

LEGENDS TO SUPPLEMENTARY FIGURES

**Fig S1:** Signal distribution plots (A) and Principal component analysis (PCA, B) of all intensity values achieved in the study (three samples for each egg type AM, RE and E0).

**Fig S2:** Enriched GO biological process terms in amictic eggs (AM), resting eggs (RE) and resting eggs before hatching (E0).

**Fig S3:** Enriched KEGG pathways in AM (blue), RE (red) and E0 (green). For each pathway, the nominator in the bar labels shows the number of proteins displayed in each egg type and the denominator shows the total number of proteins (KOs) in the translated reference transcriptome that were associated with the pathway.

**Fig S4:** Enriched GO biological processes of the proteins with significant differences in their abundance in the comparisons of AM vs. RE (blue) and AM vs. E0 (red).

**Fig S5:** A heat-map showing the abundance level of proteins in Fatty acid degradation pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. Two vertical bars to the left of the heat map indicate whether the abundance of a protein significantly differed in the comparison of AM vs RE (left) or AM vs E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p-value<0.05, FC>3). An orange box indicates that the protein was identified in one egg type but not in the other. A white box indicates there were no statistically significant differences in the abundance of the protein, in the compared groups.

**Fig S6:** A KEGG map displaying the proteins in association with Valine, leucine and isoleucine degradation pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S7:** A KEGG map displaying the proteins in association with the Glycolysis/Gluconeogenesis pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show

proteins that were significantly more abundant in AM vs RE. Yellow boxes show the proteins that were detected only in AM eggs. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S8:** A heat-map showing the abundance level of proteins in the Glycolysis/Gluconeogenesis pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. The two vertical bars to the left of the heat map indicate whether the protein showed differentially abundance in AM vs. RE (left) and in AM vs. E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p. 0.05, FC > 3). An orange box indicates that the protein was abundant in one egg type and not the other. A white box indicates that the protein did not display differentially abundance.

**Fig S9:** A heat-map showing the abundance level of proteins in the Citrate cycle (TCA) pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. The two vertical bars to the left of the heat map indicate whether the protein showed differentially abundance in AM vs. RE (left) and in AM vs. E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p. 0.05, FC > 3). An orange box indicates that the protein was abundant in one egg type and not the other. A white box indicates that the protein did not display differentially abundance.

**Fig S10:** A KEGG map displaying the proteins in association with the Pyruvate metabolism pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Yellow boxes show the proteins that were detected only in AM eggs. Boxes in blue show proteins with significantly higher abundance in RE vs AM. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S11:** A heat-map showing the abundance level of proteins in the Pyruvate metabolism pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. The two vertical bars to the left of the heat map indicate whether the protein

## Proteomes of dormant and non-dormant embryos

showed differential abundance in AM vs. RE (left) and in AM vs. E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p. 0.05, FC > 3). An orange box indicates that the protein was abundant in one egg type and not the other. A white box indicates that the protein did not display differential abundance.

**Fig S12:** A KEGG map displaying the proteins in association with the Cell cycle pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Yellow boxes show the proteins that were detected only in AM eggs. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S13:** A KEGG map displaying the proteins in association with the Spliceosome pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Yellow boxes show the proteins that were detected only in AM eggs. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S14:** A KEGG map displaying the proteins in association with the mRNA surveillance pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Yellow boxes show the proteins that were detected only in AM eggs. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S15:** A KEGG map displaying the proteins in association with the Proteasome pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Boxes in blue show proteins with significantly higher abundance in RE vs AM. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

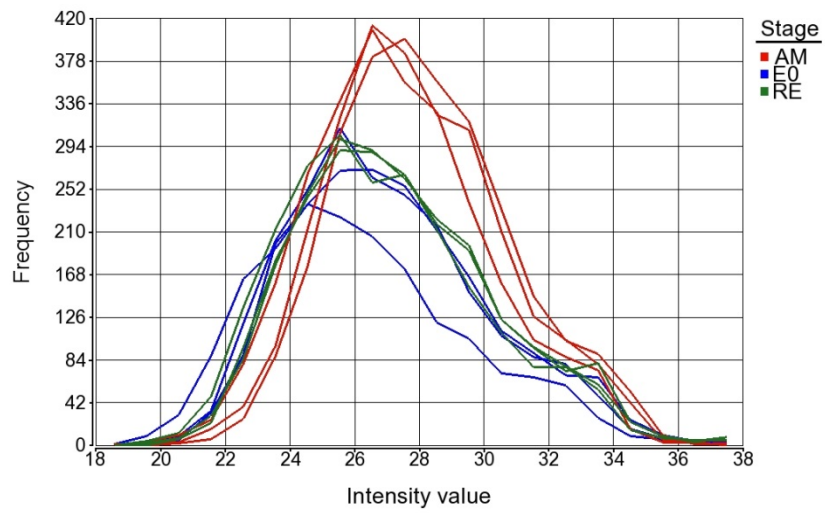
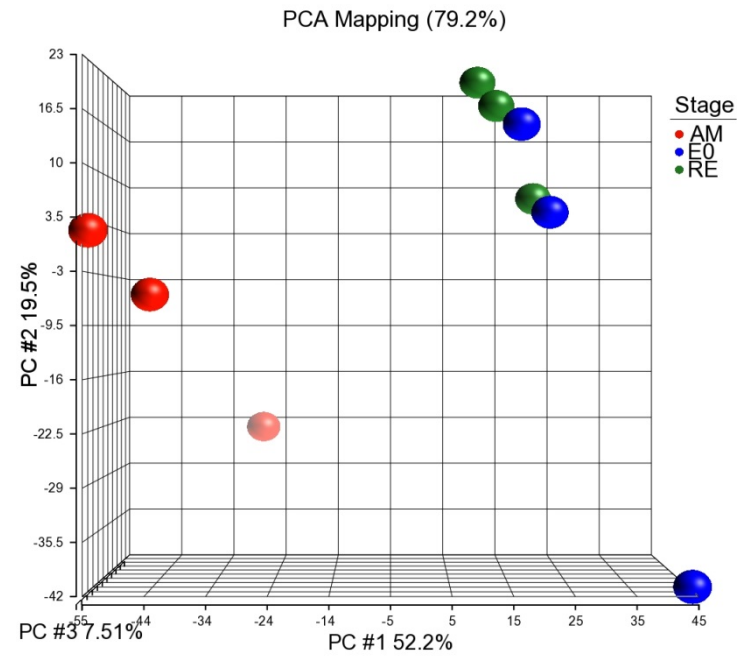
## Proteomes of dormant and non-dormant embryos

**Fig S16:** A heat-map showing the abundance level of proteins in the Oxidative phosphorylation pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. The two vertical bars to the left of the heat map indicate whether the protein showed differentially abundance in AM vs. RE (left) and in AM vs. E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p. 0.05, FC > 3). An orange box indicates that the protein was abundant in one egg type and not the other. A white box indicates that the protein did not display differentially abundance.

**Fig S17:** A KEGG map displaying the proteins in association with the Pentose phosphate pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Boxes in blue show proteins with significantly higher abundance in RE vs AM. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**Fig S18:** A heat-map showing the abundance level of proteins in the Pentose phosphate pathway after hierarchical clustering. Expand the figure x175 to view the text. White cells in the heat map denote missing values. The two vertical bars to the left of the heat map indicate whether the protein showed differentially abundance in AM vs. RE (left) and in AM vs. E0 (right). A red box indicates statistical significance in the 1-Way ANOVA test (FDR p. 0.05, FC > 3). An orange box indicates that the protein was abundant in one egg type and not the other. A white box indicates that the protein did not display differentially abundance.

**Fig S19:** A KEGG map displaying the proteins in association with the Protein processing in endoplasmic reticulum pathway. Boxes in grey show the proteins that were identified in rotifer eggs. Boxes in red show proteins that were significantly more abundant in AM vs RE. Boxes in blue show proteins with significantly higher abundance in RE vs AM. Statistically significant differences were indicated by 1-Way ANOVA test (FDR p-value 0.05, FC>3).

