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IISc identifies biomarkers to differentiate between bacterial, viral infections

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A recent study from the Indian Institute of Science (IISc), Bengaluru has identified a set of molecular biomarkers that can be used in the differential diagnosis of acute bacterial and viral infections. These biomarkers are different messenger RNA (mRNA) molecules found in the blood; differences in their levels can detect and predict with high probability if an infection is viral or bacterial.

To make it useful in the clinic, the researchers have devised a standalone score called VB_{10}, which could be used for diagnosis, monitoring the stage of recovery after infection, and estimating the severity of the infection.

VB_{10} accurately indicates whether a given blood sample has a bacterial or viral infection, across different bacteria and viruses and across different age groups.

The researchers suggest that the test could be useful for differentiating COVID-19 infection from bacterial infections as well. In the study, they looked at various viral infections for which transcriptomic data is publicly available. This allowed them to develop a generic VB_{10} test score for viral infections.

As soon as transcriptomic data became available for COVID-19, the team tested their approach and found that the test scores could differentiate between SARS-CoV-2 infection and common bacterial respiratory infections.

The researchers expect it to be useful early-on during the infection, and work against any strain. This can supplement the current COVID-19 diagnosis tests.