Editorial

Boosting immunity to Covid 19 variants by ‘Killer’ T cells

New mutant variants of the novel corona virus are showing resistance to antibodies,leading to an exploration of other mechanisms of anti-viral immune responses.

CD4+ and CD8+ Tcells though they cannot prevent infections, are important in most ongoing viral infections for resolving acute infections and protecting against re-infection, even when the antibodies become less effective. In response to viral infections, the immune system produces CD8+ “Killer” T cells which specifically search for and destroy cells infected with the virus. The CD4+ “Helper” T cells are necessary for activating the Killer T cells and production of antibodies. Thus, they help to contain an infection and prevent it from progressing into a severe infection requiring hospitalization. They also potentially reduce transmission by restricting the amount of virus circulating in the body, meaning that an infected person sheds fewer virus particles into the community. Also, COVID-19 infected patients have been shown to develop T cells that target a wide variety of virus proteins, but the proteins which are targeted vary from person to person. This makes it very hard for the virus to mutate and escape cell recognition, unlike for antibody mediated immunity. Antibodies target spike proteins on the surface of viruses, which are highly variable in nature, making them more capable of evading antibody detection. Meanwhile T cells target viral proteins expressed inside infected host cells, which mutate far less frequently

Considering these facts, researchers now are focusing on developing vaccines that stimulate T cells more effectively. Vaccines stimulating T cells may prevent viruses from evading immune attacks and may turn out to be much more effective against newly emerging variants.

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