**A****B****Fig S1**

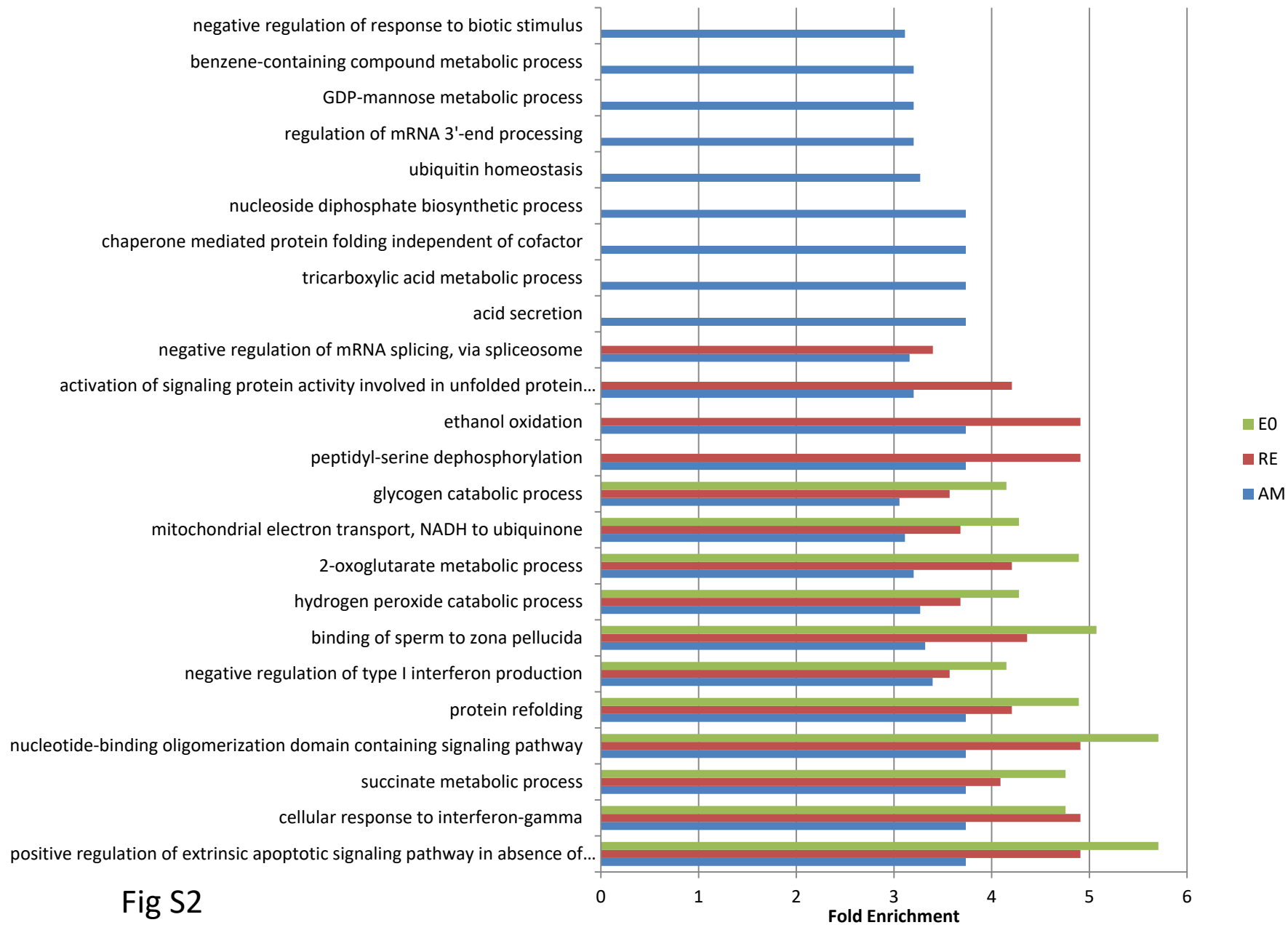


Fig S2

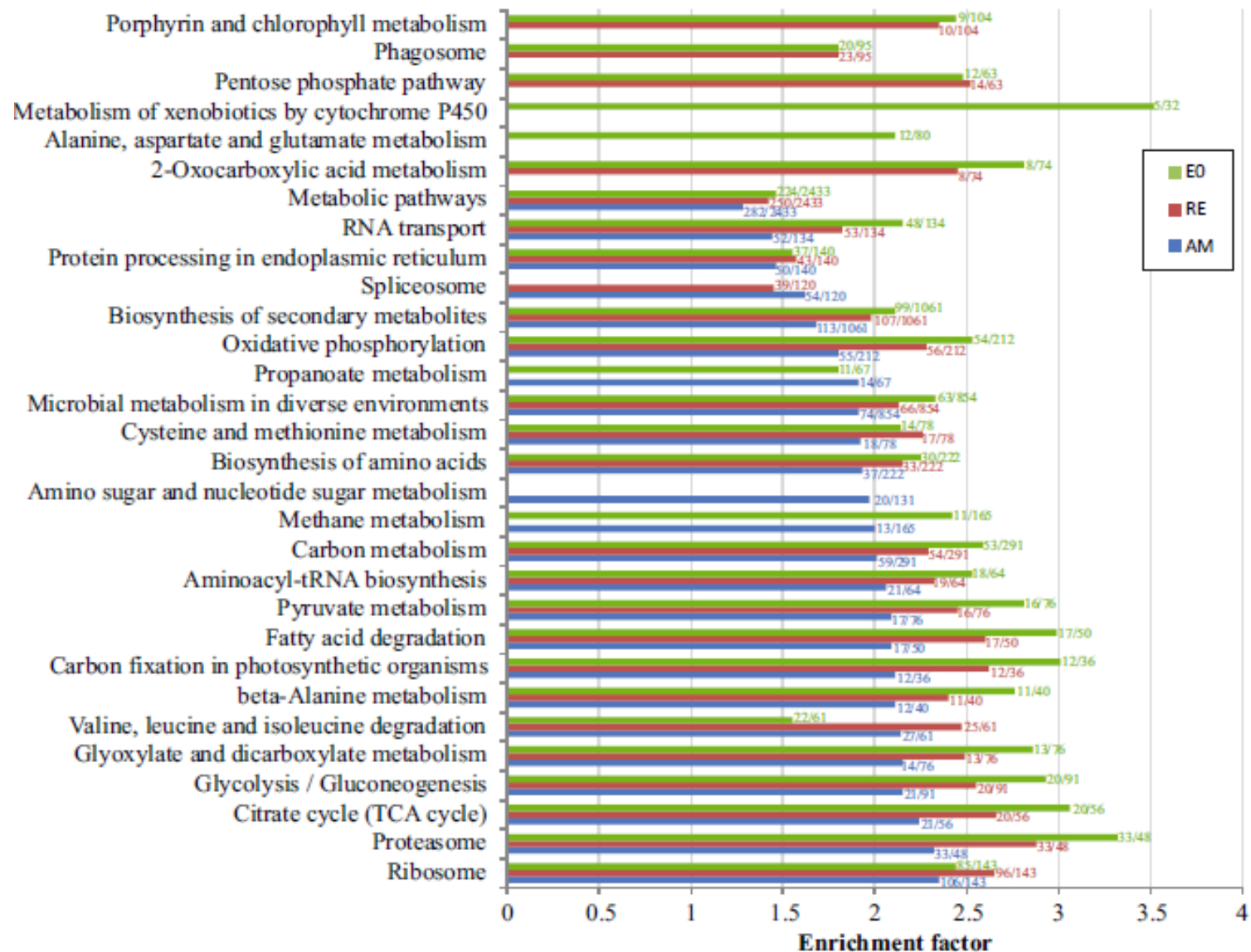


Fig S3

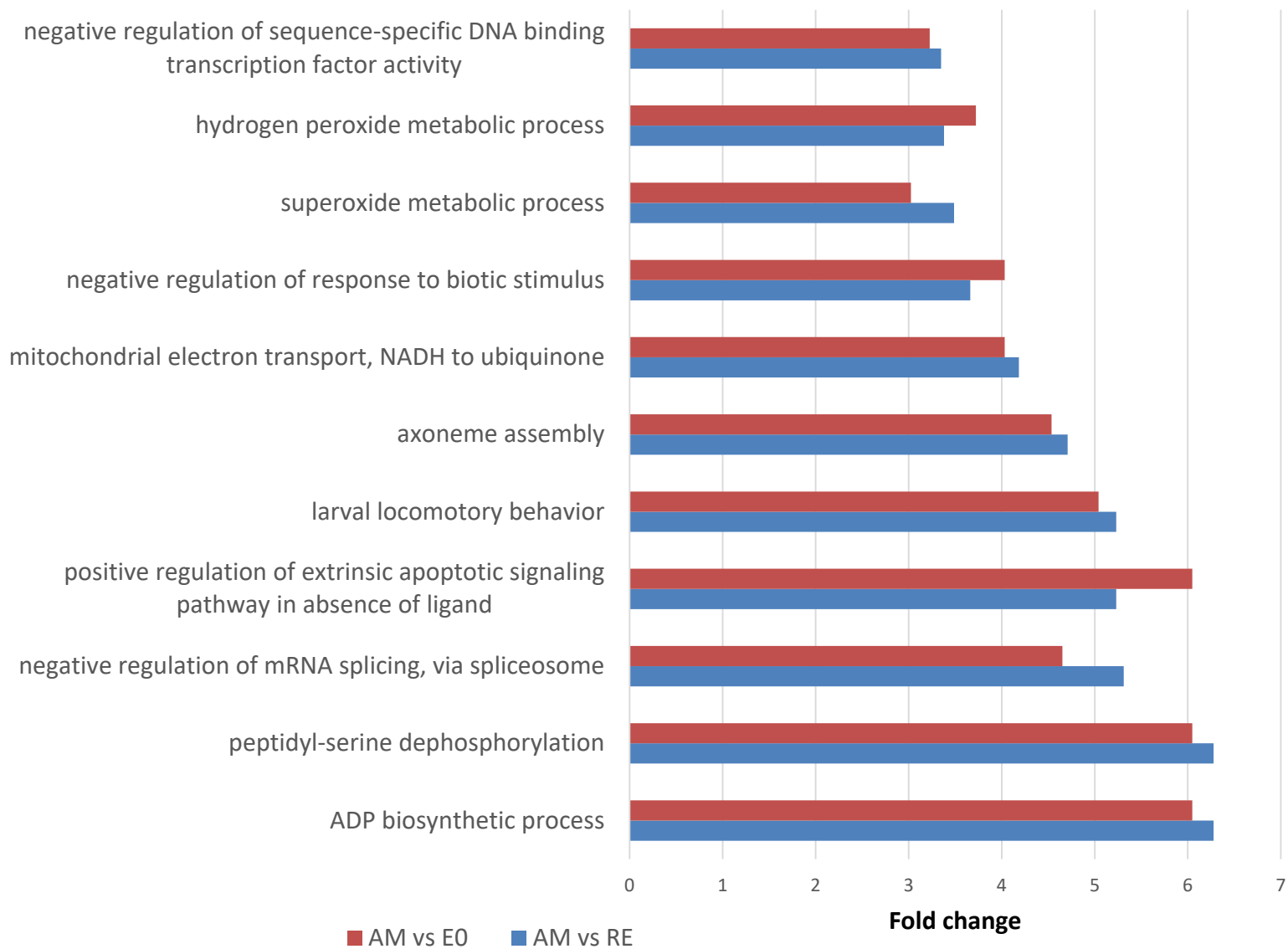


Fig S4





