Aqueous Normal Phase ANP ballistic gradients compared to same in HILIC – Tips & Suggestions

In comparing Aqueous Normal Phase or ANP vs. HILIC, ANP has an advantage in using ballistic gradients because HILIC is generally not suitable for these types of gradients.

The reason for this problem is the semi-permanent water layer found on the surface of all ordinary HPLC grade silica takes too long to re-generate between runs, compared to the timescale of the sharp gradient. In contrast, ANP columns *(made with silica hydride)* do not have an adsorbed water layer and adsorb and desorb the mobile phase readily, so ballistic gradients can be used easily and with very good **precision**.

***DEFINITION**: A ballistic gradient is a very fast separation technique used mostly in LCMS applications; the complete analysis can take less than one minute and up to five. Non-optimal, high flow rates or linear velocity are combined with fast gradients and very short columns.*

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