

Stanford



Karl Sylvester

Professor of Surgery (Pediatric Surgery) at the Stanford University Medical Center
Surgery - Pediatric Surgery

CLINICAL OFFICES

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ACADEMIC CONTACT INFORMATION

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Bio

CLINICAL FOCUS

- Surgery, Pediatric
- Pediatric Surgery
- Neonatal and Fetal Surgery

ACADEMIC APPOINTMENTS

- Professor - Med Center Line, Surgery - Pediatric Surgery
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Medical Director Pediatric Trauma Program, Packard Children's Hospital Stanford, (2008- present)
- Executive Director Program for Fetal and Maternal Health, Packard Children's Hospital Stanford, (2013- present)
- Associate Dean Maternal Child Health - Research, Stanford University School of Medicine, (2016- present)

PROFESSIONAL EDUCATION

- Fellowship: Yale University Pediatric Surgery Fellowship (2001) CT
- Residency: Hospital of the University of Pennsylvania General Surgery Residency (1999) PA

- Residency: Children's Hospital of Philadelphia Pediatric Surgery Residency (1997) PA
- Internship: Hospital of the University of Pennsylvania General Surgery Residency (1993) PA
- Board Certification: Pediatric Surgery, American Board of Surgery (2002)
- Medical Education: Jefferson Medical College (1992) PA

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Sylvester concurrently pursues three areas of related investigation. The general approach of his efforts are to combine the study of human disease samples and mouse models of human disease to pose new hypotheses and to test these hypotheses experimentally. The objective of Dr. Sylvester's studies is to derive a deeper understanding of human disease and to develop applications for possible new diagnostics and therapeutics.

In the laboratory the group studies the role of Wnt signaling in liver regeneration and response to injury. The Sylvester laboratory has demonstrated that Wnt and its signaling molecule beta-catenin have a strong influence over hepatocellular metabolism and resistance to oxidative stress. Ongoing studies to gain a deeper understanding of the mechanism by which Wnt and related pathways exert control over cellular metabolism, energy balance and redox balance are ongoing. Cellular energy and redox balance are central to the related processes of liver development, regeneration and tumorigenesis.

Dr. Sylvester has established a network of academic children's hospitals and investigators to study the human newborn diseases Necrotizing Enterocolitis and sepsis. The group has published several papers describing their novel findings of molecular indicators or biomarkers of disease. The group is seeking to establish both molecular indicators of disease as well as biochemical indicators that accurately identify infants most at risk for disease in order to provide clinical strategies to prevent disease onset. Molecules and pathways of interest that have been identified in human specimens are studied further in experimental models of disease to gain a deeper insight to the specific mechanisms of disease.

CLINICAL TRIALS

- Laparotomy vs. Drainage for Infants With Necrotizing Enterocolitis, Not Recruiting

Publications

PUBLICATIONS

- **Biomarker Discovery and Utility in Necrotizing Enterocolitis.** *Clinics in perinatology*
Goldstein, G. P., Sylvester, K. G.
2019; 46 (1): 1–17
- **Obstetric and neonatal outcomes in pregnancies complicated by fetal lung masses: does final histology matter?**
Anderson, J. N., Girsan, A. I., Hintz, S. R., El-Sayed, Y. Y., Davis, A. S., Barth, R. A., Halabi, S., Sylvester, K. G., Bruzoni, M., Blumenfeld, Y. J.
MOSBY-ELSEVIER.2019: S151
- **Congenital diaphragmatic hernia-associated neonatal morbidity and mortality based on TOTAL trial severity designation**
Boissiere, J. C., Anderson, J. N., Girsan, A. I., Hintz, S. R., El-Sayed, Y. Y., Van Meurs, K. P., Sylvester, K. G., Blumenfeld, Y. J.
MOSBY-ELSEVIER.2019: S667–S668
- **Predicting Pathology From Imaging in Children Undergoing Resection of Congenital Lung Lesions.** *The Journal of surgical research*
Narayan, R. R., Abadilla, N., Greenberg, D. R., Sylvester, K. G., Hintz, S. R., Barth, R. A., Bruzoni, M.
2018; 236: 68–73
- **Development of the necrotizing enterocolitis society registry and biorepository** *SEMINARS IN PEDIATRIC SURGERY*
Ralls, M. W., Gadepalli, S. K., Sylvester, K. G., Good, M.
2018; 27 (1): 25–28

