Figure S1 Pathway of lycopene biosynthesis and degradation in tomato.

Orange highlight indicate enzyme-coding genes having selected from both 2-C-methyl-D-erythritol 4-phosphate (MEP) and carotenoid synthesis (CBP)

MEP pathway. **Componets**: ***DMAPP***, dimethylallyl diphosphate, C5; ***G3P*****,** D-Glyceraldehyde 3-phosphate; ***GGPP***, Geranylgeranyl diphosphate, C20; ***HMBPP*****,** 4-Hydroxy-3-methylbut-2-enyl-diphosphate**;** ***IPP***, Isopentenyl diphosphate, C5; ***MEP*****,** 2-*C*-Methyl-D-erythritol 4-phosphate**;** ***Pyruvate***, 1-Deoxy-D-xylulose 5-phosphate**.** **Enzymes/genes** : ***CMK***, 4-(Cytidine 5-diphospho)-2-*C*-methyl-D-erythritol kinase; ***DXS***, 1-Deoxy-D-xylulose 5-phosphate synthase; ***DXR***, 1-Deoxy-D-xylulose 5-phosphate reductoisomerase; ***GGPPS***, Geranylgeranyl diphosphate synthase; ***HDR***, 4-Hydroxy-3-methylbut-2-enyl diphosphate reductase; ***HDS***, 4-Hydroxy-3-methylbut-2-enyl-diphosphate synthase; ***IDI***, Isopentenyl diphosphate *Δ*-isomerase; ***MCT***, 2-*C*-methyl-D-erythritol 4-phosphate cytidylyltransferase; ***MDS***, 2-*C*-methyl-D-erythritol 2,4-cyclodiphosphate synthase.

CBP pathway, **Enzymes/genes: CRTISO**, carotenoid isomerase; **LCYB/CYCB**, lycopene β-cyclase; **LCYE**, lycopene ε-cyclase; **PDS**, phytoene desaturase; **PSY**, phytoene synthase; **ZDS**, ζ-carotene desaturase; **ZISO**, ζ-carotene isomerase.