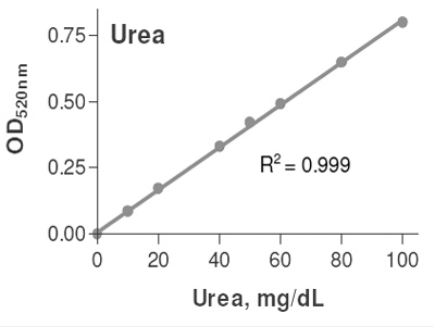
Urea Assay Kit

Catalog # KA1652 Size 1 Kit

Applications



The standard curve is for the purpose of illustration only and should not be used to calculate unknowns. A standard curve should be generated each time the assay is performed.

Specification

Product Description	Urea Assay Kit is a quantitative colorimetric urea determination.
Suitable Sample	Bronchoalveolar Lavage (BAL), Cell/Tissue Culture, Milk, Plasma, Serum, Urine and Environmental Samples (waste water, soil etc.)
Sample Volume	For 96-well Plate: 5 uL [Serum and plasma samples can be assayed directly (n = 1). Urine samples s hould be diluted 50-fold in distilled water prior to assay (n = 50).] or 50 uL [For low urea samples (< 5 mg/dL), e.g. tissue/cell extract, BAL etc or for culture medium containing phenol red] For Cuvettes: 20 uL or for low urea samples, use 200 uL instead of 20 uL.
Detection Method	Colorimetric
Assay Type	Quantitative
Calibration Range	0.08 to 100 mg/dL (13 uM to 17 mM)
Limit of Detection	0.08 mg/dL (13 uM)
Regulation Status	For research use only (RUO)
Quality Control Testing	Standard Curve The standard curve is for the purpose of illustration only and should not be used to calculate unknown s. A standard curve should be generated each time the assay is performed.

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Storage Instruction	Store the kit at -20°C. For best results, store the components as described in the protocol. Avoid repeated freezing and thawing.

Applications

- Functional Study

Publication Reference

- Liver-on-Chip: An Analysis of Liver Cell Types, Seeding Parameters, and Liver Function Assays.

  Tenzin Choden Gyeltshen, Dimple Sajin, Hang T Ta

  Micromachines (Basel) 2026 6; 17(7):0.

- Human assembloids recapitulate periportal liver tissue in vitro.

  Lei Yuan, Sagarika Dawka, Yohan Kim, Anke Liebert, Fabian Rost, Robert Arnes-Benito, Franziska Baenke, Christina Götz, David Long Hin Tsang, Andrea Schuhmann, Anna Shevchenko, Roberta Rezende de Castro, Seunghee Kim, Aleksandra Sljukic, Anna M Dowbaj, Andrej Shevchenko, Daniel Seehofer, Dongho Choi, Georg Damm, Daniel E Stange, Meritxell Huch.

  Nature 2025 Dec; 0:0.

  Application: Quant, Human, Cell culture supernatants

- Expansion of human hepatocytes and their application in three-dimensional culture and genetic manipulation.

  Kun Zhang, Xiang Yuan, Shuang Lu, Yajing Shu, Chenhua Wang, Jin Cen, Baihua Wu, Lijian Hui.

  Nature Protocols 2025 Jul; 0:0.

  Application: Quant, Human, Proliferating human hepatocytes (ProliHHs)

- Enhanced hepatotoxicity assessment through encapsulated HepG2 spheroids in gelatin hydrogel matrices. Bridging the gap from 2D to 3D culture.

  Se Yeon Park, Won-Gun Koh, Hyun Jong Lee.

  Eur J Pharm Biopharm. 2024 Sep:202:114417. doi: 10.1016/j.ejpb.2024.114417. Epub 2024 Jul 14. 2024 Sep; 202:114417.

  Application: Quant, Human, HepG2 cells

- Effects of Lung Inflammation and Injury on Pulmonary Tissue Penetration of Meropenem and Vancomycin in a Model of Unilateral Lung Injury.

  Johannes Geilen, Matthias Kainz, Bernhard Zapletal, Thomas Schweiger, Walter Jäger, Alexandra Maier-Salamon, Markus Zeitlinger, Tanja Stamm, Valentin Ritschl, Silvana Geleff, Marcus J Schultz, Edda Tschernko.

  International Journal of Antimicrobial Agents 2024 Apr; [Epub]:0.

  Application: Quant, Human, Serum

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- Preclinical efficacy and safety of encapsulated proliferating human hepatocyte organoids in treating liver failure.

  Xiang Yuan., Jingqi Wu., Zhen Sun., Jin Cen., Yajing Shu., Chenhua Wang., Hong Li., Dongni Lin., Kun Zhang., Baihua Wu., Anil Dhawan., Ludi Zhang., Lijian Hui.

  Cell Stem Cell 2024 Apr; 31(4):484.

