

Infusion of High Molecular Weight Compounds

ALZET Osmotic Pumps can effectively deliver compounds of any molecular size, independently of their physical and chemical properties. Antibodies, hormones, liposomes, and steroids are all examples of high molecular weight compounds, which have successfully been infused using ALZET pumps. To understand why molecular weight is not an issue, it is necessary to understand how the pump works and how its components interact to deliver the drug solution.

The ALZET[®] pumps have three concentric layers. The outer semipermeable membrane allows water to pass into the osmotic layer (sodium chloride). This osmotic layer swells as it gets hydrated, thereby compressing the inner drug chamber housing the drug solution. The drug solution does not pass through a semipermeable membrane, but instead is infused through a hollow metal tube called the flow moderator. The inner diameter of the flow moderator is 500 microns, which is large enough to allow infusion of very large macromolecules commonly used in experimental research. For more information on how the pump works, see the following webpage:

<http://www.alzet.com/products/howdoesitwork.php>