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The Effect of Apparent Molecular Weight and Components of Agar on Gel Formation

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The relation between apparent molecular weight and physical properties of agar gel and sol were investigated. Agar was extracted from seven kinds of red seaweed, *Gelidium*, *Pterocladia* and *Gracilaria*, which were collected in different seas. The apparent weight-average molecular weight (AMw) and apparent molecular weight distribution of agar were measured by a high temperature type gel permeation chromatograph. Gel strength and melting point of agar gel, and the viscosity of agar sol were measured. The gel strength of agar gel from each seaweed increased with increasing AMw, and it was found that 3,6-anhydro-L-galactose and sulfate group affected gel formation. These results were also suggested by endothermic peaks of differential scanning calorimetry accompanying the gel-to-sol transition. The melting point of agar gel and the viscosity of its sol also increased with increasing AMw.

Keywords: [agar](#), [gel formation](#), [apparent molecular weight](#)



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