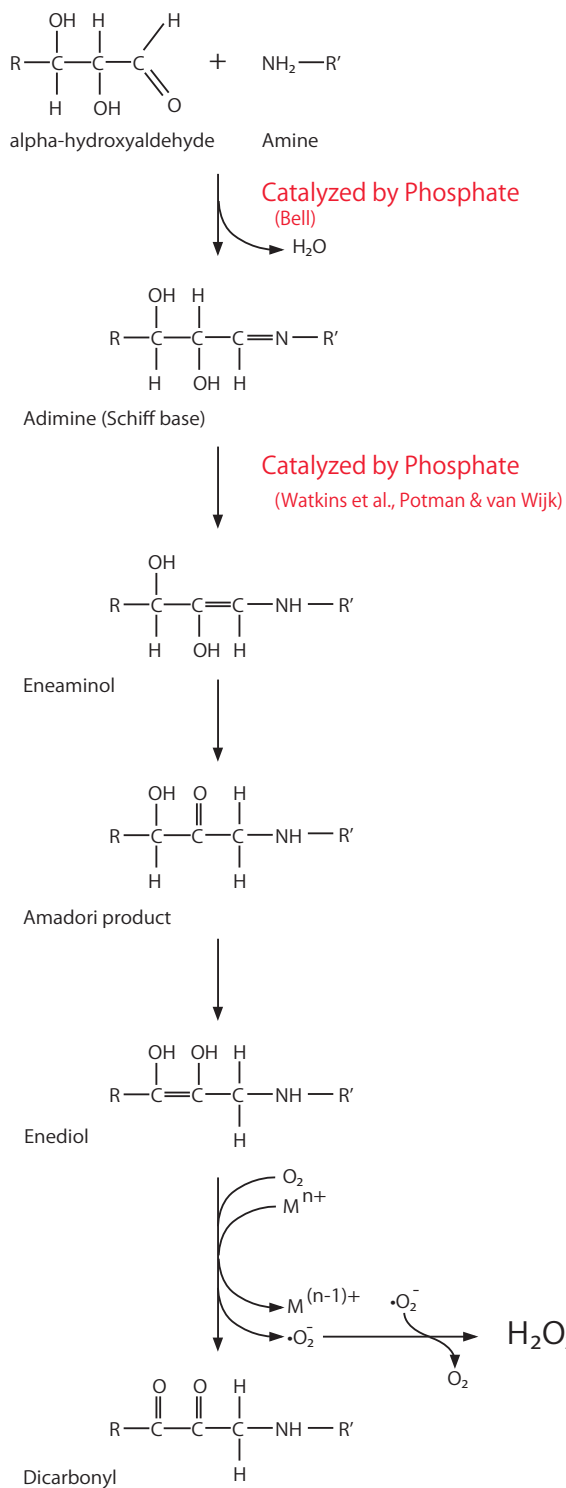


Early stage of the Maillard reaction



Autoxidation

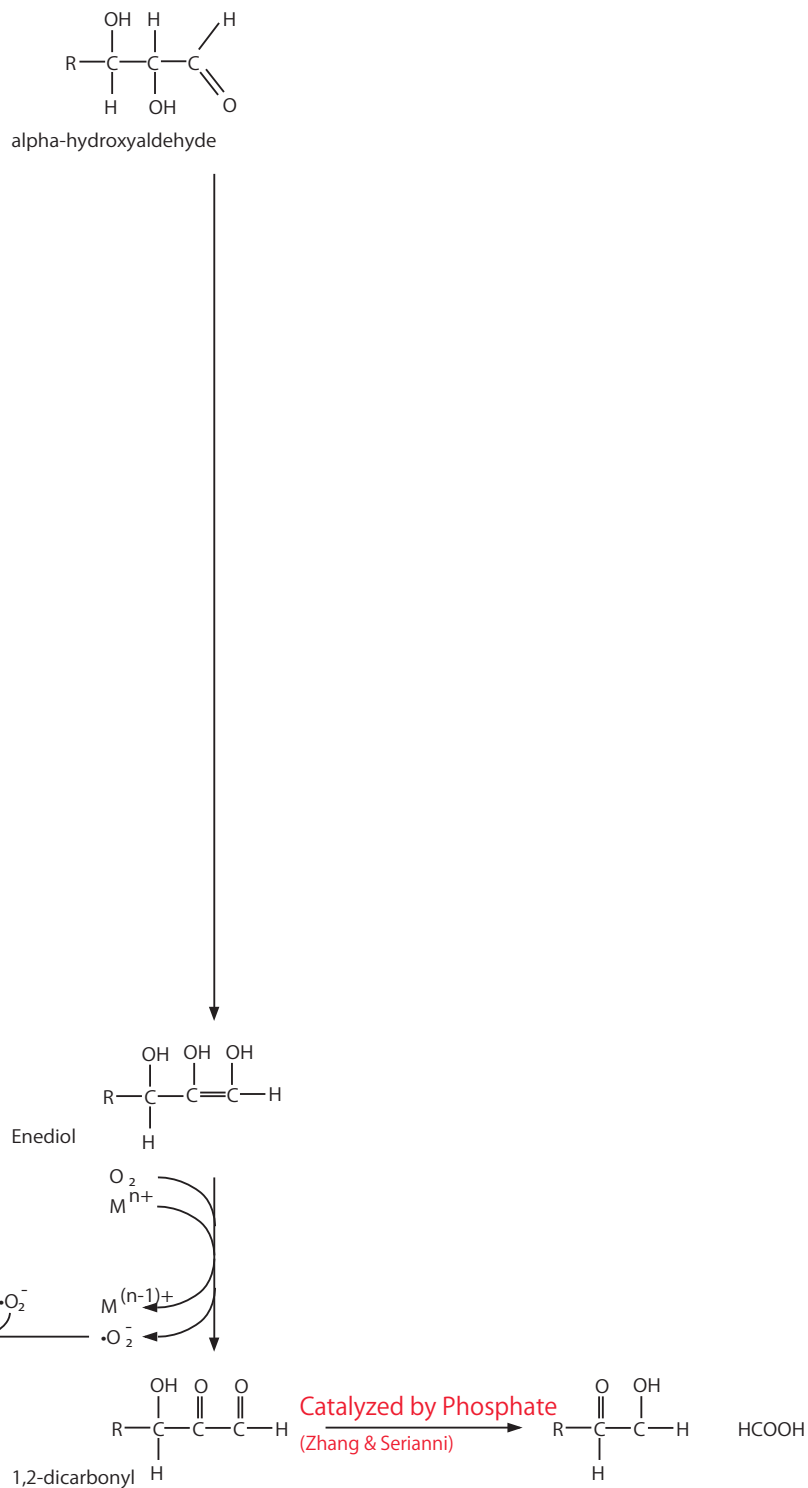


FIG S1 Proposed mechanisms of hydrogen peroxide formation from alpha-hydroxyaldehyde (based on Hunt et al).

References

- Hunt JV, Bottoms MA, Mitchinson MJ. 1993. *Biochem J* 291:529–535.
- Bell LN. 1997. *Food Chem* 59:143–147.
- Watkins NG, Neglia-Fischer CI, Dyer DG, Thorpe SR, Baynes JW. 1987. *J Biol Chem* 262:7207–7212.
- Potman RP, van Wijk TA. 1989. Mechanistic studies of the Maillard reaction with emphasis on phosphate-mediated catalysis, p 182–195, *In* Parmentier TH, McGorin RJ, Ho CT (ed), Thermal generation of aromas. ACS Symposium Series. American Chemical Society, Washington, DC.
- Zhang W, Serianni AS. 2012. *J American Chem Society* 134:11511–11524.

