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## The (2'S,7'S)-O-(2-methylbutanoyl)-columbianetin as a novel allergic rhinitis-control agent

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The (2'S,7'S)-O-(2-methylbutanoyl)-columbianetin (OMC) is a novel secondary metabolite extracted from *Corydalis heterocarpa*, which has long been used as a folk medicine for various inflammatory diseases in Korea. We examined the effect of OMC on allergic rhinitis (AR). We assessed the therapeutic effects and regulatory mechanisms of OMC on the phorbol 12-myristate 13-acetate plus A23187-stimulated mast cell line, HMC-1 cells and ovalbumin (OVA)-induced AR models. OMC significantly decreased the releases of histamine and tryptase from stimulated HMC-1 cells. The degranulation process, characterized by morphological extension of the filopodia on the surface and membrane ruffling, was strongly induced in the stimulated-HMC-1 cell, however OMC suppressed the morphological changes in stimulated-HMC-1 cells. OMC reduced the production and mRNA expression of inflammatory cytokines. These inhibitory actions by OMC were dependent on the regulation of mitogen-activated protein kinases, nuclear factor- $\kappa$ B, and caspase-1 signaling pathways. In the AR animal model, the increased rub scores and AR biomarkers (histamine and IgE) in ovalbumin (OVA)-sensitized mice were significantly reduced by the administration of OMC. Furthermore, eosinophils and mast cells infiltrations in nasal mucosa tissue were also blocked through the regulation of macrophage-inflammatory protein and intercellular adhesion molecule-1 levels. OMC showed the possibility to regulate AR in activated mast cells and OVA-induced AR models. Hence, we suggest that OMC is a powerful and feasible new agent to suppress AR.

### Biography

Hyun-JaJeong has completed Postdoctoral studies with a major in Molecular Biology from Chonbuk National University. She has published more than 200 papers in reputed journals and serving as a Deputy Editor of international journal, TANG (Humanitas Medicine).

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