**Supporting information**

A)

B)

**Figure S1. Modelling the kinetics of 15N after a 15N diet switch in ruminants depends on whether a mono-exponential model is sufficient or that a bi-exponential model is required to adequately fit the data.** A) Mono-exponential model (as in plasma proteins), where δ15N kinetics are adequately fitted according to δ15N(t) = δ15N∞ + (δ15N0 - δ15N∞)×*e*-k×t and a single slope is noted when the logarithm of the reaction progress variable (1-F = (δ15N(t)- δ15N∞)/(δ15N0 - δ15N∞)) is plotted versus time. B) Bi-exponential model (as in urine), where δ15N kinetics are adequately fitted according to δ15N(t) = δ15N∞ + (δ15N0 - δ15N∞)×[p×*e*-k1×t + (1-p)×*e*-k2×t] and two different slopes are noted when the logarithm of the reaction progress variables are plotted versus time. The two different slopes represent the fractional turnover rates during the first, fast (k1) and second, slow (k2) phases.