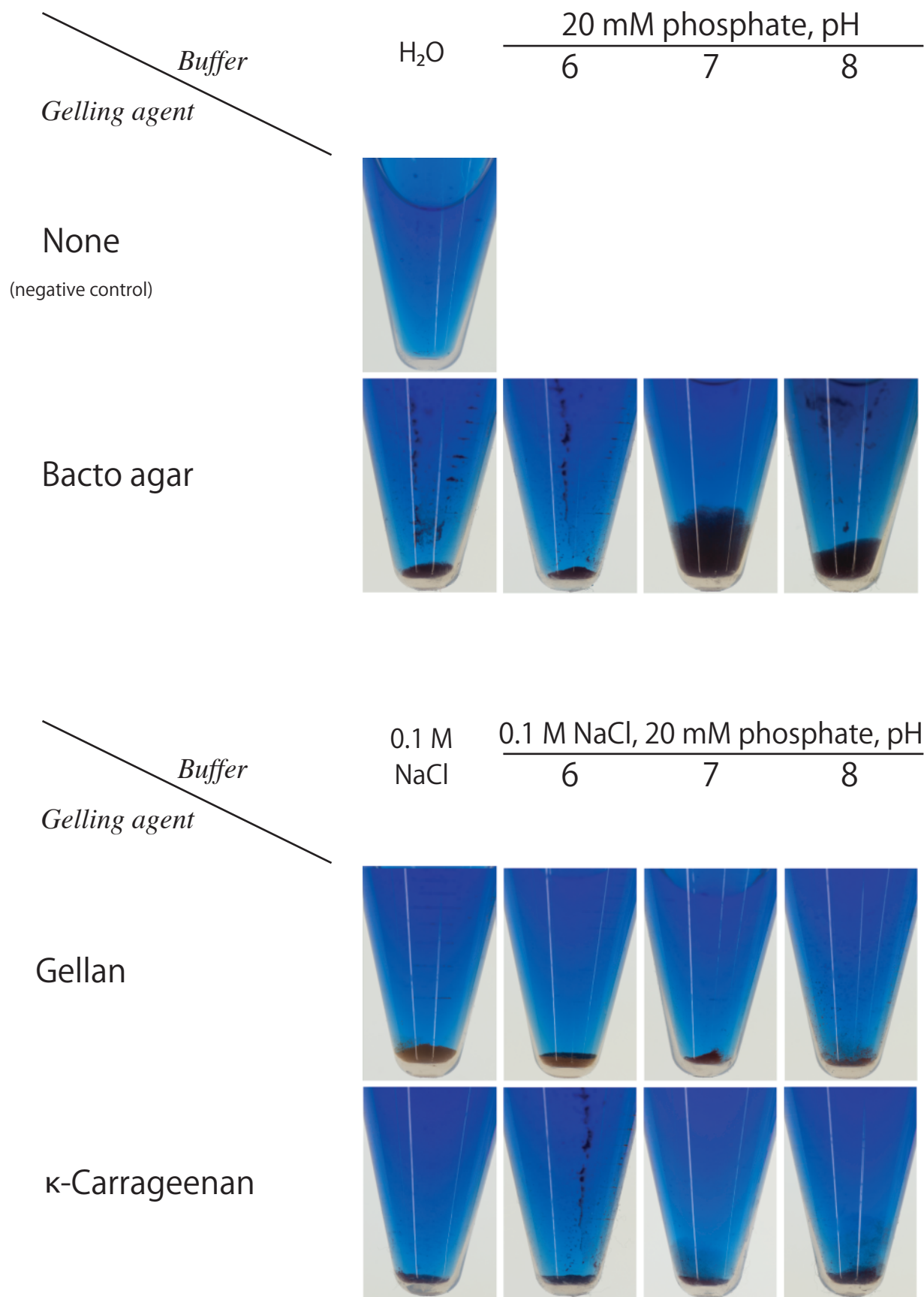


FIG S2 Detection of reducing compounds in autoclaved gelling agents with Fehling's test. One milliliter of each sample (concentrated syneresis fluid) was mixed with 4 ml of Fehling's solution, boiled for 10 min, and then centrifuged to spin down the precipitate. The results in the case of using H₂O is shown as the negative control.

