The thesis comprised here analyzed different aspects of the photoactivation of vitamin B2 by ultraviolet light, implemented in CXL, as a therapy for microbial keratitis. Different parameters that are of importance for the antimicrobial effect of the process were investigated in two experimental articles. Furthermore, two clinical studies were conducted, including a retrospective case series of severe infections treated by the method as well as a prospective clinical pilot study to evaluate the efficacy of the photochemical procedure.

Results from the laboratory and clinical investigations, indicate that the photooxidative method can be utilized as an adjuvant treatment in infections.