Cervical cancer is the fourth most common cancer in women worldwide (WHO 2018). It is estimated that more than one million women are currently suffering from this type of cancer, and there are 570,000 new cases in 2018. The majority of cases (>80%) occur in less developed regions of the world. For the development of cervical and other mucosal cancers infection by one of at least 15 oncogenic human papillomavirus types is essential. Currently, there are three HPV prophylactic vaccines in the market. They are based on so called ‘virus-like particles’ and are designed to induce antibodies against the L1 major capsid protein, blocking the infection of epithelial cells.

To overcome some limitations of the existing vaccines we have developed a vaccine antigen based on epitopes of the minor capsid protein L2 inserted into the scaffold of thioredoxin from the thermophile Pyrococcus furiosus. This antigen is able to induce neutralizing antibody responses against all oncogenic HPV but also against genital wart causing HPV and a number of cutaneous HPV. For 2020 a phase I safety and immunogenicity study is in preparation.