



JRC-IRMM's reference material for C-reactive protein A worldwide anchor point in clinical chemistry

What is C-reactive protein?

C-reactive protein (CRP) is one of the most important health status markers measured in human blood tests. It is an marker for inflammation, and its measurement enables the diagnosis of viral and bacterial infections. In recent years, CRP is emerging as a marker of cardiac risk.

The reason that CRP is so important as a health marker is that the concentration of CRP changes very quickly in the case of inflammation or infection. In the case of bacterial infections, the CRP level can go up more than thousand-fold. Measurement results of CRP can help physicians to diagnose conditions and decide on a treatment for viral and bacterial infections.

Millions of measurements of CRP are performed each year, and it is routinely measured in annual check-ups and medical emergencies.



JRC-IRMM's reference material for CRP enables laboratories to use common reference ranges and to compare results between hospitals and countries over time.

JRC-IRMM's reference material –a worldwide anchor point

Clinical measurements of CRP world-wide have all been anchored to a previous reference material from JRC-IRMM for over 15 years. In 2009, JRC-IRMM released a new reference material for CRP, which aimed at further increasing the harmonisation of results between laboratories.

An optimised reference material was produced on the basis of biochemical research. The material, called ERM-DA472/IFCC, was produced in collaboration with the International Federation for Clinical Chemistry and Laboratory Medicine (IFCC).

The JRC-IRMM's reference material for CRP is the *de facto* standard which enables laboratories worldwide to use common reference ranges in diagnosis, and to compare results between hospitals and countries over time.

The reference material is used as a calibrant by *in vitro* diagnostics manufacturers to assign values to their in-house and commercial calibrators, which in turn are used by clinical chemistry laboratories to calibrate their instruments. This "calibration cascade" links all patients' test results to JRC-IRMM's reference material.

Without such a worldwide anchor point, it would be impossible to have common reference ranges and decision points. Misinterpretation of measurement results could lead to patients being treated with medication unnecessarily, or not receiving treatment to fight potentially very serious diseases.