The idea for an artificial lung develop seventeen years ago when Brack Hattler had two patients rushed into the ER with severe damage to their lungs, their only hope of survival was artificial lungs. Despite Hattler’s efforts both patients died a few days later. After that day Hattler’s has dedicated himself to developing an artificial lung.

This artificial lung would be targeted toward patients with acute respiratory distress syndrome, pneumonia, chronic lung disease, patients in need of organ transplants, and patients in intensive care units. The standard care today is the extracorporeal membrane oxygenators, which can be bulky and expensive, and causes life-threatening complications in more than half of its users. The IMO (Intravenous or Implantable Membrane Oxygenator) device has been designed to oxygenate the blood before it gets to the lungs, which allows the lung to rest and recover. The IMO device is to be only used for patients that have a chance to reverse their respiratory problems.

The IMO device is implanted through the vein in the leg, using percutaneous insertion (as done for angioplasty catheters and intra-aortic balloon pumps). The device is then positioned into the Vena Cava.

An advantage of the IMO device is that it allows the lungs to do very little work, therefore letting the lungs rest and heal. When compared to ventilators that make the lungs work twice as hard due to the constant expanding and compressing to oxygenate the blood. This device is expected to benefit up to 700,000 patients a year. These patients will range from people with serious respiratory damage, acute emphysema, and severe asthma to victims of drowning and fire accidents to chemical weapons. Clinical trials are expected to start next year in Europe and the commercial product may be available in 2004.

http://www.pitt.edu/~wfedersp/Brochure/IMO.html
http://www.popsci.com/medicine/01/09/17/heart/