VALINE, LEUCINE AND ISOLEUCINE DEGRADATION

AM>RE  
 AM<RE  
 Only in AM  
 Only in RE  
 Grey - present

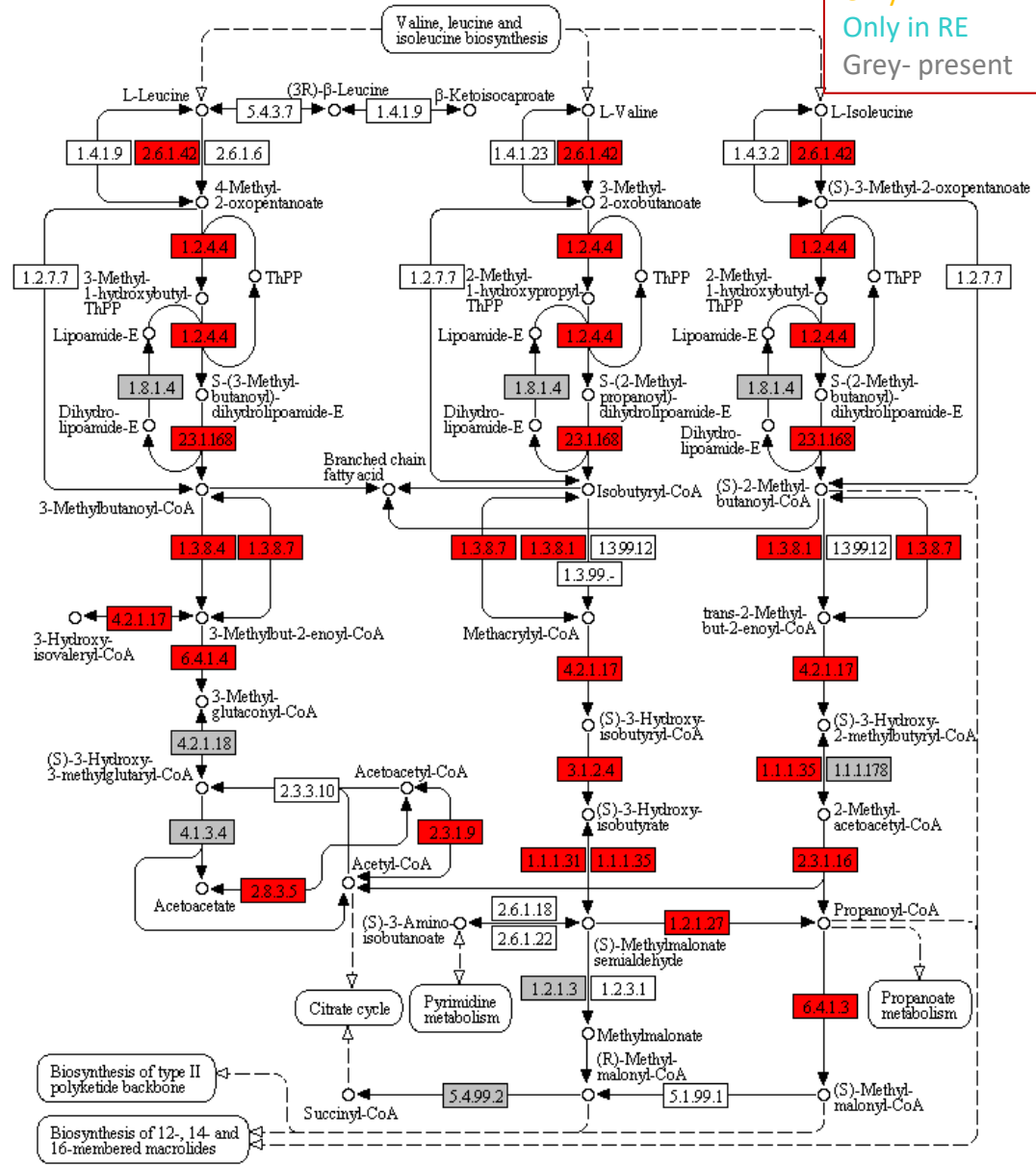
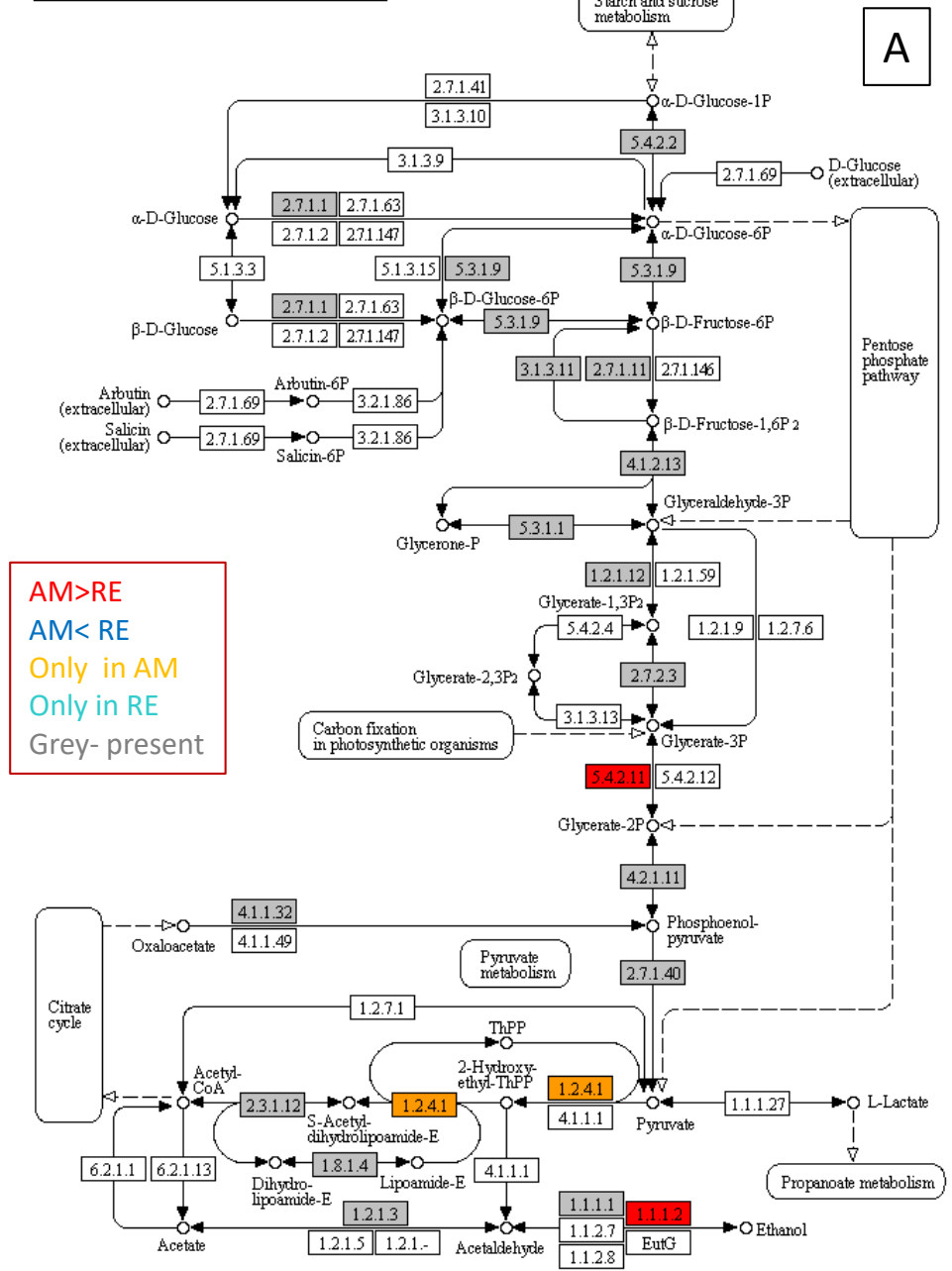