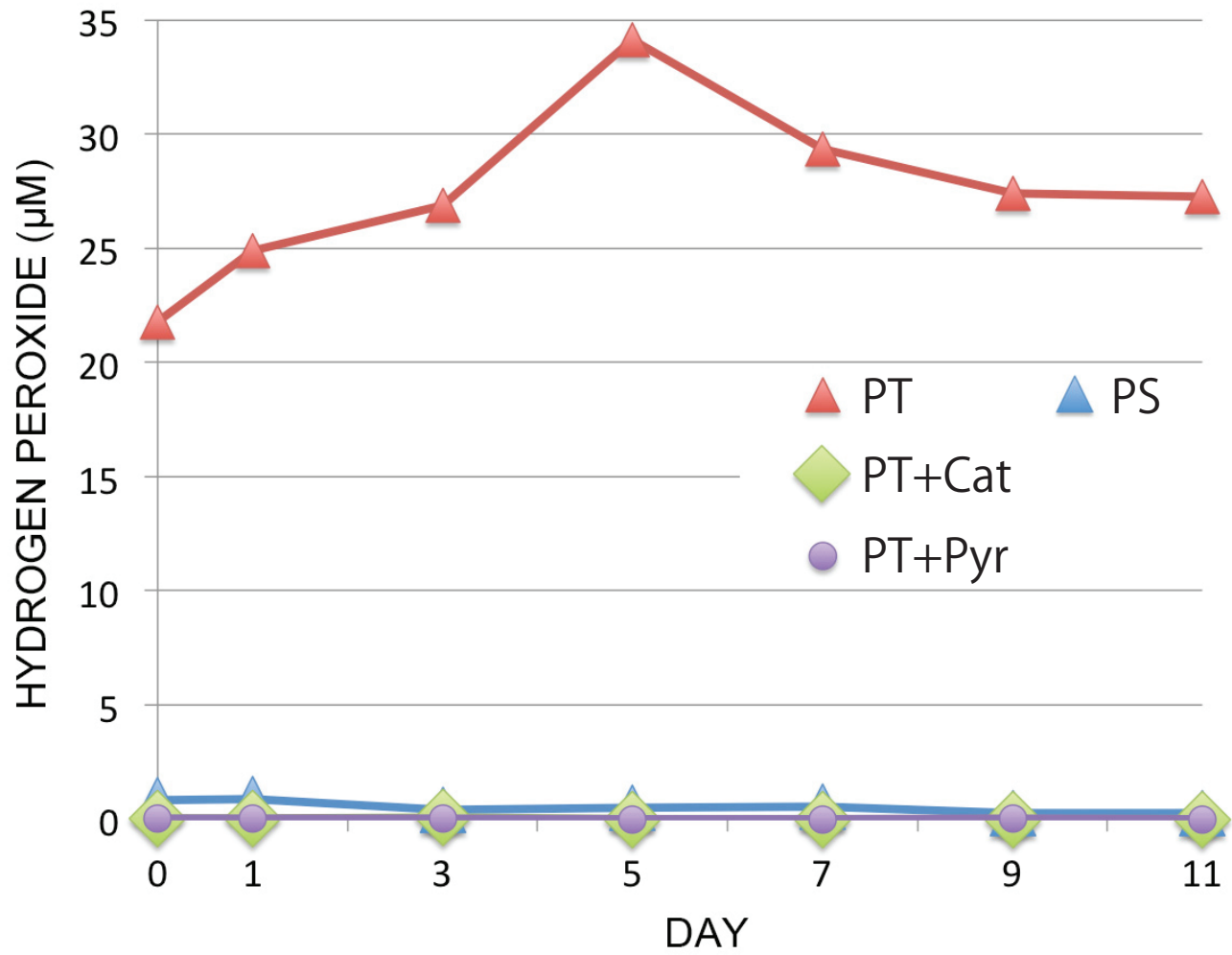


FIG S3 Effect of storage period on hydrogen peroxide concentration in PT, PT+Cat, PT+Pyr, and PS media.

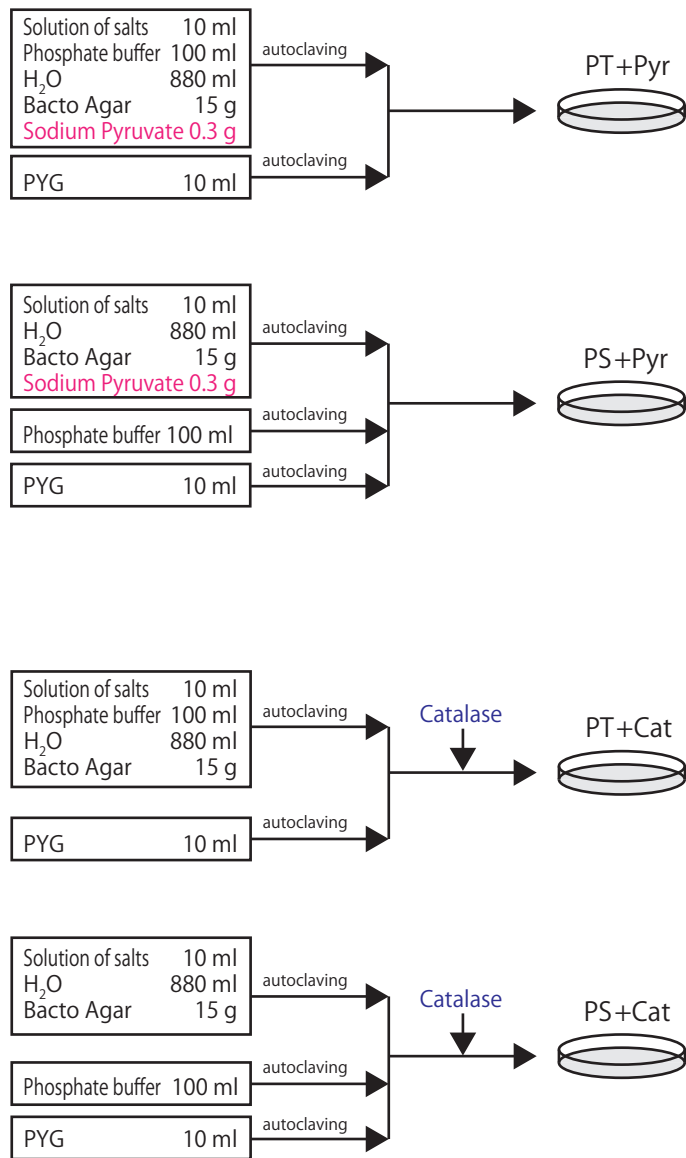


FIG S4 Preparation procedure of sodium pyruvate- and catalase-amended agar media.