

APPLICATION NOTE

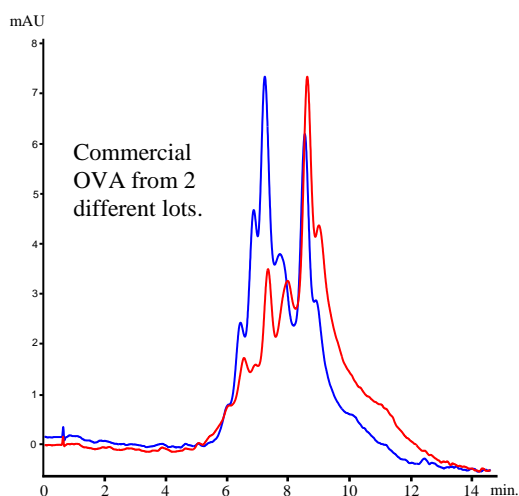
Use of STYROS™ HQ Simulated Monolith™ Polymeric In the Quality Control of Incoming Lots.

It is customary for the manufacturer to provide a specific purity test for his products. That test however is arbitrary and is often overshadowed by your own more appropriate test.

The following chromatogram shows two different lots of the same product provided by the same manufacturer.

It is labeled as $\geq 98\%$ pure by "agarose gel electrophoresis".

A simple run on a **STYROS™ Simulated Monolith™** column shows a different depiction.



Chromatogram 1

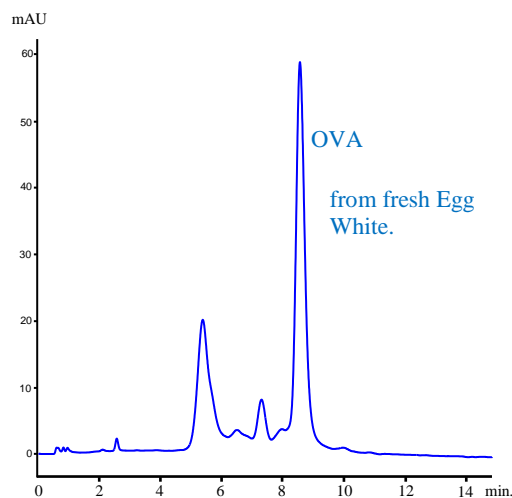
Different lots of commercial OVA on **STYROS™ HQ/XH**
4.6 x 100 mm at 2 ml/min (720 cm/hr)

Table 1. Operating parameters.

HPLC System.	Agilent 1100 with thermostatted column compartment and quaternary pump.
Columns	STYROS™ HQ/XH 4.6 X 100 mm (1.66 ml)
Mobile phase.	A: 20 mM Tris, pH=8.2 B: A + 1 M NaCl, pH= 8.2
Flow rates	2 ml/min (720 cm/hr of linear velocity)
Gradient	1 to 30 % B in 18 cv
Temperature	30°C
Detection	280 nm
Injection volume	10 μ l
Pressure Drop	6 bar (87 psi)
Sample:	5 mg/ml of commercial OVA labeled as $\geq 98\%$ pure.

Although the multitude of peaks in the chromatogram 1 indicate the presence of more than one species, it is very likely that those species are too close to one another to be characterized by gel electrophoresis.

Indeed the chromatogram of native OVA from egg white indicates the presence of unaltered OVA to be only a minor component of the commercial OVA offered.



Chromatogram 2

OVA from fresh Egg White on **STYROS™ HQ/XH**
4.6 x 100 mm at 2 ml/min (720 cm/hr)

Compared to Monolith, the Simulated Monolith™ columns are able to make such evaluation in a short time

A direct comparison with of a similar size Monolith column of 4.6 x 50 mm provides a better picture.

	Simulated Monolith™	Monolith
<i>Maximum operating pressure</i>	3000 psi (21 MPa)	1200 psi (8.2 MPa)
<i>Maximum operating temperature</i>	70 °C	70 °C
<i>Recommended flow rate</i>	Up to 1,740 cm/hr	Up to 540 cm/hr
<i>Maximum flow rate</i>	1,800 cm/hr	720 cm/hr
<i>Typical back pressure at 1ml/min</i>	44 psi	290 psi
<i>Solvent compatibility</i>	All HPLC solvents	Most HPLC solvents
<i>pH range</i>	1-14	2-12
<i>Capacity (BSA)</i>	90 mg/ml	18 mg/ml
<i>Buffer changes</i>	No restrictions	Restricted