  Application: Liver Organoid Therapy, Mouse, Liver Organoids

- Pharmacokinetics of isavuconazole at different target sites in healthy volunteers after single and multiple intravenous infusions.

  Felix Bergmann, Michael Wölfl-Duchek, Anselm Jorda, Valentin Al Jalali, Amelie Leutzendorff, Maria Sanz-Codina, Daniela Gompelmann, Karin Trimmel, Maria Weber, Sabine Eberl, Wisse Van Os, Iris K Minichmayr, Birgit Reiter, Thomas Stimpfl, Marco Idzko, Markus Zeitlinger.

  Journal of Antimicrobial Chemotherapy 2024 May; 79(5):1169.

  Application: Quant, Human, Plasma, Bronchoalveolar lavage fluid

- LINC MIR503HG Controls SC-β Cell Differentiation and Insulin Production by Targeting CDH1 and HES1.

  Yang Xu, Susu Mao, Haowen Fan, Jian Wan, Lin Wang, Mingyu Zhang, Shajun Zhu, Jin Yuan, Yuhua Lu, Zhiwei Wang, Bin Yu, Zhaoyan Jiang, Yan Huang.

  Advanced Science (Weinheim, Baden-Württemberg, Germany) 2024 Apr; 11(13):e2305631.

  Application: Quant, Human, Human Urea

- Quantification of clesrovimab, an investigational, half-life extended, anti-respiratory syncytial virus protein F human monoclonal antibody in the nasal epithelial lining fluid of healthy adults.

  Jia Yao Phuah, Brian M Maas, Aimin Tang, Ying Zhang, Luzelena Caro, Radha A Railkar, Michael D Swanson, Yu Cao, Hankun Li, Brad Roadcap, Andrew P Catchpole, Antonios O Aliprantis, Kalpit A Vora.

  Biomedicine & Pharmacotherapy 2023 Dec; 169:115851.

  Application: Quant, Human, Nasal epithelial lining fluid

- Antimicrobial Drug Penetration is Enhanced by Lung Tissue Inflammation and Injury.

  Johannes Geilen, Matthias Kainz, Bernhard Zapletal, Asami Naka, Johanna Tichy, Walter Jäger, Michaela Böhmdorfer, Markus Zeitlinger, Marcus J Schultz, Tanja Stamm, Valentin Ritschl, Silvana Geleff, Edda Tschernko.

  American Journal of Respiratory and Critical Care Medicine 2024 Apr; 209(7):829.

  Application: Quant, Pig, Blood, Bronchoalveolar lavage fluid (BALF)

- Individual meropenem epithelial lining fluid and plasma PK/PD target attainment.

  Roxane Rohani, Paul R. Yarnold, Marc H. Scheetz, Michael N. Neely, Mengjia Kang, Helen K. Donnelly, Kay Dedicatoria, Sophie H. Nozick, Rachel L. Medernach, Alan R. Hauser, Egon A. Ozer, Estefani Diaz, Alexander V. Misharin, Richard G Wunderink, Nathaniel J. Rhodes.

  Antimicrobial Agents and Chemotherapy 2023 Dec; 67(12):e0072723.

  Application: Quant, Human, Human plasma

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- The efficient generation of functional human hepatocytes from chemically induced pluripotent stem cells.

  Yun Lv, Ziyan Rao, Lulu Liu, Jun Jia, Chenyang Wu, Jun Xu, Yuanyuan Du, Yinan Liu, Bei Liu, Jihang Shi, Guangya Li, Dongyu Zhao, Hongkui Deng.

  Cell proliferation 2024 Feb; 57(2):e13540.

  Application: Quant, Human, iPSCs, hCiPS, hiHEPs, hiHPCs, Primary human hepatocytes

- Adenoviral Transfer of Human Aquaporin-8 Gene to Mouse Liver Improves Ammonia-Derived Ureagenesis.

  Alejo M Capiglioni, Maria C Capitani, Julieta Marrone, Raul A Marinelli

  Cells 2023 Jun; 12(11):0.

- Preoperative Function Assessment of Ex Vivo Kidneys with Supervised Machine Learning Based on Blood and Urine Markers Measured during Normothermic Machine Perfusion.

  Wenke Markgraf, Hagen Malberg.

  Biomedicines 2022 Nov; 10(12):3055.

  Application: Blood collect, ELISA, Pig, Pig kidney blood

- Setup of human liver-chips integrating 3D models, microwells and a standardized microfluidic platform as proof-of-concept study to support drug evaluation.

  Benoit Cox, Patrick Barton, Reiner Class, Hannah Coxhead, Claude Delatour, Eric Gillent, Jamie Henshall, Emre M Isin, Lloyd King, Jean-Pierre Valentin.

  Biomaterials and Biosystems 2023 May; 7:100054.

