

P011 The influence of lycopene on the interaction of atherogenic LDL with macrophages

Clara De Pascale, Mariarosaria Napolitano*,

Elena Bravo* and Kathleen Botham

The Royal Veterinary College, London, UK.

**Istituto Superiore di Sanita, Rome, Italy*

We have found previously that the presence of lycopene in chylomicron remnants (CMR) enhances their induction of lipid accumulation in macrophages, indicating, that dietary antioxidants carried in CMR may promote, rather than inhibit, macrophage foam cell formation. In this study the effect of lycopene on lipid synthesis and the activity and expression of scavenger receptors in THP-1 macrophages in the presence of atherogenic LDL was investigated. Lycopene reduced the incorporation of [³H]oleate into triacylglycerol by the macrophages in the presence of LDL, acetylated LDL (acLDL), oxidised LDL (oxLDL) and aggregated LDL (aggLDL), but not in the absence of LDL, while incorporation into cholesteryl ester was unaffected in all conditions. Scavenger receptor activity was reduced by lycopene and the expression of mRNA for CD36 was decreased in the presence of LDL, but not acLDL or aggLDL. Levels of mRNA for scavenger receptor-B1, scavenger receptor-A and the LDL receptor were not affected by lycopene in incubations with any of the modified LDL types tested. These findings suggest that lycopene, in contrast to its effects in enhancing the induction of foam cell formation by CMR, may reduce foam cell formation in response to modified LDL by decreasing the activity of scavenger receptors.