Silantes
Stable Isotope Labeled Biomolecules

In vivo Mouse-Proteomics Diet for SILAC-Mouse-Lys(6)

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SILAC-Mouse Diet:

A New Proteomics Product

SILAC-mouse is a new *in vivo* proteomics approach (Ong et Mann 2006) permitting quantitative determination of protein patterns of mouse organs. The concept is similar to that of the well established SILAC-approach (Ong et al. 2002) aiming at the quantification of proteins in cell cultures.

The figure on the next page shows the workflow scheme of SILAC-mouse:

In order to determine the protein status of mouse (A) with respect to mouse (B), tissues of mice (A) and (B), both of which were fed a diet containing only unlabelled ($^{12}C_6$) lysine, are each mixed with tissue of mouse (R) which was fed a diet in which $^{12}C_6$ lysine has been replaced by $^{13}C_6$-lysine.

Silantes, in cooperation with the group of Prof. Matthias Mann, Max-Planck-Institute of Biochemistry, has developed a kit for performing the SILAC-mouse approach (Krüger et al.2008).

The **SILAC-Mouse-Lys(6) kit** consists of two feeds:

- SILAC-mouse-$^{12}C_6$-Lys(0):
  A feed (from Harlan) which is composed of a conventional amino acid-based diet containing $^{12}C_6$-lysine (light feed). This diet is used for feeding mice (A) and (B);

- SILAC-mouse-$^{13}C_6$-Lys(6):
  The same feed as above but $^{12}C_6$-lysine is replaced by $^{13}C_6$-lysine (heavy feed). This diet is used for feeding the reference mouse (R).

Alternatively, the SILAC-Mouse- Lys(8) kit is available in which $^{13}C_6$-lysine is replaced by $^{13}C_6$,$^{15}N_2$-lysine yielding an 8Da molecular weight shift of the proteolytically cleaved peptides.

Literatur:

Krueger M., Moser M., Ussar S., Thievessen I., Luber Ch.A, Forner F., Schmidt S., Zanivan S., Faessler R. and Mann M.(2008). SILAC Mouse for Quantitative Proteomics Uncovers Kindlin-3 as an Essential Factor for Red Blood Cell Function, Cell 134, 353–364.

Ong, S.E., and Mann, M. (2006). A practical recipe for stable isotope labelling by amino acids in cell culture (SILAC). Nat. Protoc. 1, 2650–2660.

Ong, S.E., Blagoev, B., Kratchmarova, I., Kristensen, D.B., Steen, H., Pandey A., and Mann, M. (2002). Stable isotope labeling by amino acids in cell culture, SILAC, as a simple and accurate approach to expression proteomics, Mol.Cell. Proteomics 1, 376–386.

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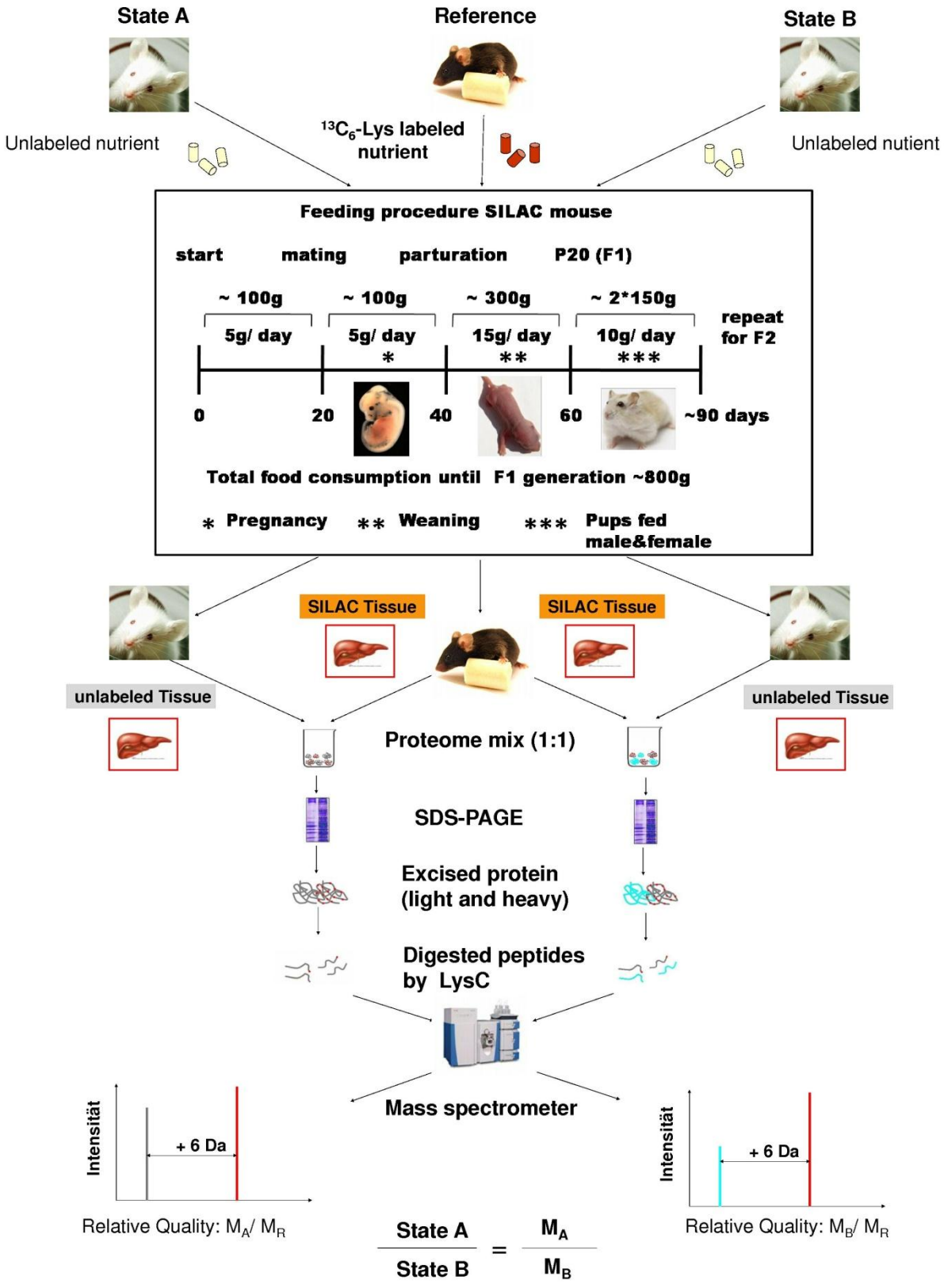
Proteomic Workflow



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