Infliximab
Activity and Neutralizing Antibody
INTRODUCTION

Reporter cells carry a TNF-alpha-inducible, NFkB-regulated, firefly luciferase reporter-gene construct. When TNF-α is added to the reporter cells, the reporter gene turns on and generates firefly luciferase. Firefly luciferase expression is normalized relative to the expression of the renilla luciferase gene, which is under the control of a constitutive promoter also carried by the same reporter cell.
Serum from a patient taking infliximab is mixed with TNF-α and added to the reporter cells. Infliximab blocks the activity of TNF-α. The amount of infliximab present inversely correlates to the amount of luminescence.

The amount of infliximab in serum can be calculated by comparing the level of TNF-α with calibrators of known infliximab concentrations.
In the presence of neutralizing antibodies, the reporter gene is turned on despite the presence of exogenous drug in the assay.

Some patients develop antibodies to infliximab. It is important to detect detrimental antibodies that neutralize the drug and not those that bind to the drug but do not block drug activity. In the presence of neutralizing antibodies, the reporter gene is turned on despite the presence of exogenous drug in the assay.

Antibody titer is obtained by identifying the dilution point of patient's serum where blocking of infliximab activity is no longer observed.

Normalized luminescence

Specimen

Threshold

Dilution of patient specimen
REFERENCES