Fig S6

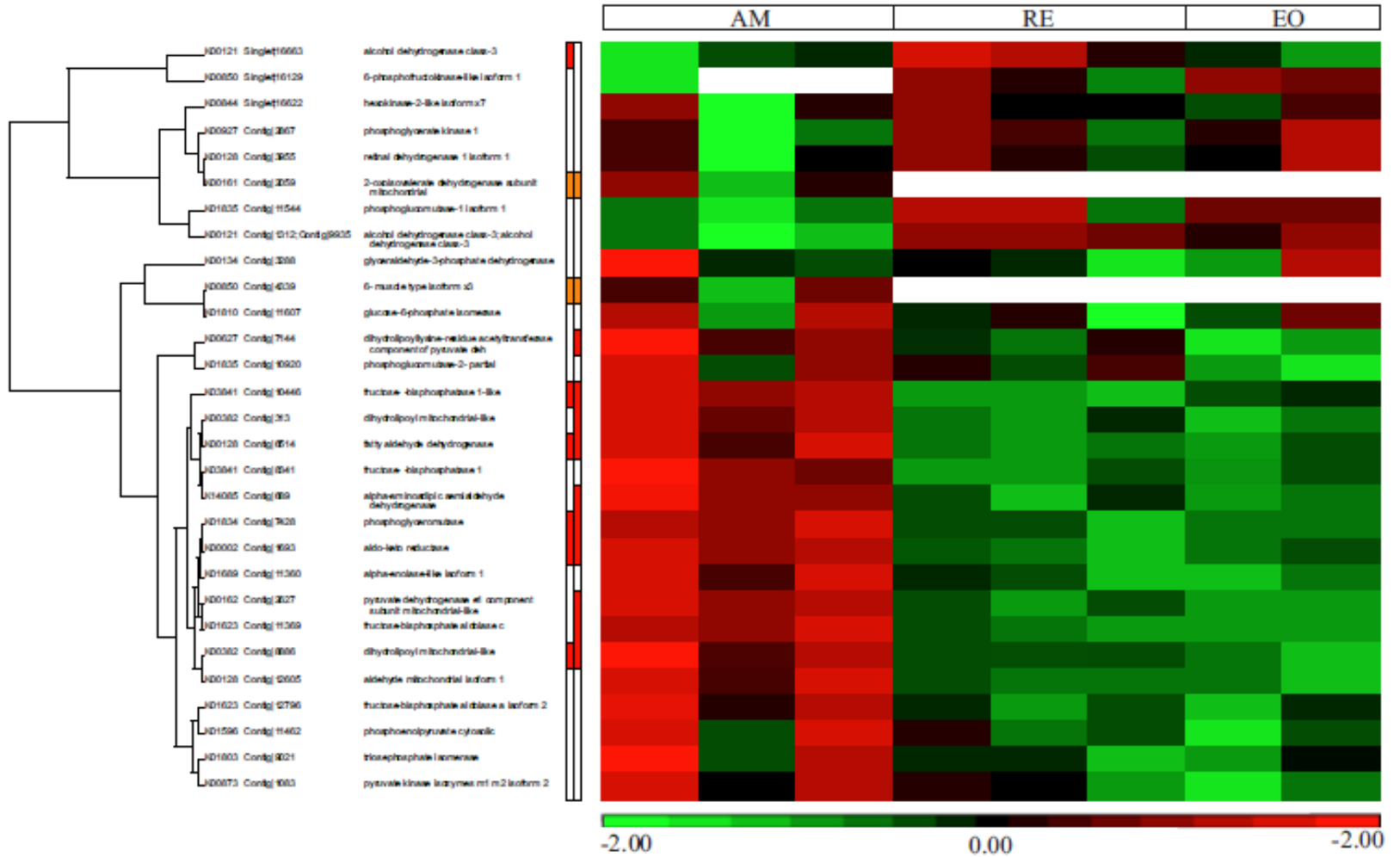
GLYCOLYSIS / GLUCONEOGENESIS



A

Fig S7

## Glycolysis gluconeogenesis



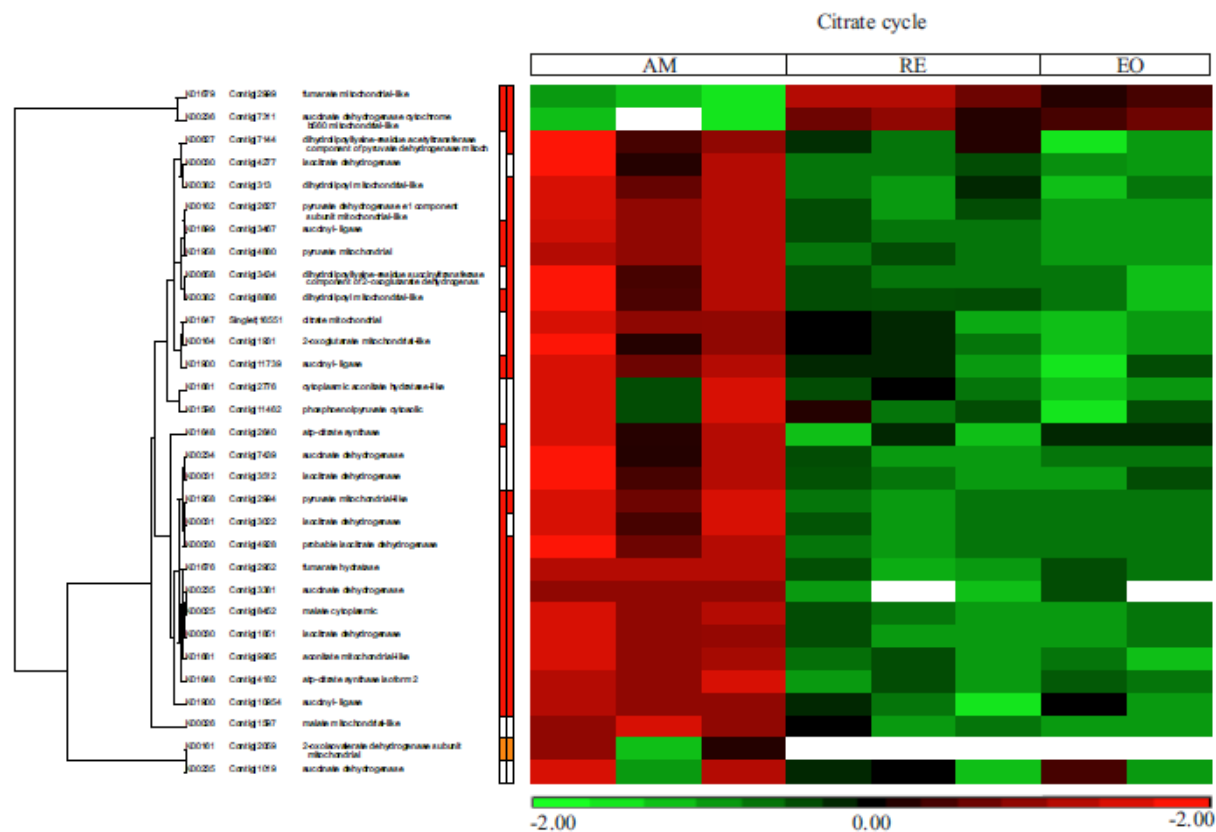


Fig S9