- **Changing the paradigm of defining, detecting, and diagnosing NEC: Perspectives on Bell's stages and biomarkers for NEC** *SEMINARS IN PEDIATRIC SURGERY*
Gephart, S. M., Gordon, P. V., Penn, A. H., Gregory, K. E., Swanson, J. R., Maheshwari, A., Sylvester, K.
2018; 27 (1): 3–10
- **Prediction of Incident Hypertension Within the Next Year: Prospective Study Using Statewide Electronic Health Records and Machine Learning.** *Journal of medical Internet research*
Ye, C., Fu, T., Hao, S., Zhang, Y., Wang, O., Jin, B., Xia, M., Liu, M., Zhou, X., Wu, Q., Guo, Y., Zhu, C., Li, et al
2018; 20 (1): e22
- **Assessing Statewide All-Cause Future One-Year Mortality: Prospective Study With Implications for Quality of Life, Resource Utilization, and Medical Futility.** *Journal of medical Internet research*
Guo, Y., Zheng, G., Fu, T., Hao, S., Ye, C., Zheng, L., Liu, M., Xia, M., Jin, B., Zhu, C., Wang, O., Wu, Q., Culver, et al
2018; 20 (6): e10311
- **Gene expression network analysis in aneuploid human trophoblast progenitor cells (TBPC) reveals modular structures**
Leon-Martinez, D., Ling, X., Hao, S., Sylvester, K., Bianco, K.
MOSBY-ELSEVIER.2018: S163–S164
- **Point-of-Care Fecal Calprotectin Monitoring in Preterm Infants at Risk for Necrotizing Enterocolitis.** *The Journal of pediatrics*
Nakayuonyongasuk, W., Christofferson, M., Stevenson, D. K., Sylvester, K., Lee, H. C., Park, K. T.
2018
- **Advanced minimal access surgery in infants weighing less than 3kg: A single center experience.** *Journal of pediatric surgery*
Wall, J. K., Sinclair, T. J., Kethman, W., Williams, C., Albanese, C., Sylvester, K. G., Bruzoni, M.
2017
- **Acylcarnitine Profiles Reflect Metabolic Vulnerability for Necrotizing Enterocolitis in Newborns Born Premature.** *journal of pediatrics*
Sylvester, K. G., Kastenber, Z. J., Moss, R. L., Enns, G. M., Cowan, T. M., Shaw, G. M., Stevenson, D. K., Sinclair, T. J., Scharfe, C., Ryckman, K. K., Jelliffe-Pawlowski, L. L.
2017; 181: 80-85 e1
- **Prediction of neonatal respiratory distress in pregnancies complicated by fetal lung masses.** *Prenatal diagnosis*
Girsen, A. I., Hintz, S. R., Sammour, R., Naqvi, A., El-Sayed, Y. Y., Sherwin, K., Davis, A. S., Chock, V. Y., Barth, R. A., Rubesova, E., Sylvester, K. G., Chitkara, R., Blumenfeld, et al
2017
- **Involvement of prolyl isomerase PIN1 in the cell cycle progression and proliferation of hepatic oval cells** *PATHOLOGY RESEARCH AND PRACTICE*
Risal, P., Shrestha, N., Chand, L., Sylvester, K. G., Jeong, Y. J.
2017; 213 (4): 373-380
- **Defining and characterizing the critical transition state prior to the type 2 diabetes disease.** *PLoS one*
Jin, B., Liu, R., Hao, S., Li, Z., Zhu, C., Zhou, X., Chen, P., Fu, T., Hu, Z., Wu, Q., Liu, W., Liu, D., Yu, et al
2017; 12 (7): e0180937
- **Role of the Wnt/beta-Catenin Pathway in the Pathogenesis of Alcoholic Liver Disease** *CURRENT MOLECULAR PHARMACOLOGY*
Behari, J., Sylvester, K. G.
2017; 10 (3): 186–94
- **Identification of independent metabolic risk groups for necrotizing enterocolitis through machine learning**
Oltman, S. P., Rogers, E. E., Pantell, M., Baer, R. J., Rand, L., Ryckman, K. K., Kastenber, Z., Sylvester, K., Jelliffe-Pawlowski, L.
MOSBY-ELSEVIER.2017: S372
- **The Effect of Level of Care on Gastroschisis Outcomes.** *The Journal of pediatrics*
Apfeld, J. C., Kastenber, Z. J., Sylvester, K. G., Lee, H. C.
2017; 190: 79–84.e1
- **Heme Oxygenase Activity and Heme Binding in a Neonatal Mouse Model** *NEONATOLOGY*
Kourula, S., Ang, J., Zhao, H., Kalish, F., Vandenabeele, P., Sylvester, K. G., Wong, R. J., Stevenson, D. K.
2017; 112 (4): 376–83

