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Oral Sessions

Uptake of advanced glycation end-products mediated by scavenger receptors-1 class A in macrophage

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Advanced glycation end-products (AGEs), especially toxic AGEs derived from glyceraldehyde (AGE-2) and glycolaldehyde (AGE-3), are biologically reactive compounds. Accumulated evidence suggests that the AGEs are associated with both microvascular and macrovascular complications in diabetic mellitus. Macrophages are reported to remove extracellular AGEs from tissues via scavenger receptors, leading to the progression of atherosclerosis. In the present study, we found that AGE-2 and AGE-3 enhanced their own endocytic uptake by RAW264.7 mouse macrophage-like cells. An antibody against scavenger receptors-1 class A (SR-A, CD204) significantly prevented toxic AGEs uptake. In contrast, none of neutralizing antibody against LOX-1, CD163, CD206, RAGE and CD36 has inhibitory activity on uptake of toxic AGEs. In addition, we showed that algae-derived fucoidan or carrageenan and artificially-produced dextran sulfate which is known as an SR-A antagonistic ligand, but not the others sulfated polysaccharide, including heparin, chondroitin sulfate and hyaluronic acid, has inhibitory activities on uptake of toxic AGEs. These findings suggest that the SR-A is partially involved in the toxic AGEs uptake.