

File Name: Supplementary Data 1

Description: Summary results of phylogenetic generalised least squares regressions between mean plasma glucose concentrations and diet across vertebrates. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. When the independent variable is categorical, we report the type of association (positive or negative) of the majority of between-group comparisons. In the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. We performed an FDR correction including all analyses of this file.

File Name: Supplementary Data 2

Description: Summary results of phylogenetic generalised least squares regressions between mean plasma glucose concentrations and neoplasia prevalence across vertebrates. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. For multivariate analyses, in the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, in the 4th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable D, in the 5th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable E, and in the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. We performed an FDR correction including all analyses of this file.

File Name: Supplementary Data 3

Description: Summary results of phylogenetic generalised least squares regressions between mean plasma glucose concentrations and neoplasia prevalence within mammals. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. For multivariate analyses, in the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, in the 4th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable D, in the 5th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable E, and in the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. We performed an FDR correction including all analyses of this file.

File Name: Supplementary Data 4

Description: Summary results of phylogenetic generalised least squares regressions between mean plasma glucose concentrations and neoplasia prevalence within birds. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. For multivariate analyses, in the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, and in the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. We performed an FDR correction including all analyses of this file, except the last multivariate regression. The last multivariate regression had less than 10 species to conduct a powerful analysis.

File Name: Supplementary Data 5

Description: Summary results of phylogenetic generalised least squares regressions between mean plasma glucose concentrations and neoplasia prevalence within reptiles. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. For multivariate analyses, in the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, and in the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. We performed an FDR correction including all the analyses of this file, except the last multivariate regression. The last multivariate regression had less than 10 species to conduct a powerful analysis.

File Name: Supplementary Data 6

Description: Summary statistics of the best model fit in multivariate and univariate comparisons where malignancy or neoplasia prevalence were the dependent variables and mean plasma glucose concentration was always an independent variable in those comparisons, while the combinations of the other independent variables (body mass, gestation/incubation length, maximum lifespan, trophic level, birds versus mammals versus ectotherms, and/or domestication) in the multivariate analyses varied. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. In the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, in the 4th *P*-value

[and coefficient] column we report the *P*-value and coefficient of variable D, in the 5th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable E, in the 6th *P*-value [and coefficient] column we report the *P*-value and coefficient of variable F, and in the *F*-statistics column we report the *F*-statistics of the independent variable A.

File Name: Supplementary Data 7

Description: Summary results of phylogenetic generalised least squares regressions between neoplasia prevalence and diet across vertebrates. High values of lambda indicate that the signals can be mainly explained by common ancestry among species. In the “Type of Association” column we report whether there is a positive or negative association between the independent variable A and the dependent variable. When the independent variable is categorical, we report the type of association (positive or negative) of the majority of between-group comparisons. If 50% of the between-group comparisons have a positive association and 50% of the between-group comparisons have a negative association, we report both signs. For multivariate analyses, in the 1st *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable A, in the 2nd *P*-value [and coefficient] column we report the *P*-value and coefficient of the independent variable B, in the 3rd *P*-value [and coefficient] column we report the *P*-value and coefficient of independent variable C, and in the *F*-statistics column we report the *F*-statistics of the independent variable A. We mark *P*-values that passed the False Discovery Rate (FDR) correction in column “*P*-value of variable A” with an asterisk (*). NA: Not applicable. Rows without a *P*-value for the independent variable A, had less than 10 species to conduct a powerful analysis. Based on our hypotheses and the different kinds of diet data, we performed a separate FDR correction for the trophic level analyses, diet type analyses, and percentage of diet analyses.

File Name: Supplementary Data 8

Description: Species names and sources from which their primary diet was found.

File Name: Supplementary Data 9

Description: The long version of each citation from Supplementary Data 8.