  Application: Quant, Human, Human liver spheroid

- Microdosing as a Potential Tool to Enhance Clinical Development of Novel Antibiotics: A Tissue and Plasma PK Feasibility Study with Ciprofloxacin.

  Zoe Oesterreicher, Sabine Eberl, Beatrix Wulkersdorfer, Peter Matzneller, Claudia Eder, Esther van Duijn, Wouter H. J. Vaes, Birgit Reiter, Thomas Stimpfl, Walter Jäger, Alina Nussbaumer-Proell, Daniela Marhofer, Peter Marhofer, Oliver Langer, Markus Zeitlinger.

  Clinical Pharmacokinetics 2022 May; 61(5):697.

  Application: Quan, Human, Plasma

- Molecular modelling of the FOXO4-TP53 interaction to design senolytic peptides for the elimination of senescent cancer cells.

  Hillary H Le, Suleyman S Cinaroglu, Elise C Manalo, Aysegul Ors, Michelle M Gomes, Burcin Duan Sahbaz, Karla Bonic, Carlos A Origel Marmolejo, Arnaud Quentel, Justin S Plaut, Taryn E Kawashima, E Sila Ozdemir, Sanjay V Malhotra, Yavuz Ahiska, Ugur Sezerman, Gunseli Bayram Akcapinar, Joshua C Saldivar, Emel Timucin, Jared M Fischer

  EBioMedicine 2021 Nov; 73:103646.

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- Extracellular Matrix Optimization for Enhanced Physiological Relevance in Hepatic Tissue-Chips.

  Abdul Rahim Chethikkattuveli Salih, Kinam Hyun, Arun Asif, Afaque Manzoor Soomro, Hafiz-Muhammad-Umer Farooqi, Young Su Kim, Kyung Hwan Kim, Jae Wook Lee, Dongeun Huh, Kyung Hyun Choi

  Polymers (Basel) 2021 9; 13(17):0.

- Enhanced ammonia detoxification to urea in hepatocytes transduced with human aquaporin-8 gene.

  Alejo M Capiglioni, Gabriela L Muller, Julieta Marrone, Maria de Lujan Alvarez, Raúl A Marinelli.

  Biotechnology and Bioengineering 2021 Nov; 118(11):4331.

  Application: Quant, Rat, Rat hepatocytes

- Structural dynamics of inosine triphosphate pyrophosphatase (ITPA) protein and two clinically relevant mutants: molecular dynamics simulations.

  Yao Houndonougbo, Bethany Pugh, Kandise VanWormer, Caitlin April, Nicholas Burgis

  J Biomol Struct Dyn 2021 Mar; 39(4):1236-1247.

- Inhibition of neprilysin with sacubitril without RAS blockage aggravates renal disease in Dahl SS rats.

  Iuliia Polina, Morgan J Spicer, Mark Domondon, Ryan S Schibalski, Elizaveta Sarsenova, Regina F Sultanova, Daria V Ilatovskaya.

  Renal Failure 2021 Dec; 43(1):315.

  Application: Quant, Rat, Rat plasma

- Real-time monitoring of liver fibrosis through embedded sensors in a microphysiological system.

  Hafiz Muhammad Umer Farooqi, Bohye Kang, Muhammad Asad Ullah Khalid, Abdul Rahim Chethikkattuveli Salih, Kinam Hyun, Sung Hyuk Park, Dongeun Huh, Kyung Hyun Choi.

  Nano Convergence 2021 Feb; 8(1):3.

  Application: Quant, Human, Human hepatocytes

- Is It Possible to Store Spotted Wolffish (Anarhichas Minor) Sperm by Refrigeration?

  W A González-López, D M Patel, N Duncan, J Beirão.

  Fish Physiology and Biochemistry 2021 Jun; 47(3):725.

  Application: Quant, Fish, Fish seminal plasma, Fish urine samples

- Assembly and Function of a Bioengineered Human Liver for Transplantation Generated Solely From Induced Pluripotent Stem Cells.

  Kazuki Takeishi, Alexandra Collin de l'Hortet, Yang Wang, Kan Handa, Jorge Guzman-Lepe, Kentaro Matsubara, Kazutoyo Morita, Sae Jang, Nils Haep, Rodrigo M Florentino, Fangchao Yuan, Ken Fukumitsu, Kimimasa Tobita, Wendell Sun, Jonathan Franks, Evan R Delgado, Erik M Shapiro, Nicolas A Fraunhoffer, Andrew W Duncan, Hiroshi Yagi, Tomoji Mashimo, Ira J Fox, Alejandro Soto-Gutierrez.

  Cell Reports 2020 Jun; 31(9):107711.

  Application: Func, Human, iPSC-Heps cells

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- The Differential Effects of Low Dose Sacubitril and/or Valsartan on Renal Disease in Salt-Sensitive Hypertension.