- **Unique Molecular Patterns Uncovered in Kawasaki Disease Patients with Elevated Serum Gamma Glutamyl Transferase Levels: Implications for Intravenous Immunoglobulin Responsiveness** *PLOS ONE*
Wang, Y., Li, Z., Hu, G., Hao, S., Deng, X., Huang, M., Ren, M., Jiang, X., Kanegaye, J. T., Ha, K., Lee, J., Li, X., Jiang, et al
2016; 11 (12)
- **CK2 alpha/CSNK2A1 Phosphorylates SIRT6 and Is Involved in the Progression of Breast Carcinoma and Predicts Shorter Survival of Diagnosed Patients** *AMERICAN JOURNAL OF PATHOLOGY*
Bae, J. S., Park, S., Jamiyandorj, U., Kim, K. M., Noh, S. J., Kim, J. R., Park, H. J., Kwon, K. S., Jung, S. H., Park, H. S., Park, B., Lee, H., Moon, et al
2016; 186 (12): 3297-3315
- **Mapping the Fetomaternal Peripheral Immune System at Term Pregnancy.** *Journal of immunology*
Fragiadakis, G. K., Baca, Q. J., Gherardini, P. F., Ganio, E. A., Gaudilliere, D. K., Tingle, M., Lancero, H. L., McNeil, L. S., Spitzer, M. H., Wong, R. J., Shaw, G. M., Darmstadt, G. L., Sylvester, et al
2016
- **Necroptosis is Associated with Development Dependent Enterocyte Death in a Mouse Model of Intestinal Injury and Human Necrotizing Enterocolitis**
Sinclair, T., Tao, G., Liu, B., Zhang, R., Lu, C., Sylvester, K. G.
ELSEVIER SCIENCE INC.2016: E157–E158
- **Advanced Minimal Access Surgery in Infants Weighing Less Than 3 Kilograms: A Single Center Experience**
Sinclair, T., Wall, J. K., Albanese, C., Sylvester, K. G., Bruzoni, M.
ELSEVIER SCIENCE INC.2016: E153
- **A Multi-Omics Analysis of Human Nucleus-Coded Mitochondrial Genes with Mouse Extraembryonic Tissue/Placenta Phenotypes: Implications in Mitochondria-Mediated Maternal and Fetal Complications.**
Hu, G., Chen, R., Deng, X., Li, Z., Mo, L., Hao, S., Shaw, G. M., Stevenson, D. K., Cohen, H. J., Jiang, X., Sylvester, K. G., Ling, X. B.
SAGE PUBLICATIONS INC.2016: 320A
- **Prospective stratification of patients at risk for emergency department revisit: resource utilization and population management strategy implications.** *BMC emergency medicine*
Jin, B., Zhao, Y., Hao, S., Shin, A. Y., Wang, Y., Zhu, C., Hu, Z., Fu, C., Ji, J., Wang, Y., Zhao, Y., Jiang, Y., Dai, et al
2016; 16 (1): 10-?
- **NLP based congestive heart failure case finding: A prospective analysis on statewide electronic medical records.** *International journal of medical informatics*
Wang, Y., Luo, J., Hao, S., Xu, H., Shin, A. Y., Jin, B., Liu, R., Deng, X., Wang, L., Zheng, L., Zhao, Y., Zhu, C., Hu, et al
2015; 84 (12): 1039-1047
- **Infant, maternal, and geographic factors influencing gastroschisis related mortality in Zimbabwe** *SURGERY*
Apfeld, J. C., Wren, S. M., Macheke, N., Mbuwayesango, B. A., Bruzoni, M., Sylvester, K. G., Kastenber, Z. J.
2015; 158 (6): 1476-1481
- **Infant, maternal, and geographic factors influencing gastroschisis related mortality in Zimbabwe.** *Surgery*
Apfeld, J. C., Wren, S. M., Macheke, N., Mbuwayesango, B. A., Bruzoni, M., Sylvester, K. G., Kastenber, Z. J.
2015; 158 (6): 1475-1480
- **Augmented Wnt Signaling as a Therapeutic Tool to Prevent Ischemia/Reperfusion Injury in Liver: Preclinical Studies in a Mouse Model** *LIVER TRANSPLANTATION*
Liu, B., Zhang, R., Tao, G., Lehwald, N. C., Liu, B., Koh, Y., Sylvester, K. G.
2015; 21 (12): 1533-1542
- **Development, Validation and Deployment of a Real Time 30 Day Hospital Readmission Risk Assessment Tool in the Maine Healthcare Information Exchange** *PLOS ONE*
Hao, S., Wang, Y., Jin, B., Shin, A. Y., Zhu, C., Huang, M., Zheng, L., Luo, J., Hu, Z., Fu, C., Dai, D., Wang, Y., Culver, et al
2015; 10 (10)
- **Serological Targeted Analysis of an ITIH4 Peptide Isoform: A Preterm Birth Biomarker and Its Associated SNP Implications** *JOURNAL OF GENETICS AND GENOMICS*
Tan, Z., Hu, Z., Cai, E. Y., Alev, C., Yang, T., Li, Z., Sung, J., El-Sayed, Y. Y., Shaw, G. M., Stevenson, D. K., Butte, A. J., Sheng, G., Sylvester, et al
2015; 42 (9): 507-510
- **A robust estimation model for surgery durations with temporal, operational, and surgery team effects** *HEALTH CARE MANAGEMENT SCIENCE*

