

Stability

Stability of MagSi Streptavidin (STA) beads in automated systems

Introduction and background

MagSi Streptavidin (MagSi-STA) beads can be applied for low-throughput manual testing assays, but are also very useful in high-throughput automated systems. The paramagnetic strength makes them easy and quick to separate. This property improves reproducibility, since no beads are lost during the washing procedure. The high binding capacity provide a large dynamic range and the silica base will have no background fluorescence.

Experiment

Antibody against a peptide/steroid was coupled to the MagSi-STA beads. The beads were then tested in a competitive steroid assay on a random access automated immunoassay system, measuring the binding properties at day 1 and day 14. Beads were incubated with a fixed concentration of fluorescent labelled steroid and co-incubated with increasing concentrations of competitor (same steroid, but unlabelled). During these 14 days, the beads were kept in the system at 4-8°C and continuously mixed to prevent sedimentation.

Results

Figure 1 shows the two plots of the calibration curve measured after 1 and 14 days. The two curves overlap each other, so there is no loss in binding capacity/ activity after 14 days of on-board storage. Also a measurement after 4 weeks gave similar results (data not shown)

Conclusion

MagSi-beads can be used in high throughput assays which require that the beads are stored on-board of the system during several weeks. Results show that there will be no loss in binding capacity for the MagSi-STA beads.

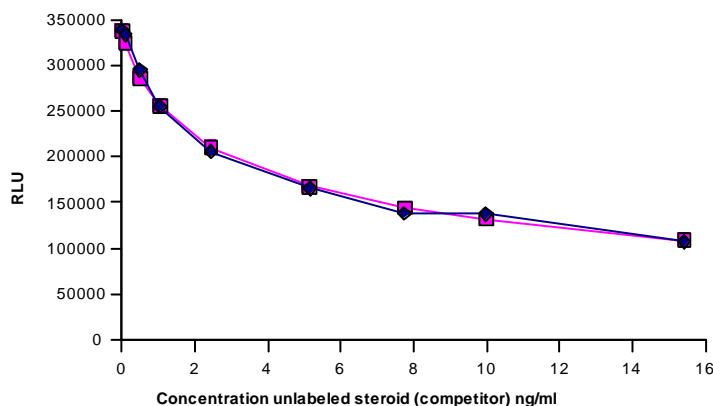
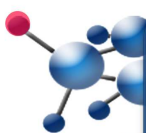


Figure 1:

Relative luminescence units (RLU) of fluorescent labelled steroid on MagSi-STA beads at day 1 (○) and day 14 (◻). On the x-axis the increasing concentration of competitor (unlabelled steroid).



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