

## Tacrolimus (whole blood)

**Pseudonyms:** FK506, Prograf

### General information

Tacrolimus belongs to a family of immunosuppressant drugs that act to suppress the body's T-cell mediated immune response, known as calcineurin inhibitors. Its main use is to prevent transplant rejection but is also used in lower doses in the treatment of ulcerative colitis and as a topical treatment for severe eczema. Monitoring of blood levels is only indicated in the transplant setting where much higher doses are given. The pharmacokinetics of this drug are complex and subject to moderate, unpredictable inter and intra-individual variability. Trough blood concentrations are used to individualize dosage to minimize the risk of organ rejection and/or drug side effects.

### Collection container:

Whole blood EDTA (Sarstedt Pink Top, 3.4ml and 1.2ml – paed)



### Type and volume of sample:

Whole Blood (1ml)

### Specimen transport/special precautions:

In-patient samples arriving in the laboratory before 10.30am will be analysed and reported the same day. Samples arriving after 10.30 but before 14.30 will be analysed the same day but cannot be reported until the next working day.

Out-patient samples will be analysed by the next working day.

### Laboratory information

#### Method principle:

HPLC separation with Tandem Mass Spectrometry

#### Biological reference range:

The recommended maintenance blood concentration in liver and kidney patients are:

- In the first 3 months post-transplantation, a target trough concentration of 10-15 µg/L
- Thereafter, a target trough concentration of 3-10 µg/L

## Division of Laboratory Medicine

### Biochemistry

The desired target range should be tailored to the individual as they are dependent on many factors. These ranges are for guidance only.

#### **Turnaround times:**

24 hours (Monday – Friday). Not available routinely at weekends and bank holidays.

### Clinical information

#### **Factors known to significantly affect the results:**

No known analytical interferences.

Samples should be taken immediately pre-dose as target ranges are aimed at trough levels.

#### **Clinical decision points:**

Results > 20µg/l may warrant immediate action and are telephoned by laboratory staff.

**(Last updated November 2019)**