



# Macromolecules with Focus on Carbohydrates



The Fresenius Kabi Austria plant in Linz can point to more than 60 years of experience in the development, manufacturing and analytics of carbohydrates.

## cGMP and Contract Manufacturing/ Analytics

Our facility is equipped for production as well as analytics of gram to multi-kilogram quantities, and can supply both simple and complex carbohydrates for any scale from early clinical trials to large-scale production.

Our site complies **with all international regulatory standards.**

### Capabilities

- Carbohydrate binding
- Carbohydrate interaction
- Carbohydrate synthesis
- Carbohydrate derivatization
- Carbohydrate tailoring
- Glycosylation
- Fluorescein marking

### Technologies

- Lab/pilot scale (up to 200 L / 30 kg)
- Commercial scale (up to tons)
- Multi-purpose & dedicated vessels
- Evaporation (up to 200 L)
- Microfiltration
- Ultrafiltration (up to 1000 L)
- Desalination
- Drying
- Lyophilization bulk/ vials
- Milling (up to 50 kg)
- Packaging

### Raw Materials

### Innovative Technologies for Carbohydrates

#### Disaccharide

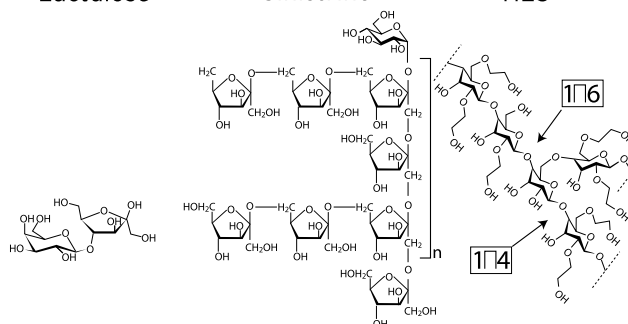
Lactulose

#### Oligosaccharide

Sinistrine

#### Polysaccharide

HES



### Our Service

- Synthesis of lab-scale carbohydrates
- Production of pilot-scale carbohydrates, including engineering scale-ups to industrial production processes
- Chemical modification of carbohydrates
- Customizing carbohydrates for narrow polydispersity using membrane separation technology, like ultrafiltration or nanofiltration
- Pilot-scale production of bulk pharmaceutical intermediates and ingredients, as well as APIs based on carbohydrates
- Derivatization of carbohydrates for engineering of physico-chemical properties
- Fluorescein marking for diagnostic applications
- Production of tailor-made linkers for HESylation of Active Pharmaceutical Ingredients
- Analytics like the special HPAEC-PAD as well as routine GPC
- Regulatory support, compilation and support with filing all relevant documentation