세미나 초록

성명	오상욱
소속	아주대학교 첨단바이오융합대학
발표 주제	The Rise of Cellular Immunotherapy: A New Era for Autoimmune Disease Treatment
발표 내용	CAR-T cell therapy has shown remarkable success in treating hematologic cancers by redirecting T cells to eliminate tumor cells, particularly in B cell malignancies like ALL and DLBCL. This clinical breakthrough has paved the way for exploring CAR-T applications beyond oncology. Autoimmune diseases driven by autoreactive B cells, such as SLE and myasthenia gravis (MG), are now being investigated as new targets for CAR-T therapy. CD19-directed CAR-T cells have shown potential to deplete pathogenic B cells and induce remission in some patients. However, broad B cell depletion risks compromising normal immunity and lacks antigen specificity. To address these issues, chimeric autoantibody receptor T (CAAR-T) cells have been developed, using autoantigens as targeting domains to selectively eliminate autoreactive B cells while sparing healthy ones. MuSK-CAART and AChR-CAART are two such therapies under investigation for MG. AChR-CAART, in particular, highlights how optimizing CAR design—such as transmembrane domain choice—can improve stability and efficacy. These advances represent a promising shift toward targeted immunotherapy in autoimmunity.