- Kayis, E., Khaniev, T. T., Suermondt, J., Sylvester, K.
2015; 18 (3): 222-233
- **Online Prediction of Health Care Utilization in the Next Six Months Based on Electronic Health Record Information: A Cohort and Validation Study** *JOURNAL OF MEDICAL INTERNET RESEARCH*
Hu, Z., Hao, S., Jin, B., Shin, A. Y., Zhu, C., Huang, M., Wang, Y., Zheng, L., Dai, D., Culver, D. S., Alfreds, S. T., Rogow, T., Stearns, et al
2015; 17 (9)
 - **Impaired Activity of Blood Coagulant Factor XIII in Patients with Necrotizing Enterocolitis** *SCIENTIFIC REPORTS*
Tao, G., Liu, B., Zhang, R., Liu, G., Abdullah, F., Harris, M. C., Brandt, M. L., Ehrenkranz, R. A., Bowers, C., Martin, C. R., Moss, R. L., Sylvester, K. G.
2015; 5
 - **Urine biomarkers for necrotizing enterocolitis** *PEDIATRIC SURGERY INTERNATIONAL*
Sylvester, K. G., Moss, R. L.
2015; 31 (5): 421-429
 - **CK2 alpha phosphorylates DBC1 and is involved in the progression of gastric carcinoma and predicts poor survival of gastric carcinoma patients** *INTERNATIONAL JOURNAL OF CANCER*
Bae, J. S., Park, S., Kim, K. M., Kwon, K. S., Kim, C. Y., Lee, H. K., Park, B., Park, H. S., Lee, H., Moon, W. S., Chung, M. J., Sylvester, K. G., Jang, et al
2015; 136 (4): 797-809
 - **Effect of deregionalized care on mortality in very low-birth-weight infants with necrotizing enterocolitis.** *JAMA pediatrics*
Kastenberg, Z. J., Lee, H. C., Profit, J., Gould, J. B., Sylvester, K. G.
2015; 169 (1): 26-32
 - **Risk Prediction of Stroke: A Prospective Statewide Study on Patients in Maine**
Zheng, L., Wang, V., Hao, S., Sylvester, K. G., Ling, X. B., Jin, B., Zhu, C., Jin, H., Dai, D., Xu, H., Stearns, F., Widen, E., Shin, et al
IEEE.2015: 853-855
 - **Pilot Application of Magnetic Nanoparticle-Based Biosensor for Necrotizing Enterocolitis.** *Journal of proteomics & bioinformatics*
Kim, D., Fu, C., Ling, X. B., Hu, Z., Tao, G., Zhao, Y., Kastenberg, Z. J., Sylvester, K. G., Wang, S. X.
2015
 - **Development, Validation and Deployment of a Real Time 30 Day Hospital Readmission Risk Assessment Tool in the Maine Healthcare Information Exchange.** *PloS one*
Hao, S., Wang, Y., Jin, B., Shin, A. Y., Zhu, C., Huang, M., Zheng, L., Luo, J., Hu, Z., Fu, C., Dai, D., Wang, Y., Culver, et al
2015; 10 (10)
 - **Impaired Activity of Blood Coagulant Factor XIII in Patients with Necrotizing Enterocolitis.** *Scientific reports*
Tao, G., Liu, B., Zhang, R., Liu, G., Abdullah, F., Harris, M. C., Brandt, M. L., Ehrenkranz, R. A., Bowers, C., Martin, C. R., Moss, R. L., Sylvester, K. G.
2015; 5: 13119-?
 - **Hippo/YAP, β -catenin, and the cancer cell: a "ménage à trois" in hepatoblastoma.** *Gastroenterology*
Sylvester, K. G., Colnot, S.
2014; 147 (3): 562-565
 - **A novel urine peptide biomarker-based algorithm for the prognosis of necrotising enterocolitis in human infants.** *Gut*
Sylvester, K. G., Ling, X. B., Liu, G. Y., Kastenberg, Z. J., Ji, J., Hu, Z., Peng, S., Lau, K., Abdullah, F., Brandt, M. L., Ehrenkranz, R. A., Harris, M. C., Lee, et al
2014; 63 (8): 1284-1292
 - **Heterotaxy syndromes and abnormal bowel rotation.** *Pediatric radiology*
Newman, B., Koppolu, R., Murphy, D., Sylvester, K.
2014; 44 (5): 542-551
 - **Urine protein biomarkers for the diagnosis and prognosis of necrotizing enterocolitis in infants.** *journal of pediatrics*
Sylvester, K. G., Ling, X. B., Liu, G. Y., Kastenberg, Z. J., Ji, J., Hu, Z., Wu, S., Peng, S., Abdullah, F., Brandt, M. L., Ehrenkranz, R. A., Harris, M. C., Lee, et al
2014; 164 (3): 607-12 e1 7
 - **Urine protein biomarkers for the diagnosis and prognosis of necrotizing enterocolitis in infants.** *journal of pediatrics*
Sylvester, K. G., Ling, X. B., Liu, G. Y., Kastenberg, Z. J., Ji, J., Hu, Z., Wu, S., Peng, S., Abdullah, F., Brandt, M. L., Ehrenkranz, R. A., Harris, M. C., Lee, et al
2014; 164 (3): 607-612 e7

