

Biochemical Assay for Acyltransferase Enzymes

The biological activity of acyltransferase enzymes in bacteria of the genus mycobacteria are essential for maintaining the integrity of the cell wall and thus the survival of these pathogenic bacteria. Specifically, mycolyltransferase activity, as catalyzed by the antigen 85 family of enzymes, is essential for the survival of infectious disease causing *Mycobacterium tuberculosis*. Currently, the only published methodology to assay mycolyltransferase enzymes uses radiolabeled substrates insoluble in water, and no compounds are available that produce a visible color change. The assay requires sonication to make a suspension of the substrate, so it is never clear what concentration of the substrate is used for the assay. This makes quantification impossible. Separation of the substrates from any products formed requires thin-layer chromatography, which requires hours to perform. Thus, a rapid colorimetric enzymatic assay has been developed that tests for acyl- or mycolyltransferase activity. This new assay allows for high-throughput testing of potential inhibitors of the aforementioned classes of enzymes.

The University of Toledo is seeking companies interested in utilizing this rapid colorimetric assay that tests for acyl- or mycolyltransferase activity.

Applications:

1. Measuring the catalytic activity of acyltransferase enzymes
2. Test for acyl- or mycolyltransferase activity
3. High-throughput screening of inhibitors of acyl- or mycolyltransferase activity

Advantages:

1. Ag85 is a new target for drug development
2. Novel platform technology for identifying chemical entities
3. Does not use radiolabeled substrates
4. Does not require sonication of the substrate
5. Immediate observation of enzyme activity
6. Very accurate measurement of the activity level
7. Results from the assay in less than 30 minutes
8. Amenable to high-throughput screening
9. Allows for the very rapid testing of potential inhibitory compounds

This invention is patent pending

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