

## SPECIFIC NANOPARTICLE FORMATION VIA AGGREGATION IN CASE OF GLYCOSAMINOGLYCANS AND PROTEOGLYCANS

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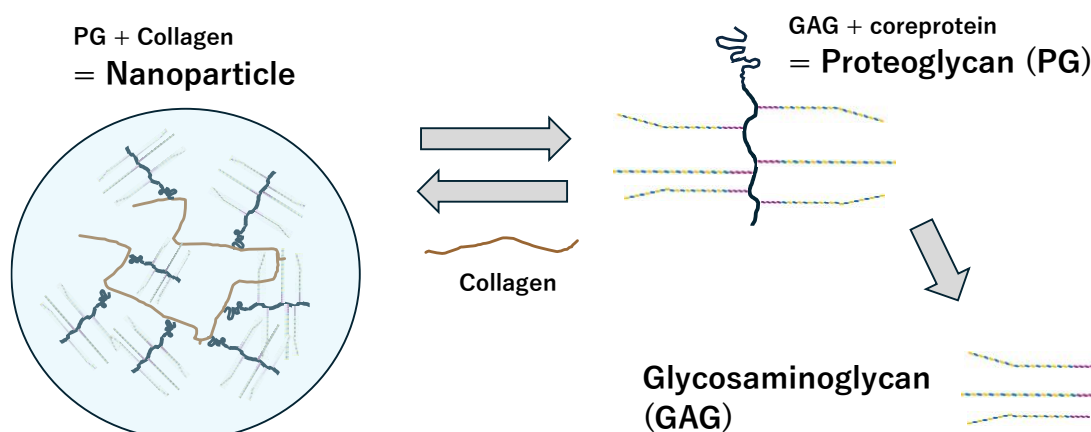
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Proteoglycans (PGs) are glycoconjugate composed of glycosaminoglycans (GAGs) and core protein which are covalently bound to each other. PGs interact with collagen and hyaluronan in cartilage and skin to form extracellular matrix. Generally, the molecular weight of GAGs are several tens of kDa. Recently, a GAG with a molecular weight of approximately 696 kDa was isolated from a cartilage of *Dosidicus gigas* [1]. We also isolated PGs and GAGs from specific tissues of animals besides squid with molecular weight than expected.

We chose inedible parts of squid, salmon and cattle (such as skin, fins, alimentally canal) which were minced, defatted, dried, and enzymatically digested by protease to get GAGs [2]. On the other hands, PGs were extracted from these tissues with 4 M guanidine HCl. We observed decreased molecular weights after ion exchange treatment. We also checked nanoparticle formation of the PGs, and measured the particle size by applying Dynamic Light Scattering method. These results suggest that some PGs and GAGs exist as aggregated nanoparticle.



### References:

1. C. Peng *et al.*, *Carbohydr. Polym.*, **2021**, 262, 117971.
2. N. Takeda-Okuda *et al.*, *Int. J. Biol. Macromol.*, **2024**, 261, 129680.