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IIT Delhi to develop home-based COVID-19 testing kit

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US based Wells Fargo International Solutions Private Limited through their philanthropic partner, United Way of Bengaluru (UWBe), has joined hands with IIT Delhi in this fight against coronavirus.

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ELISA, short for serological enzyme-linked immunosorbent assay, determines whether a person possesses antibodies for COVID-19 in the blood. The test results can help the medical fraternity fight the disease in many ways; a significant way would be the identification of individuals with antibodies who can donate their blood as part of an experimental treatment of infected patients.

This project- a collaboration between IIT Delhi and National Chemical Laboratory (NCL), Pune - has the potential of making a meaningful difference to this situation by enabling affordable, home-based testing.

This research will utilise the microplate-based enzyme immune-assay technique. The choice of antigen will be a peptide that has been computationally identified. Structural analysis of the available complex will be performed to design a novel peptide that has a complementary property with spike protein of COVID-19.

A set of peptides will be designed using a combination approach to test their binding. From the sequences of the variable regions of the Heavy and Light chain including the novel designed peptide, cloning of the mAb fragment (CV-Fab) will be performed. CV-Fab will be produced from which ELISA based testing kits will created.