Bone Alkaline Phosphatase

Synonyms	BALP, BSALP, Bone specific alkaline phosphatase
Clinical Indication	Approximately 95% of circulating total ALP is derived from the bone and liver isoforms of the tissue-nonspecific isoenzyme. Bone ALP constitutes about 40% of serum total ALP in health. It is produced by osteoblasts to provide a high PO4 concentration at the osteoblast cell surface during bone mineralisation and is marker of bone formation. Bone specific alkaline phosphatase can be used to monitor response to antiresorptive therapy. BALP may be an appropriate bone marker to use in renal bone disease when other bone markers are affected by renal clearance. Currently only available to CKD stage 4-5 patients also under the care of the Rheumatology team for bone disease.
Part of Profile / See Also	
Request Form	Combined Pathology manual Blood form or ICE request
Availability / Frequency of Analysis	Referred test: Analysed by London Imperial Charing Cross Hospital 8673 Bone Marker Service, if specific criteria met.
Turnaround Time	3 weeks
Patient Preparation	None. A baseline pre-treatment measurement if required when assessing response to antiresorption therapy.
Sample Requirements	
Specimen Type	Serum
Volume	2ml
Container	 Yellow top (SST) tube
Reference Range & Units	Pre-menopausal female: 5 – 16 U/L Males: 8 – 20 IU/L Note that postmenopausal ranges are poorly defined and female patients that are being treated for osteoporosis should be targeted to reduce their bone turnover into the bottom half of the premenopausal range.
Interferences	Use of Bone ALP may be compromised in patients with liver disease due to 8-15% cross-reactivity with liver isoform.
Interpretation & Clinical Decision Value (if applicable)	Single measurements of BALP are of limited value. A sample should be taken at baseline and 3 months after starting treatment to monitor response to therapy or disease progression. The least significant change between samples taken at 3 months intervals is +/-30%.

	Bone ALP is a marker of bone formation so response to antiresorptive therapy lags behind suppression observed with resorption markers by several weeks. Bone ALP levels may remain elevated for up to 6-9 months following healing of bone fractures.
References	http://www.sas-centre.org/assays/bone-markers/bone-alkaline-phosphatase
Test code	SAS
Lab Handling	Aliquot 500ul and store in referrals rack at 4C. Sent daily by courier to Charing Cross Hospital, London.

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