**Introduction:**
Lipopolysaccharide (LPS), is a component of gram-negative bacteria known for its activation of the host immune system. The phospholipid transfer protein (PLTP) has previously been shown to promote the binding of LPS to lipoproteins, to limit inflammation and to lower mortality following injections of LPS or bacterial infection.
The aim of the present study was to investigate the role of PLTP and lipoproteins in the detoxification of LPS from the peritoneal cavity.

**Methods:**
Injection of LPS intra-abdominally (IP) (1mg/kg) to wild type (WT) and PLTP knocked-out mice (PLTP-KO) (n=9 per group). Mass concentration and activity of LPS were quantitated by LCMSMS analysis of 3-hydroxymyristate and LAL bioassay, respectively. Lipoprotein fractions in plasma were separated by ultracentrifugation (n=10 vs n=12).

**Results:**
Following intra-peritoneal injection, clearance of intra-abdominal LPS was faster and plasma neutralization was more efficient in WT than in PLTP-KO mice (Figure 1). Indeed, LPS found in plasma of WT mice was proportionally less active, sustaining a higher capacity for WT mice to neutralize LPS (Figure 1B). Quantitative dosage of LPS in portal blood, 15 minutes after IP injection, revealed that plasma LPS associates rapidly with the lipoprotein fraction (HDL plus LDL), and in higher proportions as compared to PLTP-KO mice (66 [62-72] % vs 50 [41-54] %, respectively; p < 0.01). In line with previous studies, these observations now indicate that, LPS readily associates with lipoproteins in a neutralizing process PLTP mediated. Finally, even with a heavy LPS load (25 mg/kg), the bulk of LPS was still found in the lipoprotein fraction (80 [80-90] %), suggesting that lipoproteins plus PLTP in WT mice have a high capacity to detoxify intraperitoneal LPS.

**Conclusion:**
In a model of peritonitis, lipoproteins and PLTP were found to constitute key playors for peritoneal clearance and neutralization of LPS. It emerges as a key pathway for the resolution of the inflammatory response in peritonitis.
Figure 1: Time course of total concentration of LPS (A) and active to total concentration ratio (B) after intra-peritoneal injection in wild-type and PLTP knocked-out mice. Results are represented as mean and standard error of the mean * Significantly different LPS: Lipopolysaccharide; PLTP: Phospholipid transfer protein; PLTP-KO: PLTP knocked-out mice;