



# Mouse Superovulation Protocol

## Introduction

Superovulation in female mice is a technique where administration of gonadotropins is used to artificially induce ovulation of large numbers of oocytes at a predictable time. This results in an increased number of fertilized embryos available to harvest for use in applications such as transgenic mouse production and mouse strain rederivation and/or cryopreservation.

## Gonadotropin Hormones

The superovulation protocol requires the use of the following gonadotropin hormones:

### Pregnant Mare Serum Gonadotropin (PMSG):

*Used to mimic the oocyte maturation effect of the endogenous follicle-stimulating hormone (FSH).*

Ilex Life Sciences, Cat. No. A22721K (1000 IU)

Ilex Life Sciences, Cat. No. A22725K (5000 IU)

<https://ilexlife.com/products/pregnant-mare-serum-gonadotropin-pmsg>

### Human Chorionic Gonadotropin (hCG):

*Used to mimic the ovulation induction effect of luteinizing hormone (LH).*

Ilex Life Sciences, Cat. No. A225005 (5 mg)

Ilex Life Sciences, Cat. No. A225010 (10 mg)

<https://ilexlife.com/products/human-chorionic-gonadotropin-hcg>

## Protocol

Preliminary dose response injections are recommended to determine the optimum hormone dose and mouse age for each mouse strain. In most cases, best results are achieved with mice ages 21-35 days (12-14 gram body weight) receiving a 2.0-5.0 IU dose of each gonadotropin.

**Day 1:** Intraperitoneally (IP) inject female mice with PMSG between 1:00 PM and 4:00 PM. The female mice should be housed five or fewer in each cage.

**Day 3:** After 42-50 hours have passed since PMSG injection, female mice should receive an IP injection of hCG. Immediately following hCG injection, the female mouse should be mated with the stud male of at least 8 weeks of age. The male mice should be caged individually and one female should be placed with each male.

**Day 4:** Approximately 12 hours following hCG injection, ovulation will occur and the oocytes may then be fertilized.

## Acknowledgement

This protocol has been adapted from The Jackson Laboratory's Reproductive Services Superovulation Technique (July 01, 1998).

## Disclaimer

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