence, there are only limited medical tools for treatment of FSD or its subtypes, and more research in this field is highly necessary in order to develop approved therapeutic agents.

Experimental model:
Comparative studies have evidenced a lot of homologies between animal and human sexual behavior (Pfaus, 1996). In women, arousal may be separated into genital arousal (potency) and psychological arousal (libido, motivation). A similar distinction also exists in female rats, in which sexual activities are divided into proceptivity and receptivity (Beach, 1976). Receptivity refers to lordosis (a stereotyped reflex in response to a male mount and allowing male intromissions and ejaculations) but there is no counterpart for lordosis in women. In contrast, proceptive behaviors are highly analogous to women sexual desire and psychological arousal. There is also a considerable degree of similarity between rats and humans in neuroanatomical, neuroendocrine and neurochemical regulation of sexual activity (Pfaus et al., 2003). For these reasons, study of proceptive behaviors is likely relevant to preclinically investigate the potential of compounds for the treatment of FSD in women, in particular HSDD or FSAD.
Some tests have been developed to measure sexual motivation outside the context of copulation :

- **sexual incentive motivation test**

Other reliable and standardized behavioral tests allow the quantification of female sexual responses and the assessment of the effects of pharmacological agents on these responses. These tests can be performed in different experimental devices, choosen according to the goal of the study:

- **unilevel chamber**
- **unilevel pacing chamber**
- **bilevel chamber**

Pelvipharm will gladly help select the most appropriate test to meet its clients need.

Related Pelvipharm bibliography:

Gelez, H et al. **J Sex Med** (2010) : 7(suppl 4):151 (ISSM 2010)
Gelez, H et al. **J Sex Med** (2010) : 7(suppl 3):118 (ISSWSH 2010)

Links to applicable experimental skills:

- **Administration routes / regimen**
- **Plasma / urine / tissue collection**
- **In vivo experiments conscious animals**
  * Urine collection - Metabolic cages
  * Behavioral science
  * Female sexual desire
- **In vivo experiments anesthetized animals**
  * Female sexual response elicited by electrical neural stimulation
- **Behavioural sciences**
  * sexual incentive motivation test
  * unilevel chamber
  * unilevel pacing chamber
  * bilevel chamber
- **Biochemistry (Plasma / Urine / Tissue)**
  * Spectrophotometric assays
  * Protein expression and activity
- **Histology**
  * Histomorphology
  * Histomorphometry
  * Oxydative fuorescence
- **Immunohistology / Confocal microscopy**
  * Protein expression – immunohistochemistry / immunofluorescence
  * Confocal microscopy
- **Neuro-anatomical tracing techniques**