

Beta-2 Microglobulin (B2m), in serum and urine, for **IMMAGE® 800**

General information: structure, function ...

β 2 microglobulin (B2m) is a protein of low molecular weight (11800 Da) which forms the light chain of antigens of Class I Major Histocompatibility Complex (MHC) and is therefore found in the membrane of most nucleated cells, and in particularly high concentrations on the surface of lymphocytes.

In free form, B2m is found in both serum and urine of normal individuals.

B2m in serum - Clinical Significance

Elevated serum levels of B2m are either due to an increased production or to a decrease in the glomerular filtration rate which determines its accumulation. The increased rate of synthesis may be caused by many different diseases, in particular those of the lymphoid immune system, hematologic malignancies, viral infections, autoimmune diseases and others. Reports indicate that the ratio B2m/Cystatin-C may be a good indicator of the level of lymphoproliferation by individualizing the increased level of B2m of a possible altered renal function.

B2m is hence not used as a specific diagnostic marker for any pathology in particular, but is rather widely used as a quantitative prognostic marker in many diseases. To take just one example, measurement of B2m levels is included in the International Staging System for Multiple Myeloma.

B2m in urine - Clinical Significance

B2m, in a similar fashion to other micro-proteins, is filtered by the glomerulus and in normal conditions is almost completely reabsorbed by the renal tubules. Measurement of B2m concentrations in urine is a very sensitive marker of tubular dysfunction due to any cause or pathology (transplants, diabetes, poisoning, etc.). Although as a tubular marker it suffers from the twin problems of instability in acidic environments ($\text{pH} < 6$) and variable production levels, it is widely used due to the availability of the assay in many laboratories.

Assay Performances and Characteristics

- **Non-competitive NIPIA** Assay: Kinetic Immunoassay, enhanced with polystyrene particles, for their use on *Beckman Coulter's IMMAGE® 800* Immunochemical Systems.
- Standardized to the *WHO's 1st International Standard for Beta2 Microglobulin* (code: B2M).
- Reagents, prediluted Calibrators and Controls, at 3 levels for serum and urine, in ready-to-use containers.
- Single calibration (common channel) for serum and urine.

Catalogue

3diag - B2m - 800 Kit

 REF TD-42520 100 testP/N *Beckman Coulter*: **B28030**

Contains Reagents, prediluted Calibrators (6 levels) and Controls (3 levels) for serum and urine.

Also available for other analytical platforms. For further information, please contact the Customer Support Service at support@3diag.com