For Immediate Release

CONTACT: Diana Yee
Director, Media Relations
510-428-3120
dyee@mail.cho.org

Children's Hospital Oakland Scientists First to Discover New Source for Harvesting Stem Cells

Placenta Stem Cells Offer New Hope for Curing Chronic Blood Disorders

June 19, 2009–Oakland, Calif. – A groundbreaking study conducted by Children's Hospital & Research Center Oakland is the first to reveal a new avenue for harvesting stem cells – from a woman's placenta, or more specifically the discarded placentas of healthy newborns. The study also finds there are far more stem cells in placentas than in umbilical cord blood, and they can be safely extracted for transplantation. Furthermore, it is highly likely that placental stem cells, like umbilical cord blood and bone marrow stem cells, can be used to cure chronic blood-related disorders such as sickle cell disease, thalassemia, and leukemia.

The study, led by Children's Hospital & Research Center Oakland scientists Frans Kuypers, PhD, and Vladimir Serikov, PhD, will be the feature story in the July 2009 issue of *Experimental Biology and Medicine*. The doctors and their team made the discoveries by harvesting term placentas from healthy women undergoing elective Cesarean sections. "Yes, the stem cells are there; yes, they are viable; and yes, we can get them out," declared Dr. Kuypers.

Stem cells are essentially blank cells that can be transformed into any type of cell such as a muscle cell, a brain cell, or a red blood cell. Using stem cells from umbilical cord blood, Children's Hospital Oakland physicians have cured more than 100 kids with chronic blood-related diseases through their sibling donor cord blood transplantation program, which began in 1997. However, according to the American Cancer Society, each year at least 16,000 people with serious blood- related disorders are not able to receive the bone marrow or cord blood transplant they need because they can't find a match.

Dr. Kuypers explained that even when a patient receives a cord blood transplant, there may not be enough stem cells in the umbilical cord to successfully treat their disorder. Placentas, however, contain several times more stem cells than umbilical cord blood. "The greater supply of stem cells in placentas will likely increase the chance that an HLA (human leukocyte antigen) matched unit of stem cells engrafts, making stem cell

transplants available to more people. The more stem cells, the bigger the chance of success," said Dr. Kuypers.

Drs. Kuypers and Serikov have also developed a patent-pending method that will allow placental stem cells to be safely harvested and made accessible for transplantation. The process involves freezing placentas in a way that allows them to later be defrosted and suffused with a compound that enables the extraction of viable stem cells. The method will make it possible for companies to gather, ship and store placentas in a central location. "We're looking for a partnership with industry to get placenta-derived stem cells in large quantities to the clinic," said Dr. Kuypers. He adds that much more research and grant funding are needed to explore the maximum potential of this latest discovery. He remains encouraged. "Someday, we will be able to save a lot more kids and adults from these horrific blood disorders."

###

About Children's Hospital & Research Center Oakland

Children's Hospital & Research Center Oakland is Northern California's only freestanding and independent children's hospital. Children's is the leader in many pediatric specialties including neonatology, cardiology, neurosurgery and intensive care. The hospital is a designated Level 1 pediatric trauma center and has the largest pediatric critical care facility in the region. Children's Hospital has 190 licensed beds, 201 hospital-based physicians in 30 specialties, more than 2,611 employees and an operating budget of $312 million. Children's research arm, Children's Hospital Oakland Research Institute, has about 300 staff members and an annual budget of more than $49 million. Primary research funding comes from the National Institutes of Health. The institute is a leader in translational research, bench discoveries to bedside applications, developing new vaccines for infectious diseases and discovering new treatment protocols for previously fatal or debilitating conditions such as cancers, sickle cell disease and thalassemia, diabetes, asthma, HIV/AIDS, pediatric obesity, nutritional deficiencies, birth defects, hemophilia and cystic fibrosis.