

# ELISPOT ASSAY TO IMMUNE PHENOTYPE PATIENTS

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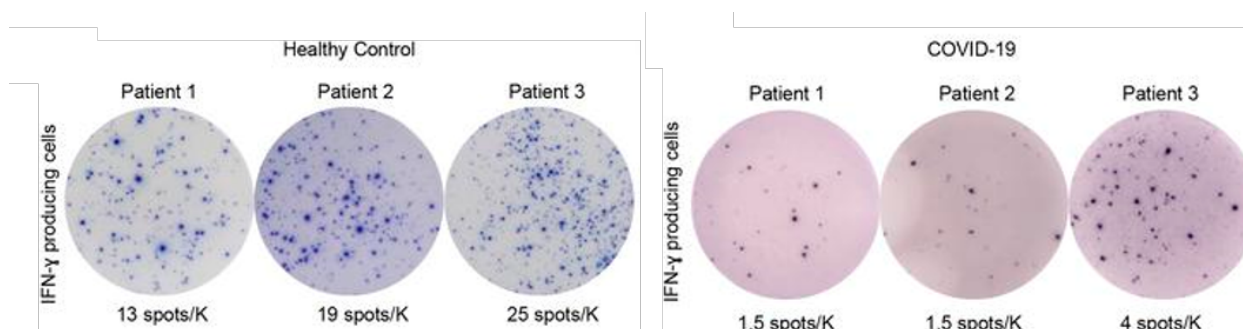
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## Technology Description

A team of researchers, led by Richard Hotchkiss at Washington University in St. Louis, have developed a version of the ELISpot assay to determine if COVID-19 patients are in a hyper-inflammatory or immunosuppressed state. The results of this assay, which can be performed with whole blood, are used to inform a more successful treatment plan.

While some COVID-19 patients suffer from cytokine storm due to an overactive immune system, this team of researchers has recently shown that another subset of patients see unrestrained viral infection due to a failure of host immunity. Those two subsets require polar opposite supportive treatments, so physicians need an assay to rapidly determine the immune status of the patient.



## Stage of Research

The inventors developed a version of the ELISpot capable of using diluted whole blood and validated it on a sample of 127 patients, including 27 hospitalized with COVID-19.

## Publications

- Remy KE, Mazer M, Striker DA, Ellebedy AH, ... Hotchkiss RS. (2020). [Severe immunosuppression and not a cytokine storm characterizes COVID-19 infections](#). *JCI Insight*, 5(17): e140329.

## Applications

- Aid treatment planning in COVID-19 patients

## Key Advantages

- Uses diluted whole blood
- Differentiates patients in hyper- and hypo-inflammatory states for more effective treatment planning

**Patents:** Pending

**Related Web Links:** Hotchkiss [Profile](#) & [Lab](#); Turnbull [Profile](#); Mazer [Profile](#)