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ENVIGO

Research Models  
and Services

Teklad Custom Diets

# Tamoxifen diets for inducible Cre-LoxP systems

## Diets with tamoxifen activate CreER

Tamoxifen-containing diets should be considered an option if you are using a model with Cre under the control of a mutated estrogen receptor.

Envigo makes a variety of tamoxifen-containing diets customized to meet your research needs. We also make a variety of doxycycline-containing diets for Tet regulated systems.

If you have any questions, don't hesitate to contact a nutritionist at [askanutritionist@envigo.com](mailto:askanutritionist@envigo.com).

## Key points from literature

- + Length of treatment varies from 1-2 weeks (1, 2, 5, 6, 7, 8) to 1-2 months (3, 4, 8)
- + Pure tamoxifen (1, 5, 8) and tamoxifen citrate (1, 2, 3, 4, 6, 7) are both effective
- + Usual tamoxifen doses are ~40-80 mg per kg body weight per day
- + Typical inclusion for pure tamoxifen is 250 mg (8) or 500 mg (1, 5) and for tamoxifen citrate is 400 mg per kg diet (1, 2, 3, 4, 6, 7)
- + Initial weight loss of 10% is reported (1, 2, 4, 7, 8), associated with reduced food intake (2)
- + Subsequent recovery of body weight after returning to regular diet may be compromised by gene inactivation (2, 7)

## References

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## Teklad now stocks tamoxifen and tamoxifen citrate

Tamoxifen is added to the diet as a tamoxifen-sucrose mixture. Users are encouraged to use the stocked supply. However, Envigo will continue to work with customer prepared mixes. If you choose this option, please consult a nutritionist for additional information about preparing and sending the mixture.

Tamoxifen mg per kg diet	Daily tamoxifen mg per kg body weight <sup>1</sup>	Diet code	
		Natural	Colored (red)
250	40	TD.130855	TD.130856
500	80	TD.130857	TD.130858
400 citrate <sup>2</sup>	40	TD.130859	TD.130860 <sup>3</sup>

<sup>1</sup> Assumes 20-25 g body weight and 3-4 g intake

<sup>2</sup> Tamoxifen citrate is 66% tamoxifen

<sup>3</sup> Referred to as TAM400/CreER in Europe (TD.55125)

These example diets all have tamoxifen premixed with ~5% sucrose as a palatability enhancer; however, feed aversion may still occur.

Teklad Global 2016 (base diet in these examples) is only one of several minimal phytoestrogen diets Teklad produces. Consult a nutritionist about use of other base diets.

### Key planning information

- Minimum order quantity is 3 kg, sufficient for feeding ~20 mice for one month
- Store diet refrigerated and plan to use within six months
- Typical lead time is two weeks (four weeks if irradiated)
- Irradiation (20 - 50 kGy) is optional, and must be requested at time of order

### Mice need time to adjust. Plan for:

- Initial reduction in food intake and weight loss
- Daily observation of animal tolerance - consult your IACUC for monitoring metrics
- Intervene when necessary (see below)

### Other researchers have the following advice if intake seems to be a problem:

- Determine if a lower dose is effective for your model by conducting a tamoxifen dose feeding trial.
- Gradually acclimate mice by mixing tamoxifen-containing pellets with regular feed pellets.
- Wet the food, then place in a dish inside the cage (requires daily replacement).
- Feed tamoxifen diet on weekdays, regular diet on weekends.
- Alternate weeks (two weeks on tamoxifen diet, one week off) for longer treatments.

### Safe handling of tamoxifen diets

- Tamoxifen is a selective estrogen receptor modulator (SERM) meaning it can repress actions of estrogen or have pro-estrogen effects.
- Usual dose for therapeutic effects in humans is 20 mg/day. Tamoxifen diets for rodents typically contain ~1-2 mg/pellet.
- Accidental tamoxifen exposure can be minimized by using typical lab precautions of lab coat, gloves, and mask when handling the diet.
- Your chemical safety department should be contacted for additional institution specific guidelines for handling and disposal of tamoxifen containing diets.

## Contact us

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