

PRODUCT FAQs

1. How “pure” is the Hyalose bulk HA product in terms of teichoic acids and peptidoglycans?

Our partner, Novozymes, makes very clean recombinant HA by fermentation of non-pathogenic, GRAS (Generally Regarded As Safe) *Bacillus subtilis* using Hyalose-licensed technology. No cell wall polymer components of pathogenic strep bacteria are present, but we have not specifically assayed to see how much (if any) *Bacillus* cell wall or carbohydrate components are present. We are in the midst of doing sensitive carbohydrate analyses right now and do not have a final answer yet.

2. How is Select-HA™ Produced?

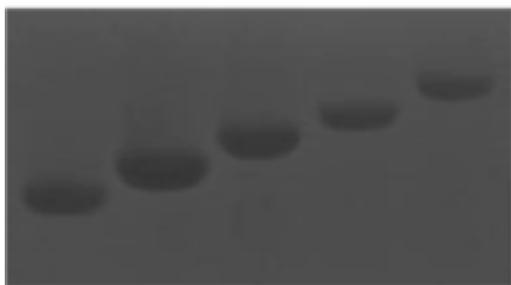
Select-HA is prepared by *in vitro synthesis* using recombinant *Pasteurella multocida* hyaluronan synthase¹.

3. How is molecular mass (size) of Select-HA™ determined?

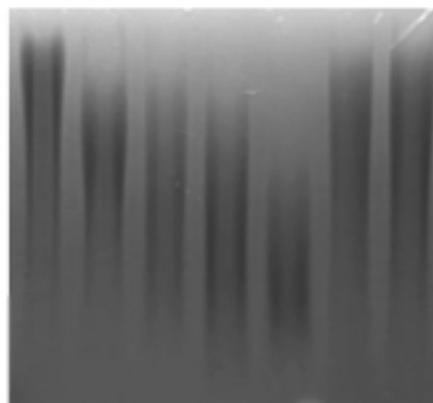
It is determined by Multi-angle Laser Light Scattering-Size Exclusion chromatography (MALLS-SEC) and the value is typically within $\pm 5\%$. The value we report is an average of multiple analyses.

4. In regards to the polydispersity, what is the difference between Select-HA™ and other commercial HAs?

The unique property of Select-HA™ is that it has very narrow size distribution (polydispersity close to 1) while all other commercial HA polymers are mixtures of HA with a much broader size range. Please see the picture below (agarose gel stained with Stains-all) for a better understanding.



Select-HA of 285, 350, 425, 495 and 575 kDa
(from left to right)



Other commercial HA of various sizes

5. What is the level of DNA and protein in Select-HA™?

The sample contains no DNA/RNA and the level of protein is certified to be less than 0.1%.

6. Does the Select-HA™ contain endotoxin?

For Select-HA™ of low-endotoxin grade, extra efforts are made to remove endotoxin and its level in the final product is certified to be less than 0.1EU/mg of HA.

7. How are the various categories of Select-HA™ defined regarding their molecular mass?

Due to the nature of the production process, there is lot to lot variation. If the indicated molecular mass (determined by MALLS-SEC and reported on the Certificate of Analysis) falls within 25-75 kDa, it is called Select-HA50™. However, the Select-HA50™ is not a mixture of HA ranging from 25 kDa to 75 kDa. Similarly, Select-HA150™ covers 125-175 kDa, Select-HA250 covers 200-300 kDa, Select-HA500 covers 400-600 kDa and Select-HA1000 covers 800-1200 kDa. Remember, for any given lot, the polydispersity is close to 1 (that means, close to monodispersity).

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8. What does a Select-HA™ ladder contain?

The HiLadder is **a mixture of five Select-HA molecular mass markers** in the range of ~500 kDa to ~1500kDa. The LoLadder is a mixture of five Select-HA™ molecular mass markers in the range of ~25 kDa to ~500kDa. Each ladder contains material enough for 20 gel-runs when using the method recommended² (please refer to specification sheet).

9. What is the Mega-HA Ladder?

The Mega-HA Ladder is a mixture of streptavidin complexes containing one, two, three or four end-labeled biotin-Select-HA molecules of very defined sizes for use as size standards in gel electrophoresis or other separation methods³. It spans the range above 1.5 MDa.