- **A data-driven algorithm integrating clinical and laboratory features for the diagnosis and prognosis of necrotizing enterocolitis.** *PloS one*
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2014; 9 (2)
- **Pilot Application of Magnetic Nanoparticle-Based Biosensor for Necrotizing Enterocolitis** *Journal of Proteomics and Bioinformatics*
Kim, D., Fu, C., Ling, X. B., Hu, Z., Tao, G., Zhao, Y., Kastenberg, Z. J., Sylvester, K. G., Wang, S. X.
2014
- **Risk prediction of emergency department revisit 30 days post discharge: a prospective study.** *PloS one*
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- **Risk prediction of emergency department revisit 30 days post discharge: a prospective study.** *PloS one*
Hao, S., Jin, B., Shin, A. Y., Zhao, Y., Zhu, C., Li, Z., Hu, Z., Fu, C., Ji, J., Wang, Y., Zhao, Y., Dai, D., Culver, et al
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- **A data-driven algorithm integrating clinical and laboratory features for the diagnosis and prognosis of necrotizing enterocolitis.** *PloS one*
Ji, J., Ling, X. B., Zhao, Y., Hu, Z., Zheng, X., Xu, Z., Wen, Q., Kastenberg, Z. J., Li, P., Abdullah, F., Brandt, M. L., Ehrenkranz, R. A., Harris, et al
2014; 9 (2)
- **Wnt/ β -Catenin Signaling Protects Mouse Liver against Oxidative Stress-induced Apoptosis through the Inhibition of Forkhead Transcription Factor FoxO3.** *journal of biological chemistry*
Tao, G., Lehwald, N., Jang, K. Y., Baek, J., Xu, B., Omary, M. B., Sylvester, K. G.
2013; 288 (24): 17214-17224
- **Heme oxygenase-1 deficiency promotes the development of necrotizing enterocolitis-like intestinal injury in a newborn mouse model.** *American journal of physiology. Gastrointestinal and liver physiology*
Schulz, S., Wong, R. J., Jang, K. Y., Kalish, F., Chisholm, K. M., Zhao, H., Vreman, H. J., Sylvester, K. G., Stevenson, D. K.
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- **WNT/ β -CATENIN AND MITOCHONDRIAL FUNCTION IN RESPONSE TO METABOLIC STRESS AND ALD** *36th Annual Scientific Meeting of the Research-Society-on-Alcoholism*
Liu, B., Zhang, R., Tao, G., Lehwald, N. C., Liu, B., Sylvester, K. G.
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- **The surgical management of necrotizing enterocolitis.** *Clinics in perinatology*
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- **SIRT1 and c-Myc Promote Liver Tumor Cell Survival and Predict Poor Survival of Human Hepatocellular Carcinomas** *PLOS ONE*
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2012; 143 (3): 754-764
- **Improving prediction of surgery duration using operational and temporal factors.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
Kayis, E., Wang, H., Patel, M., Gonzalez, T., Jain, S., Ramamurthi, R. J., Santos, C., Singhal, S., Suermondt, J., Sylvester, K.
2012; 2012: 456-462
- **HEME OXYGENASE-1 DEFICIENCY PROMOTES NECROTIZING ENTEROCOLITIS DEVELOPMENT IN A MURINE MOUSE MODEL** *Western Regional Meeting of the American-Federation-for-Medical-Research*
Schulz, S., Jang, K., Kalish, F. S., Zhao, H., Vreman, H. J., Sylvester, K. S., Wong, R. J., Stevenson, D. K.
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- **Notch signaling inhibits hepatocellular carcinoma following inactivation of the RB pathway** *JOURNAL OF EXPERIMENTAL MEDICINE*
Viatur, P., Ehmer, U., Saddic, L. A., Dorrell, C., Andersen, J. B., Lin, C., Zmoos, A., Mazur, P. K., Schaffer, B. E., Ostermeier, A., Vogel, H., Sylvester, K. G., Thorgeirsson, et al