  Iuliia Polina, Mark Domondon, Rebecca Fox, Anastasia Sudarikova, Miguel Troncoso, Valeriia Vasileva, Yuliia Kashyrina, Monika Beck Gooz, Ryan Schibalski, Kristine Y DeLeon-Pennell, Wayne R Fitzgibbon, Daria V Ilatovskaya.

  American Journal of Physiology. Renal Physiology 2020 Jul; 319(1):F63.

  Application: Quant, Rat, Rat plasma

- Data of ureagenesis from ammonia, glutamine and alanine, and mitochondrial aquaporin-8 expression in thioacetamide-treated hepatocytes.

  Alejo M Capiglioni, María de Luján Alvarez, Raúl A Marinelli.

  Data in Brief 2020 Apr; 30:105632.

  Application: Func, Rat, Supernatant from hepatocytes culture medium

- Innate immunity ascertained from blood and tracheal aspirates of preterm newborn provides new clues for assessing bronchopulmonary dysplasia.

  Zaramella P, Munari F, Stocchero M, Molon B, Nardo D, Priante E, Tosato F, Bonadies L, Viola A, Baraldi E.

  PLoS One 2019 Sep; 14(9):e0221206.

  Application: Func, Quant, Human, Human serum

- A small molecule Hedgehog agonist HhAg1.5 mediated reprogramming breaks the quiescence of noninjured liver stem cells for rescuing liver failure.

  Abhisek Mitra, Jun Yan, Liangfang Zhang, Shulin Li

  Transl Res 2019 Mar; 205:44-50.

- In Vitro Expansion of Primary Human Hepatocytes with Efficient Liver Repopulation Capacity.

  Zhang K, Zhang L, Liu W, Ma X, Cen J, Sun Z, Wang C, Feng S, Zhang Z, Yue L, Sun L, Zhu Z, Chen X, Feng A, Wu J, Jiang Z, Li P, Cheng X, Gao D, Peng L, Hui L.

  Cell Stem Cell 2018 Dec; 23(6):806.

  Application: Func, Human, Supernatants collected from hepatocytes culture medium

- Differentiation of human-induced pluripotent stem cell under flow conditions to mature hepatocytes for liver tissue engineering.

  Starokozhko V, Hemmingsen M, Larsen L, Mohanty S, Merema M, Pimentel RC, Wolff A, Emnéus J, Aspegren A, Groothuis G, Dufva M.

  Journal of Tissue Engineering and Regenerative Medicine 2018 May; 12(5):1273.

  Application: Func, Human, Human liver

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- Characteristics of Infection Immunity Regulated by Toxoplasma gondii to Maintain Chronic Infection in the Brain.

  Hwang YS, Shin JH, Yang JP, Jung BK, Lee SH, Shin EH.

  Frontiers in Immunology 2018 Feb; 9:158.

  Application: Quant, Mouse, BV-2 microglia cells

- Modulating the Substrate Stiffness to Manipulate Differentiation of Resident Liver Stem Cells and to Improve the Differentiation State of Hepatocytes.

  Cozzolino AM, Noce V, Battistelli C, Marchetti A, Grassi G, Cicchini C, Tripodi M, Amicone L.

  Stem Cells International 2016 Jan; 2016:5481493.

  Application: Func, Resident, Culture supernatants of RLSCs

- Macrophage PTEN Regulates Expression and Secretion of Arginase I Modulating Innate and Adaptive Immune Responses.

  Sahin E, Haubenwallner S, Kuttke M, Kollmann I, Halfmann A, Dohnal AB, Chen L, Cheng P, Hoesel B, Einwallner E, Brunner J, Kral JB, Schrottmaier WC, Thell K, Saferding V, Bluml S, Schabbauer G.

  The Journal of Immunology 2014 Aug; 193(4):1717.

  Application: Func, Mouse, Peritoneal lavage supernatants, Spleen, Lung homogenates, Plasma

- Circulating adipocyte fatty acid binding protein is increased in chronic and acute renal dysfunction.

  Ebert T, Hopf LM, Wurst U, Bachmann A, Kralisch S, Lossner U, Platz M, Kratzsch J, Stolzenburg JU, Dietel A, Grisk O, Beige J, Anders M, Bast I, Kloting N, Bluher M, Stumvoll M, Fasshauer M.

  Nutrition, Metabolism, and Cardiovascular Diseases 2014 Sep; 24(9):1027.

  Application: Func, Rat, Plasma

- Inducible Arginase 1 Deficiency in Mice Leads to Hyperargininemia and Altered Amino Acid Metabolism.

  Sin YY, Ballantyne LL, Mukherjee K, St Amand T, Kyriakopoulou L, Schulze A, Funk CD.

  PLoS One 2013 Nov; 8(11):e80001.

  Application: Func, Mouse, Hepatocytes

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