

6<sup>th</sup> Annual Conference on

## PARASITOLOGY &amp; INFECTIOUS DISEASES

November 15-16, 2018 Istanbul, Turkey

**The role of MORN1 in the intraerythrocytic life cycle of *Plasmodium falciparum*****Cornelia Voigtlander**

Institute of Medical Biotechnology, Germany

Due to increasing drug resistance of *Plasmodium falciparum*, a search for novel drug targets is of great importance. In this respect, the nuclear division cycles of the malaria parasite are of particular interest, since they differ from traditional mitosis in several aspects. Thus, gaining deeper insights into the parasite mitosis, its underlying dynamics and the involved proteins may reveal an entire array of novel targets. In this respect, the membrane occupation and recognition nexus protein 1 (MORN1) which is conserved among Apicomplexa may be a promising candidate. In *Toxoplasma gondii* MORN1 is associated with the spindle poles and the Inner Membrane Complex (IMC). Overexpression of TgMORN1 results in serious defects in nuclear segregation. In *P. falciparum*, MORN1 has been found to be solely expressed in schizonts suggesting a function during mitosis. To further elucidate Morn1 function in *P. falciparum*, affinity purified anti-PfMORN1-antibodies were used for stage specific Western blot and indirect immunofluorescence analysis. The anti-PfMorn1-antibody detected a single band of the expected size of 41.4 kDa. Highest PfMorn1 amounts were found in schizonts and segmenters consistent with its function in mitosis and its association with the IMC. However, contrary to previous studies PfMorn1 expression was also found in rings, which could be confirmed using a second antibody. These results are in good agreement with the microscopic examination. Segmenter stages showed a pattern that could be characteristic for an association with the IMC of merozoites. Rings, however, showed DNA associated MORN1-structures, located terminally at the crescent shaped DNA. The latter findings suggests that MORN1 may not only be crucial for the nuclear division, but may also be required in the earlier development of *P. falciparum*, making it even more suited as potential drug target.

**Biography**

Cornelia Voigtlander has completed her studies in Life Science from Institute of Medical Biotechnology, Germany. She is currently pursuing her PhD at Institute of Medical Biotechnology in Erlangen.

cornelia.voigtlaender@fau.de

**Notes:**