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- **Wnt-beta-catenin Signaling Protects Against Hepatic Ischemia and Reperfusion Injury in Mice** *GASTROENTEROLOGY*
Lehwald, N., Tao, G., Jang, K. Y., Sorkin, M., Knoefel, W. T., Sylvester, K. G.
2011; 141 (2): 707-U417
- **Intestinal involvement during 3,5-diethoxycarbonyl-1,4-dihydrocollidine-induced chronic liver injury in a mouse model** *JOURNAL OF PEDIATRIC SURGERY*
Sukhotnik, I., Kuscuoglu, U., Altindag, B., Tao, G., Lehwald, N., Sylvester, K. G.
2011; 46 (8): 1495-1502
- **Risk Factors for Parenteral Nutrition-associated Liver Disease Following Surgical Therapy for Necrotizing Enterocolitis** *JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION*
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- **ROLE OF HEME OXYGENASE IN A MURINE MODEL OF EARLY NECROTIZING ENTEROCOLITIS** *Western Regional Meeting of the American-Federation-for-Medical-Research*
Schulz-Geske, S., Kalish, F. S., Jang, K. Y., Zhao, H., Huey, M., Vreman, H. J., Sylvester, K. S., Wong, R. J., Stevenson, D. K.
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Duro, D., Kalish, L. A., Johnston, P., Jaksic, T., Mccarthy, M., Martin, C., Dunn, J. C., Brandt, M., Nobuhara, K. K., Sylvester, K. G., Moss, R. L., Duggan, C.
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Ghole, S. A., Kuscuoglu, U., Sylvester, K.
ELSEVIER SCIENCE INC.2008: S53
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2008; 47 (2): 706-718
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2007; 133 (5): 1579-1591
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