Vaccines so far have been developed mostly by following an empiric approach. To prevent and possibly cure unresolved and emerging infectious diseases we need to fully exploit the potential of the human immune system. Progress in science and technology makes it possible to achieve what was previously deemed impossible.

The scope of this project is to produce knowledge necessary to develop novel and powerful immunization technologies for the next generation of human vaccines. This goal requires a multidisciplinary approach in which diverse but complementary scientific disciplines and technologies converge. Therefore some of the most competitive European research groups from public institutions and biotechs have agreed to join forces in ADITEC, together with top US groups on systems biology and adjuvants to support this enterprise.

A systems biology approach will be used to study licensed and experimental vaccines in patient characterization studies and in clinical trials, to investigate the effect of adjuvants, vectors, formulations, delivery devices, routes of immunization, homologous and heterologous prime–boost schedules, as well as the impact of host factors such as age, gender, genetics and pathologies. Animal models will be used to complement human studies, and to select novel immunization technologies to be advanced to the clinic.

To address these issues in a coordinated manner, ADITEC is organised on a matrix structure in which research themes and experimental approaches feed into each other. Training curricula will be created to impact on the formation of the next generation of EU researchers in the field. Several ADITEC scientists and institutions are part of the "Sclavo Vaccines Association" (SVA), which is dedicated to vaccines and vaccine research. SVA, acting as the coordinating institution, guarantees the long-term commitment and sustainability of this initiative, beyond the duration of ADITEC itself.

An overview of the different work packages of this project can be found in here.