AM>RE; AM< RE; Only in AM; Only in RE; Grey- present

PYRUVATE METABOLISM

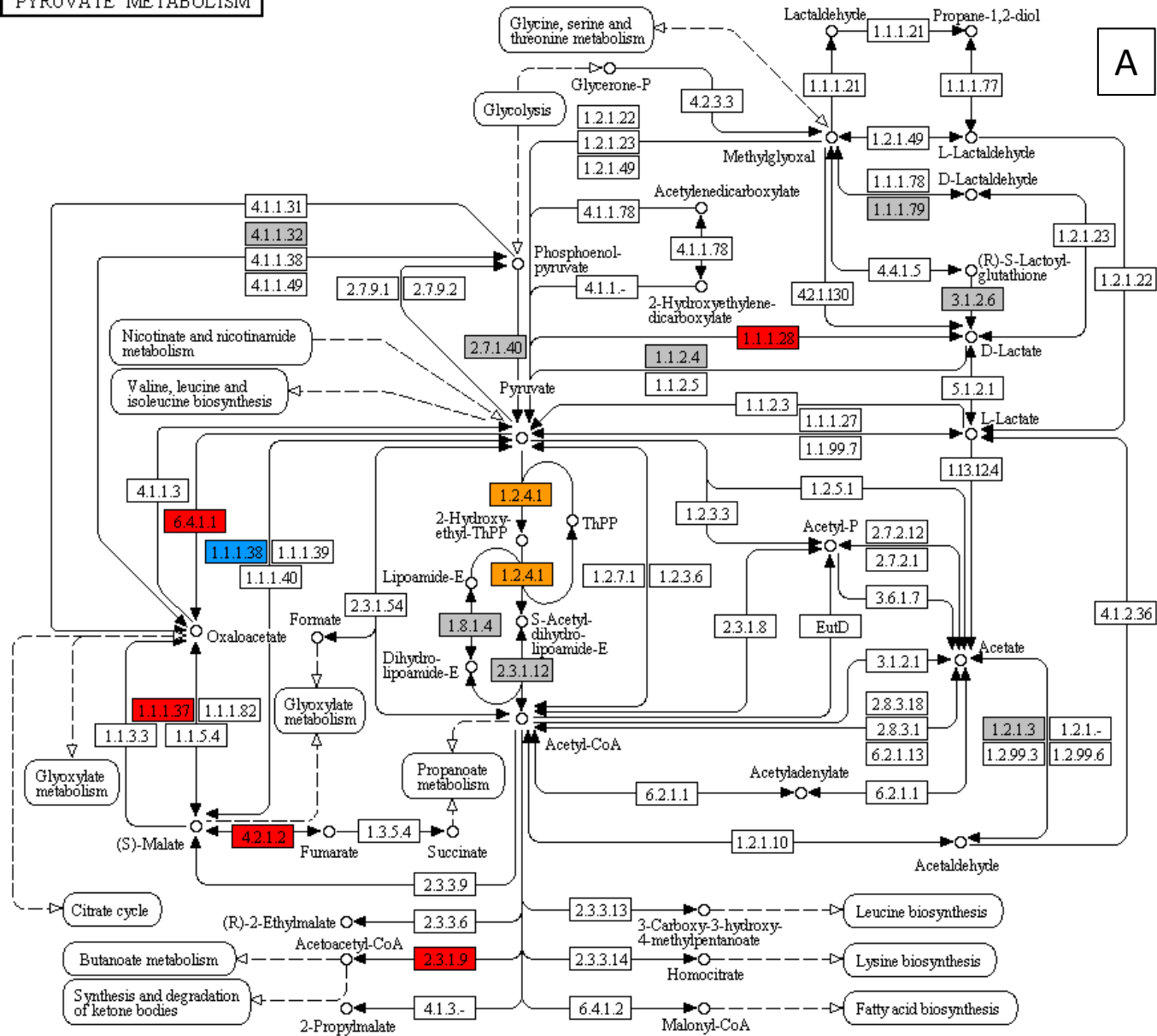


Fig S10

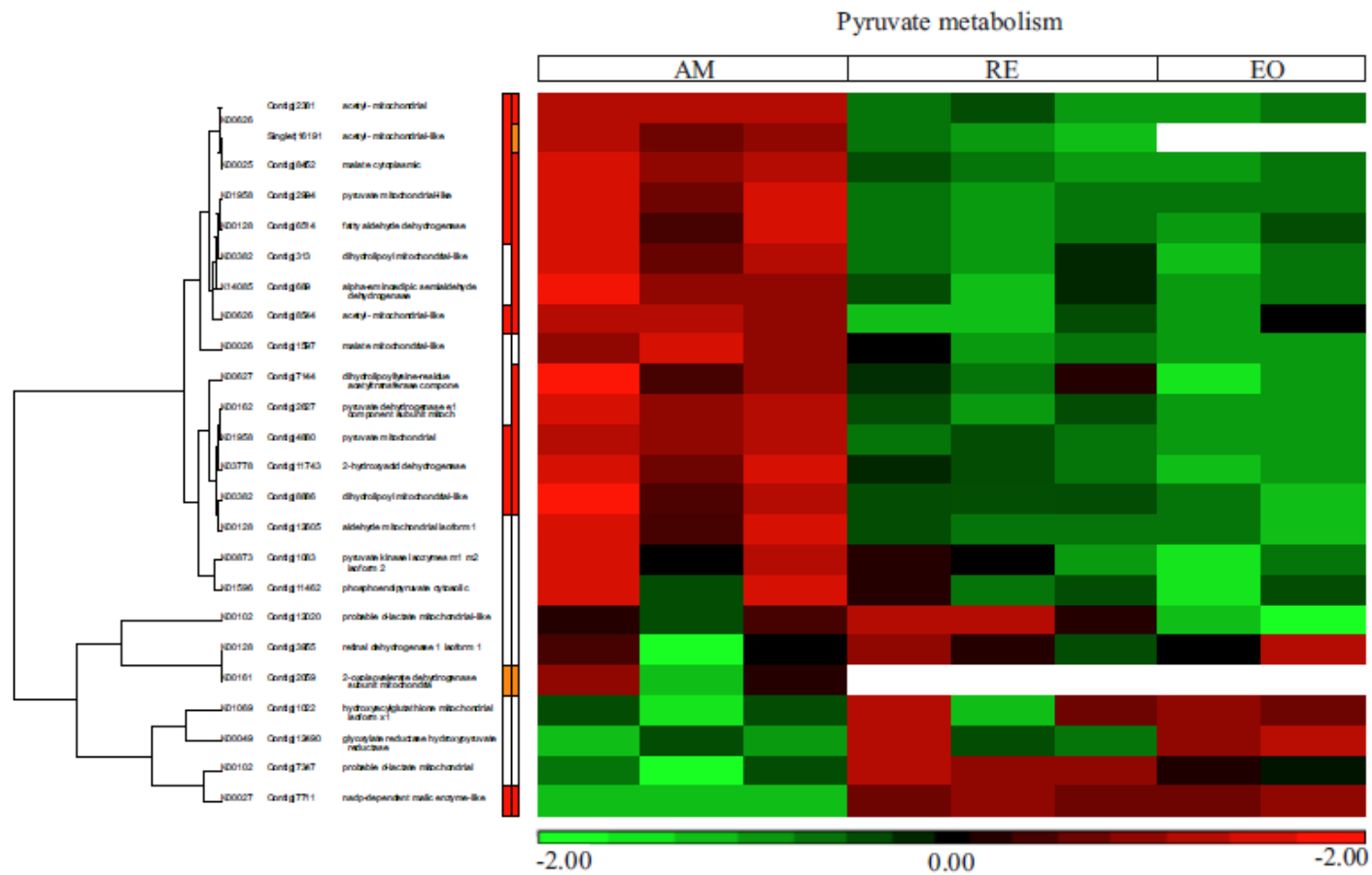
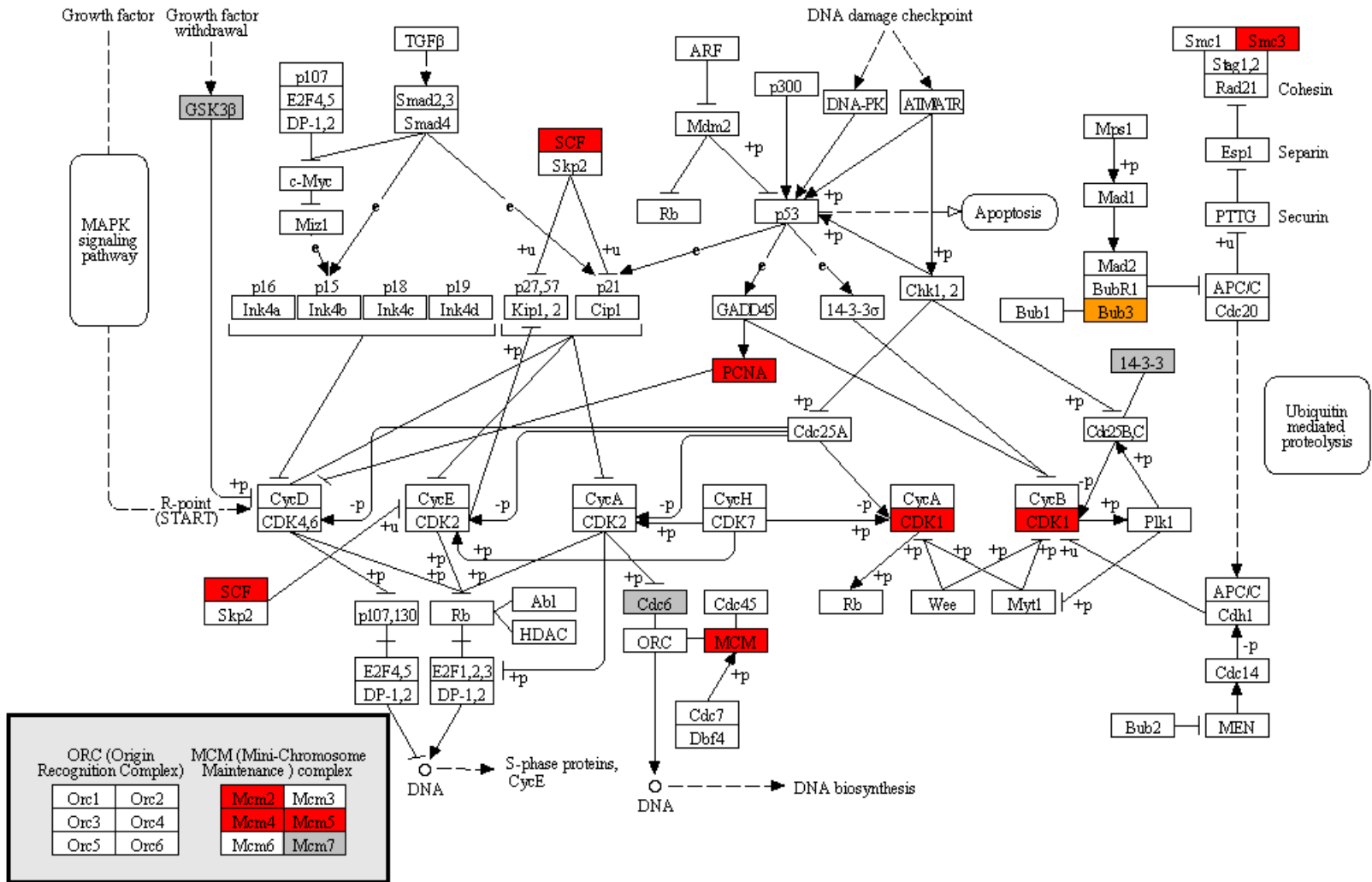


