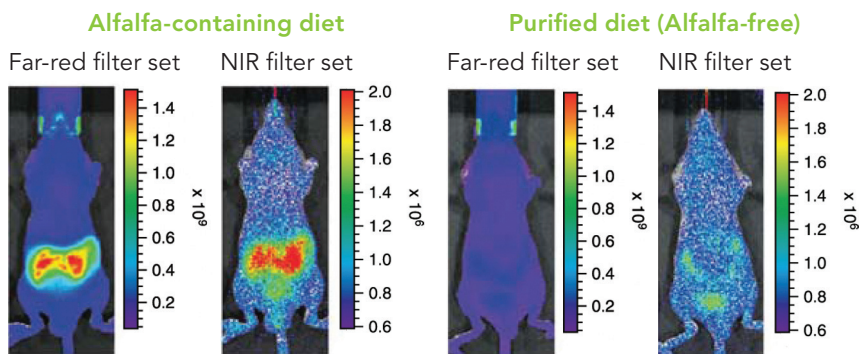


Diet impacts fluorescent imaging

Diets without alfalfa meal greatly improve imaging clarity

Optical imaging studies in live rodents with fluorescent reporters are used to monitor and assess disease in many therapeutic areas. Dietary ingredients such as alfalfa meal result in autofluorescence in the abdominal region due to the chlorophyll, thereby creating background signal.

Alfalfa-free diets minimize autofluorescence and improve imaging clarity



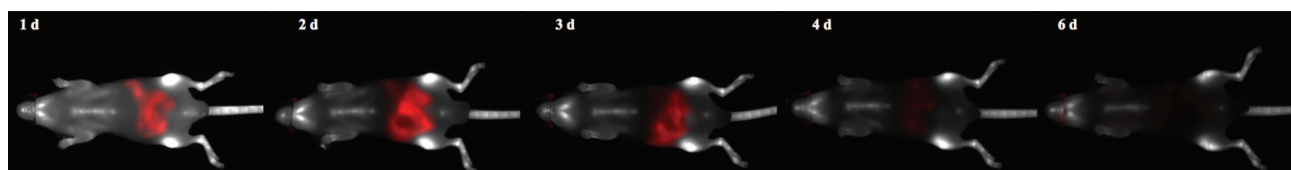
Fluorescent images for the ventral side of a control nu/nu male mouse, showing autofluorescence for the far-red and near-infrared (NIR) filter sets. The images were taken after the animal was fed for a week with alfalfa-containing rodent diet (on left) and purified rodent diet (on right). Units are photons/se/CM2/sr; x10⁹ for far-red and x10⁶ for NIR.

Alfalfa-free diet options

Teklad Global Rodent Diets			Purified diets
2014	Maintenance	Pelleted	Most purified diets will be suitable. Commonly used ones are versions of AIN diets, such as: + TD.94045, AIN-93G + TD.97184, AIN-93G, suitable for irradiation
2016	Growth and maintenance	Pelleted	
2018	General purpose, breeder	Pelleted	
2019	Breeder diet, higher fat	Extruded	
2020X	General purpose, breeder	Extruded	

These diets are available in certified, autoclavable and irradiated form.

Optimal signal clearance may require washout of up to four days

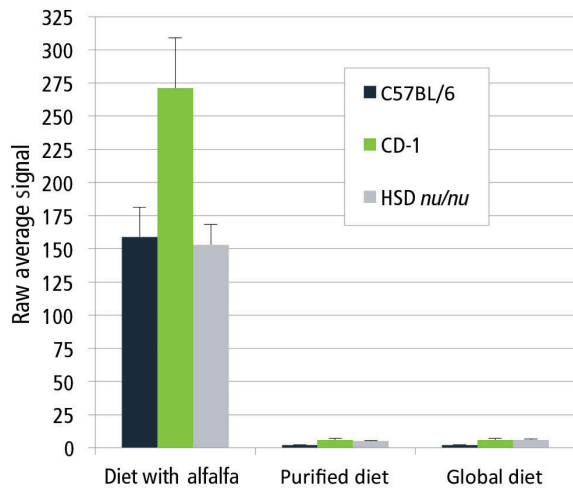


Signal clearance from a nude mouse is visualized with the Pearl™ Imager (LI-COR Biosciences) in a series of images captured over several days. A mouse on Teklad 7012, exhibiting a high level of autofluorescence in the 700 nm channel (red), was switched to a purified diet on day one.

Courtesy of LI-COR

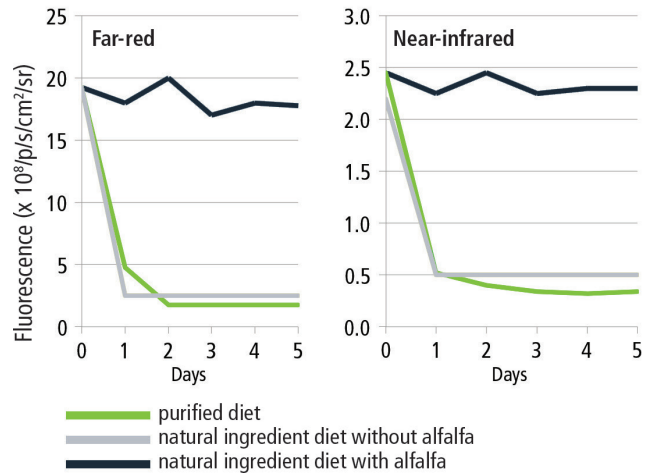
Global and purified diets both reduce abdominal autofluorescence

Signal clearance improves to a similar extent



Adapted from MacLaurin, et al., 2006

Reduction happens within days



Adapted from Innoue, et al., 2008

Advantages

Teklad Global Rodent Diets

- Greatly reduce autofluorescence
- Eliminate disruption in feeding regimen mid study
- Less expensive than purified diets
- Readily available globally

Soybean meal-free options available.



Pelleted (2016)



Extruded (2020SX)

Purified diets

- Minimize autofluorescence; important when there is a low signal level



Purified (AIN-93G)

Selected imaging references

1. Troy T, Jekic-McMullen D, Sambucetti L, Rice B. 2004. Quantitative comparison of the sensitivity of detection of fluorescent and bioluminescent reporters in animal models. *Mol Imaging* 3:9-23.
2. Inoue Y, Izawa K, Kiryu S, Tojo A, Ohtomo K. 2008. Diet and abdominal autofluorescence detected by in vivo fluorescence imaging of living mice. *Mol Imaging* 7:21-27.
3. MacLaurin SA, Bouchard M, Dwyer P, Levenson R, Mansfield J, Krucker T. 2006. Reduction of Skin and Food Autofluorescence in Different Mouse Strains through Diet Changes. Poster, Society for Molecular Imaging, Annual Meeting, Hawaii.
4. Bhaumik S, DePuy J, Klimash J. 2007. Strategies to minimize background autofluorescence in live mice during noninvasive fluorescence optical imaging. *Lab Anim (NY)* 36:40-43.
5. LI-COR Biosciences. In Vivo Animal Imaging Diet Considerations. 2008. Application Note for Pearl Imager.

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RMS-0716-US-02-SS-147