

High pressure to find new active compounds

The discovery of new active compounds with completely new mechanisms of action is one of the greatest challenges for further improving human health on a global scale. The research group "Finding novel active compounds with high pressure" (HoWi) will investigate the enormous potential of pressurized cultivation and develop new, significantly more effective methods to provide medically relevant active compounds in sufficient quantity and purity for further investigations. With pressure fermentation, enormous cell densities can be achieved for both aerobic and anaerobic microbial systems, so that there is a chance of discovering new substances that have not been identified up to now due to their low concentration.

With conventional methods, already known substances are often rediscovered, as they are formed in relatively large quantities. Today, however, the interest is particularly focused on highly active compounds which are produced in small quantities only and are therefore hardly detectable analytically and have remained undiscovered so far. In addition, pressure fermentation can be used to cultivate filamentous or viscously growing producer strains which, due to their morphology or viscous by-products, can hardly be supplied with sufficient oxygen.