

# Sac-Cel\*

Solid Phase Second  
Antibody Coated  
Cellulose Suspension

Anti Rabbit IgG	AA-SAC1
Anti Sheep/Goat IgG	AA-SAC2
Anti Guinea-pig IgG	AA-SAC3
Anti Mouse/Rat IgG	AA-SAC4



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## Summary and Explanation of Test

Double antibody separation systems have been commonly used since the early development of radio-immunoassays<sup>1,2</sup> and have proved to be reliable. Various alternative procedures have been used in the search for less demanding methods, in particular solid phase techniques<sup>3,4</sup>.

Sac-Cel consists of second antibody covalently coupled to cellulose, the use of which combines the specificity of liquid double antibody procedures with the speed, simplicity and precision of solid phase separations. Four different types are available, viz: anti rabbit, anti sheep/goat, anti guinea-pig and anti mouse/rat.

## Reagents

The material is supplied as 200 mL of a suspension containing 10 percent solids suspended in a buffer of the following composition:

Sodium phosphate 0.02M  
Ethylenediaminetetraacetic acid (disodium salt) 0.01M  
Sodium chloride 0.145M  
Sodium azide 0.09 percent w/v  
Bovine serum albumin 0.5 percent w/v  
Tween 20 0.5 percent v/v  
pH 7.4

A magnetic stirring bar is included in each bottle.

## Precautions in Handling Reagents

The reagent contains sodium azide as preservative and appropriate care should be taken when disposing of azide containing solutions.

## Life and Storage

The reagent should be stored at 2 to 8°C, at which temperature it will retain potency at least until the expiry date indicated on the bottle label.

## Methodology

The Sac-Cel reagents are intended for use in the separation stage of sensitive immunoassays employing labelled analytes, especially radio-immunoassays. When the incubation of the "first" antibody with labelled analyte is complete, invert the bottle several times then place the bottle of Sac-Cel on a magnetic stirrer (the bottle contains a magnetic stirring bar), excessive foaming should be avoided. Take care to select the type of Sac-Cel appropriate to the species of first antibody being used.

While stirring continuously add 0.1 mL of the suspension to each assay tube (except "totals"). Vortex the contents of each tube and allow to stand at room temperature for 30 minutes without further mixing. The cellulose will gradually sink to the bottom of the tubes but should not be re-suspended.

Add 1 mL of de ionised water to each tube (except "totals") and centrifuge for at least 2 minutes at 1000g. Aspirate the supernatant and count the bound fraction in the pellet. Alternatively, decant the supernatant in which case either the bound or free fraction may be counted.

## Quality Control

Non specific binding (or blank) levels are normally of the order of 1.5 to 2 percent but with some antigens higher values may be observed.

## Limitations of the Procedure

If the quantity of the first antibody in the system is greater than 0.04 $\mu$ L (e.g. 0.1 mL of a 1:2500 dilution), the use of Sac-Cel is not recommended as the amount of suspension is inadequate to bind all the antibody and a decrease in percentage binding will be observed.

DO NOT USE ADDITIONAL CARRIER SERUM as is usual with liquid second antibody separations, even if the first antibody is used at very high dilution. If normal carrier serum is routinely added to the diluent a different diluent must be prepared.

## References

1. Hales, C.N. and Randle, P.J. (1963). *Biochem. J.*, 88, 137.
2. Korinckx, Ph., Bouillon, R. and De Moor, P. (1976). *Acta Endocr.* (Kbh.), 81, 45-53.
3. Morgan, C.R. and Lazarow, A. (1963). *Diabetes*, 12, 115.
4. Sluiter, W.J. et al. (1972). *Clin. Chim. Acta.*, 42, 255.

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