**Introduction/Background**

Endometrial cancer (EC) is the most common gynecological cancer and the second most common female malignancy in the developed world. Circulating soluble programmed death-2 ligand (sPD-L2) plays a crucial role within the tumor microenvironment for tumorigenesis. Not much is known about the functional consequence of cell surface-expressed PD-L2 or sPD-L2 in oncologic diseases, but understanding the molecular alterations involved in endometrial cancer provides personalized treatments through the incorporation of targeted therapies.

**Methodology**

Our study aimed to investigate the percentage of peripheral blood (PB) monocytes (MO) with PD-L2 expression, and the prevalence of the sPD-L2 in the plasma of patients with endometrial cancer in comparison to healthy blood donors.

The percentage of PD-L2 positive MO was evaluated by flow cytometry. Soluble PD-L2 levels in the plasma of the EC patients (n=45) and the plasma of healthy blood donors (n=20) were investigated via an immunoassay kit ELISA (sPD-L2 as specified by the manufacturer Invitrogen, USA). Plate absorbance was read on an ELX-800 plate reader (BioTek Instruments, Inc, USA) and analyzed by Gen5™ (BioTek 218 Instruments, Inc). The concentrations of sPD-L2 (pg/mL) were calculated via interpolation from a standard curve.

**Results**

The concentrations of sPD-L2 in the plasma of the EC patients were: median 134.720, range 47.696 – 11551.89 pg/mL. The sPD-L2 levels in the plasma of patients with endometrial cancer were significantly lower than in the control group (p < 0.0001). The percentage of PD-L2 positive MO was significantly lower in the PB of patients with EC than in the control group (3.32% vs. 71.48 < 0.0001).

**Conclusion**

There are significant differences in both, the percentage of PD-L2 positive MO, and sPD-L2 levels in patients with endometrial cancer and healthy women.