

P005 Using a recombinant refolded human scavenger receptor in the recognition of pro-atherogenic lipid particles
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Background: The pro-inflammatory vascular marker lectin-like oxidized low-density lipoprotein scavenger receptor (LOX-1) mediates recognition of pro-atherogenic oxidized low-density lipoprotein (oxLDL) particles. To study the molecular basis for LOX-1 recognition of oxLDL, we reconstituted functional recognition of oxLDL by LOX-1 in an *in vitro* assay.

Methods: Recombinant LOX-1 was expressed in the *E. coli* bacterium, purified from inclusion bodies and subjected to refolding. Protein refolding was analysed using circular dichroism. A novel fluorescent-labelled oxLDL assay was used to analyse ability of refolded LOX-1 to discriminate between native LDL and oxLDL.

Results: Refolded LOX-1 of >99% purity was obtained with 18% final recovery. Circular dichroism analysis confirmed a folded α -helical domain in the refolded LOX-1 molecule. Recombinant LOX-1 showed 70-fold selectivity for oxLDL in comparison to native LDL ($p < 0.0005$).

Conclusion: Here we demonstrate that a human recombinant extracellular domain from a membrane receptor can be produced and refolded into an active state. These findings now allow a detailed analysis of the biochemical basis for LOX-1-mediated recognition of lipid particles.