Fig S11

**CELL CYCLE**

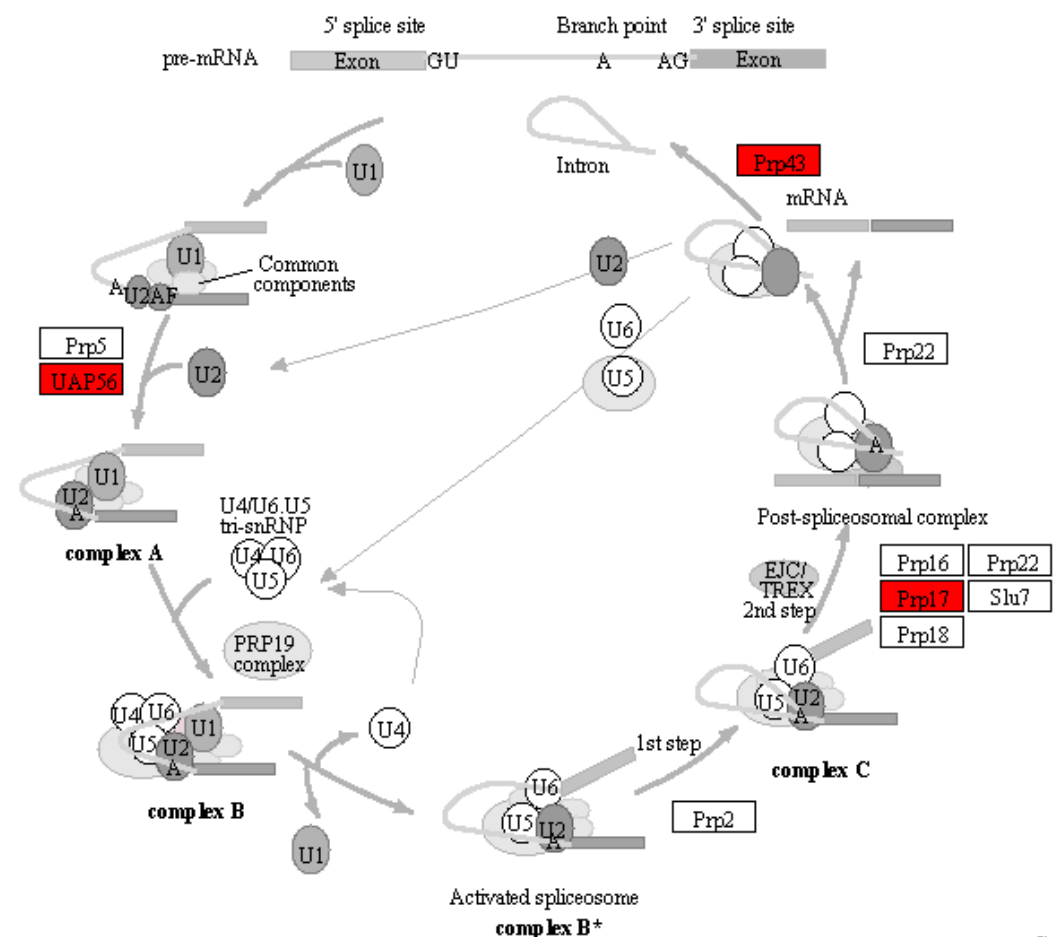


**Fig S12**



AM>RE; AM< RE; Only in AM; Only in RE; Grey- present

SPLICEOSOME



Spliceosome components

U1	U2	U4/U6	U5
U1snRNA	U2snRNA	U4snRNA	U5snRNA
Sm	Sm	U6snRNA	Sm
U1-70K	U2A'	Lsm	Snu114
U1A	U2B''	Sm	Brr2
U1C	SF3a	Prp3	Prp6
U1 related	SF3b	Prp4	Prp8
FBP11	U2 related	CypH	Prp8BP
S164	U2AF	Prp31	Prp28
p68	PUF60	Snu13	DIB1
CA150	SPF30	U4/U6/U5 tri-snRNP associated	
	SPF45	SnRNP27	
	CHERP	Sad1	
	SR140	Snu66	
	Prp43	Snu23	
		Prp38	
Prp19 complex	Prp19 related	EJC/TREX	Common components
Prp19	SKIP	ACINUS	CBP80
CDC5	Syf	eIFA3	hnRNPs
SPF27	Isv1	Y14	SR
PRL1	PPIL1	magoh	
AD002	CypE	UAP56	
CTNNB1	CCDC12	THOC	
HSP73	RBM22		
Complex B specific	G10		
NPW38	AQR		
NPW38EF			

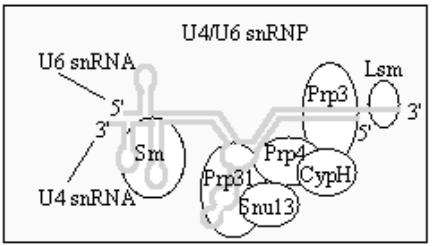
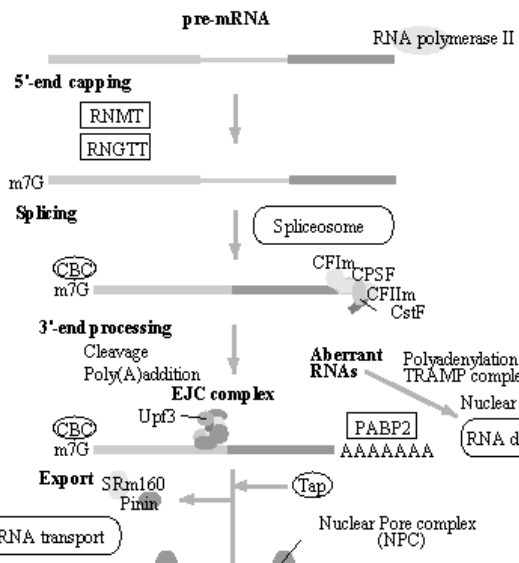


