

Abstract of the Invention

Method and Apparatus for Making Porous Agarose Beads

The present invention relates to a method and apparatus for forming agarose or cored agarose beads. The process involves dissolving/melting the agarose in a suitable liquid, mixing it with a hydrophobic liquid to form an emulsion and maintaining that emulsion at a temperature equal to or greater than the melting point of the agarose, passing it through a static mixer to create agarose droplets and solidifying the agarose droplets in a second bath of hydrophobic liquid. The beads can then be washed and used or further processed to crosslink the agarose and/ or add various functionalities on to the agarose. Another method for solidifying the agarose droplets is by using a heat exchanger to cool the stream continuously after it exits the static mixer. A similar process is used for the "cored" beads except cores, preferably in bead form, are introduced to the agarose before it enters the first hydrophobic liquid so that the agarose forms a coating on the cores. A similar process with either agarose beads (made by this or another process) or cored agarose (made by this or another process) can be used to add multiple layers of agarose on to the existing beads. An apparatus for running the process is also disclosed.

Figure 1