Fig S13

**AM>RE; AM< RE; Only in AM; Only in RE; Grey - present**

**mRNA SURVEILLANCE PATHWAY**

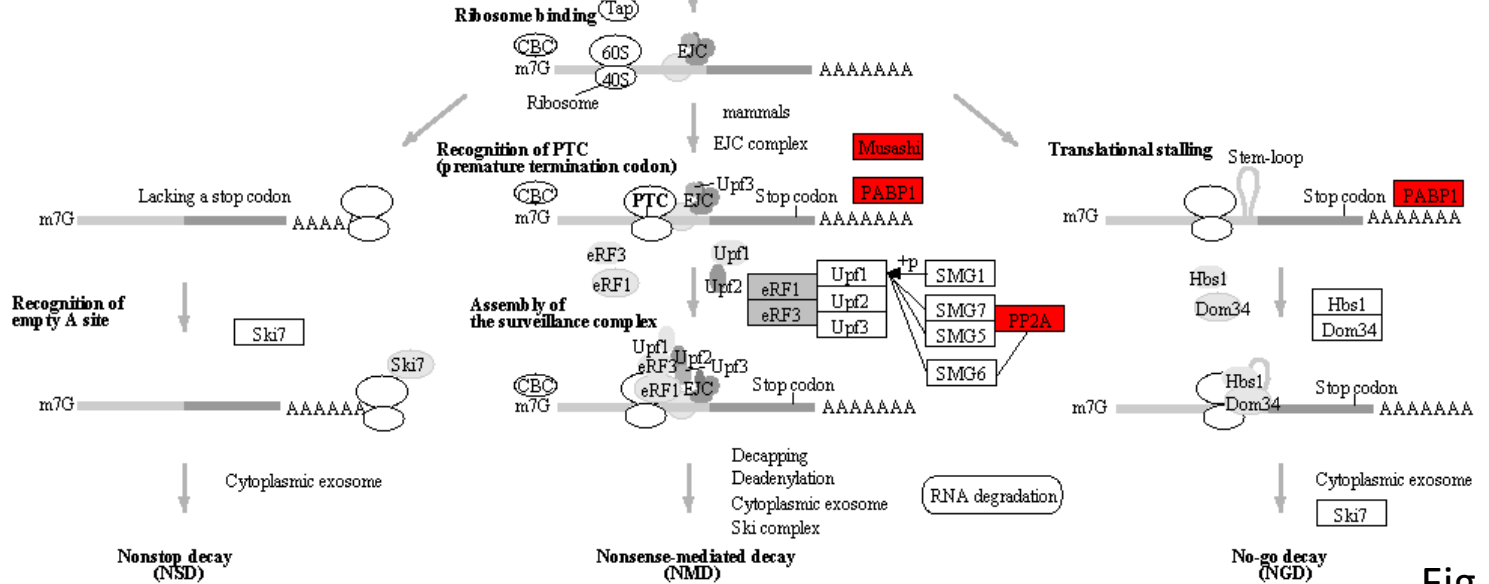
- Cap binding complex (CBC)**
- CBP80
  - CBP20
- Exon-junction complex (EJC)**
- |       |        |       |        |
|-------|--------|-------|--------|
| Upf3  | MLN51  | SAP18 | ACIN1  |
| Y14   | EIF4A3 | Pirin | RNPS1  |
| MAGOH | EIF4A3 | Pirin | RefAly |
- Transiently interacting factors**
- |     |       |        |
|-----|-------|--------|
| Tap | UAP56 | SRm160 |
| p15 | PYM   |        |



- pre-mRNA 3'-end processing machinery**
- Cleavage factor Im (CFIm) complex**
- CPSF5
  - CPSF6/7
  - PAP
- Cleavage factor IIIm (CFIIIm) complex**
- Clp1
  - Pcf11
- Cleavage and polyadenylation specificity factor (CPSF) complex (Saccharomyces cerevisiae)**
- |       |       |       |      |       |
|-------|-------|-------|------|-------|
| CPSF1 | CPSF2 | CPSF3 | MPE1 | PFS2  |
| Fip1  | CPSF4 |       | SWD2 | REF2  |
|       |       |       | GLC7 | SSU72 |
- Cleavage stimulation factor (CSTF) complex**
- CSTF1
  - CSTF2
  - CSTF3
  - SYMPK

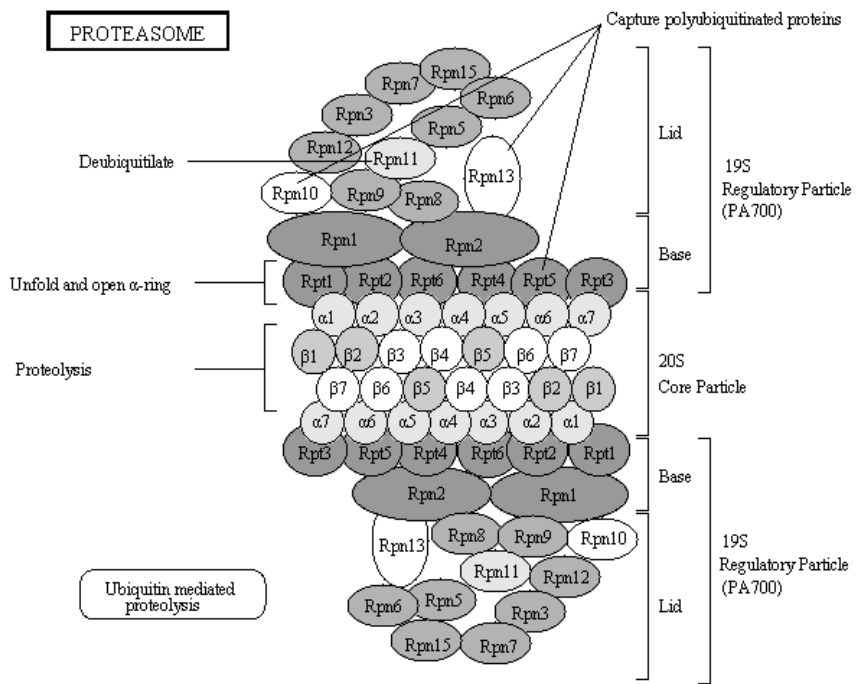
**Nucleus**

**Cytoplasm**



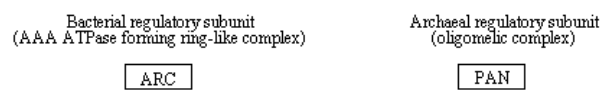
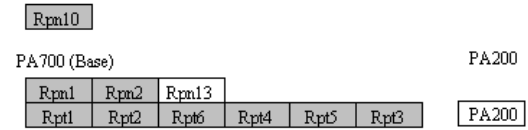
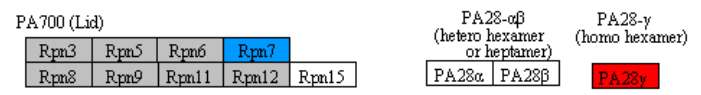
**Fig S14**

PROTEASOME

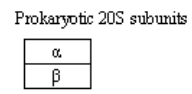
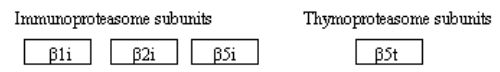
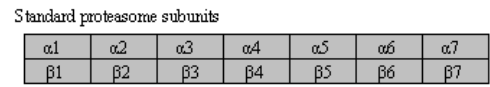


PA700-20S-PA700 (26S proteasome)

Regulatory Particles



Core Particles (20S proteasome)



Formation of immunoproteasomes

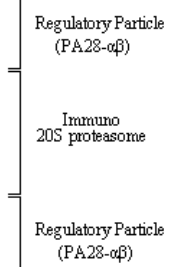
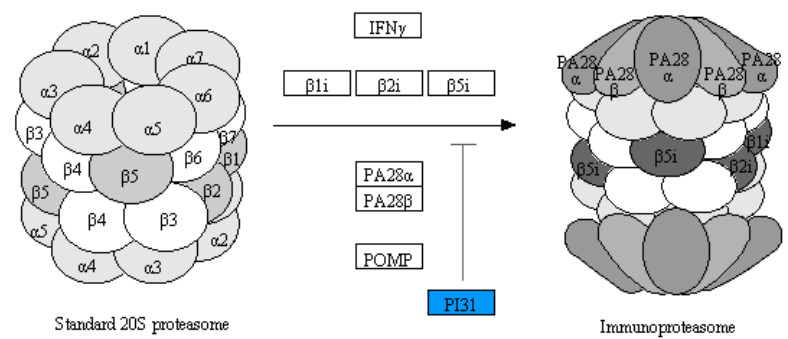


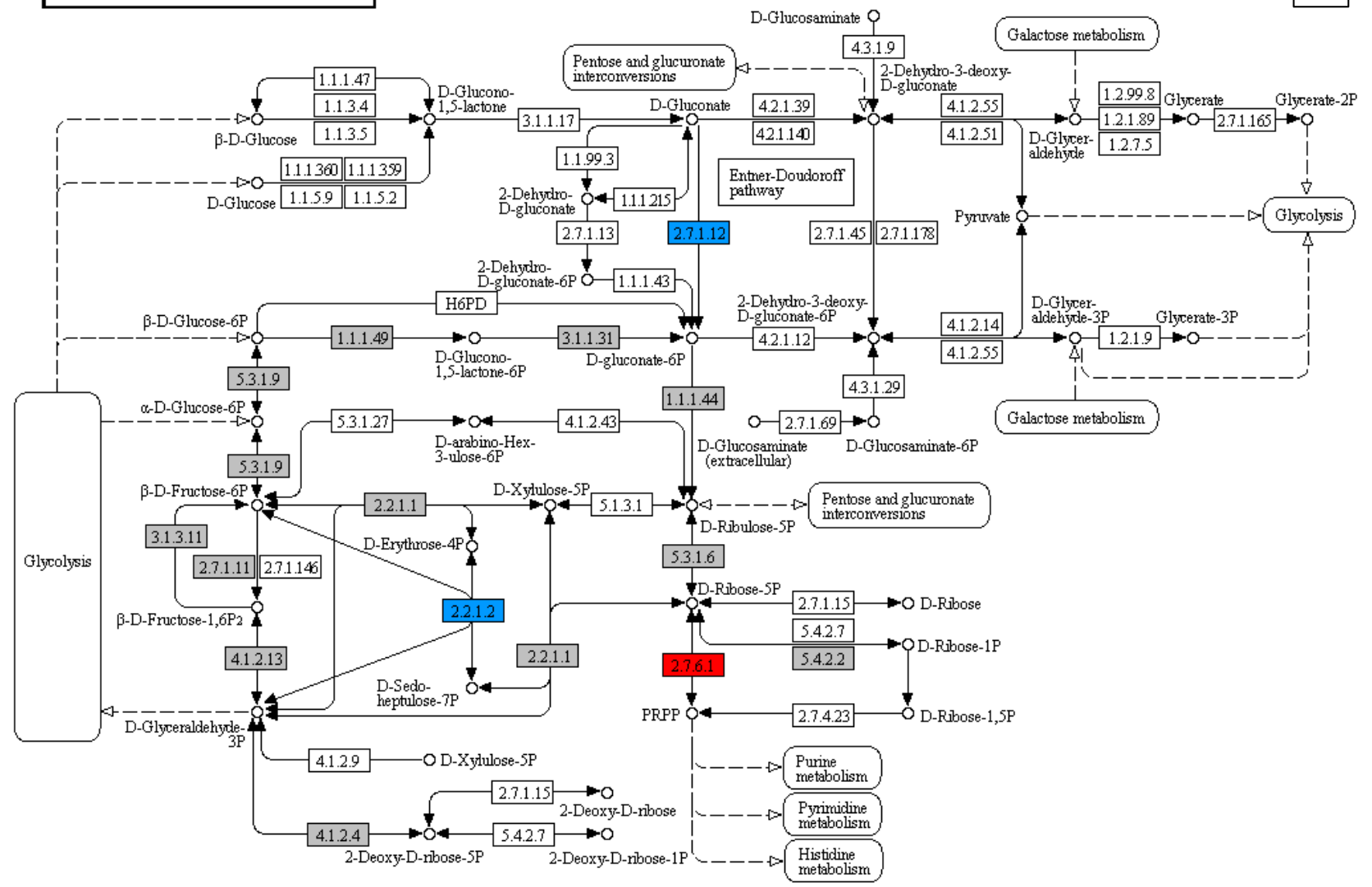
Fig S15



A

AM>RE; AM<RE; Only in AM; Only in RE; Grey- present

PENTOSE PHOSPHATE PATHWAY



00030 5/7/14  
(c) Kanehisa Laboratories

Fig S17



AM>RE; AM<RE; Only in AM; Only in RE; Grey-present

PROTEIN PROCESSING IN ENDOPLASMIC RETICULUM

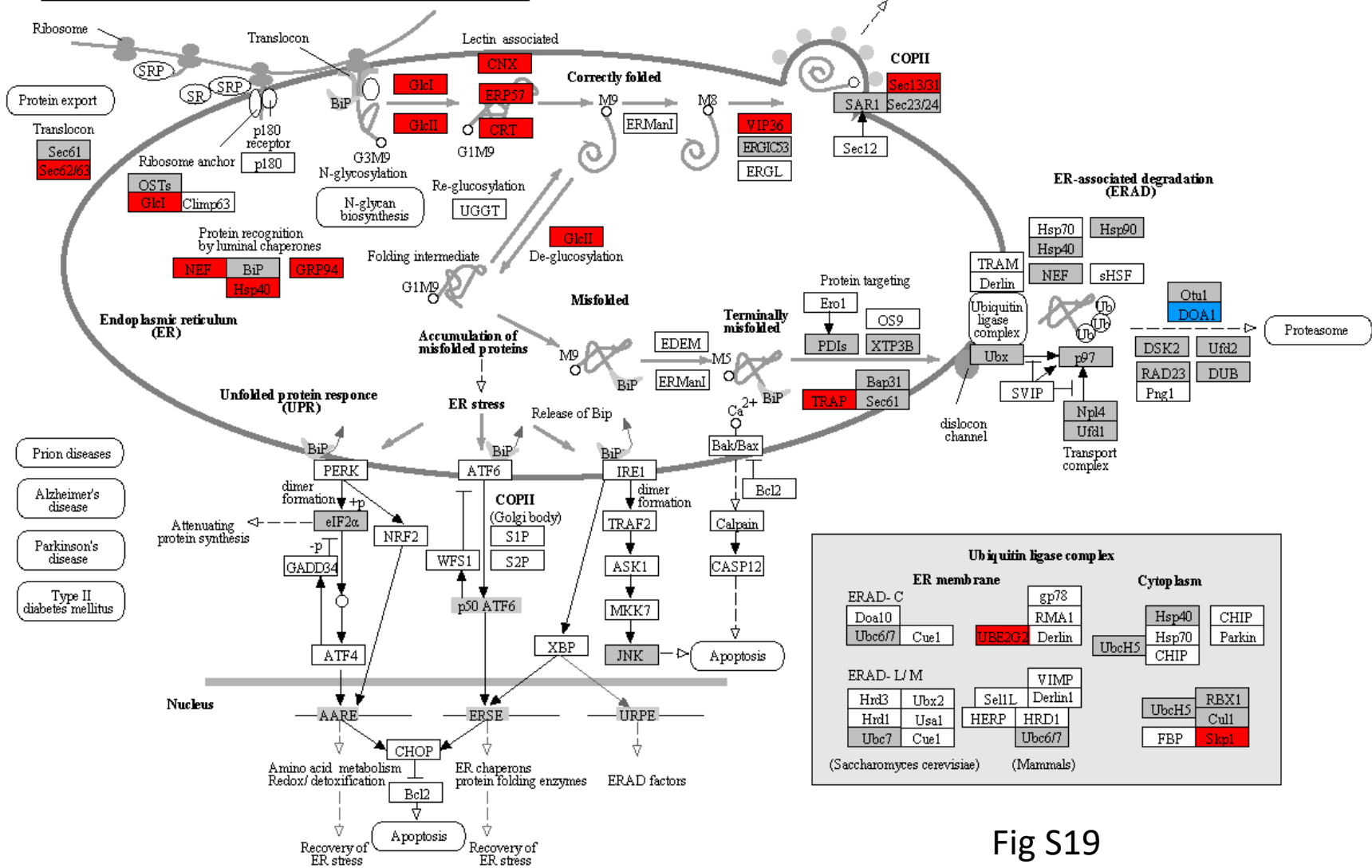


Fig S19