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Articles of Interest



Stabilization of Cyclin-Dependent Kinase 4 by Methionyl-tRNA Synthetase in p16^{INK4a}-Negative Cancer

Nam Hoon Kwon, Jin Young Lee, Ye-lim Ryu, Chanhee Kim, Jiwon Kong, Seongeun Oh, Beom Sik Kang, Hye Won Ahn, Sung Gwe Ahn, Joon Jeong, t al.

ACS Pharmacol. Transl. Sci., Article ASAP **DOI:** 10.1021/acsptsci.8b00001 Publication Date (Web): April 24, 2018 **Abstract:** Although abnormal increases in the level or activity of cyclin-dependent kinase 4 (CDK4) occur frequently in cancer, the underlying mechanism is not fully understood. Here, we show that methionyl-tRNA synthetase (MRS) specifically stabilizes CDK4 by enhancing the formation of the complex between CDK4 and a chaperone protein. Knockdown of MRS reduced the CDK4 level, resulting in GO/G1 cell cycle arrest. The effects of MRS on CDK4 stability were more prominent in the tumor suppressor p16^{INK4a}-negative cancer cells because of the competitive relationship of the two proteins for binding to CDK4. Suppression of MRS reduced cell transformation and the tumorigenic ability of a p16^{INK4a}- negative breast cancer cell line *in vivo*.



The Essential Medicinal Chemistry of Curcumin Miniperspective

Kathryn M. Nelson, Jayme L. Dahlin, Jonathan Bisson, James Graham, Guido F. Pauli, and Michael A. Walters

J. Med. Chem., **2017**, 60 (5), pp 1620–1637 **DOI:** 10.1021/acs.jmedchem.6b00975 Publication Date (Web): January 11, 2017 **Abstract:** Curcumin is a constituent (up to ~5%) of the traditional medicine known as turmeric. Interest in the therapeutic use of turmeric and the relative ease of isolation of curcuminoids has led to their extensive investigation. Curcumin has recently been classified as both a PAINS (pan-assay interference compounds) and an IMPS (invalid metabolic panaceas) candidate. The likely false activity of curcumin in vitro and in vivo has resulted in >120 clinical trials of curcuminoids against several diseases. No double-blinded, placebo controlled clinical trial of curcumin has been successful.



Human Milk Oligosaccharides Exhibit Antimicrobial and Antibiofilm Properties against Group B *Streptococcus*

Dorothy L. Ackerman, Ryan S. Doster, Jörn-Hendrik Weitkamp, David M. Aronoff, Jennifer A. Gaddy, and Steven D. Townsend

ACS Infect. Dis., **2017**, 3 (8), pp 595-605 **DOI:** 10.1021/acsinfecdis.7b00064 Publication Date (Web): June 1, 2017



Precision Medicine in Pediatric Neurooncology: A Review

Aaron Y. Mochizuki, Isaura M. Frost, Melina B. Mastrodimos, Ashley S. Plant, Anthony C. Wang, Theodore B. Moore, Robert M. Prins, Paul S. Weiss, and Steven J. Jonas

ACS Chem. Neurosci., **2018**, 9 (1), pp 11–28 **DOI:** 10.1021/acschemneuro.7b00388 Publication Date (Web): December 4, 2017



Biological Monitoring of Inhaled Nanoparticles in Patients: An Appealing Approach To Study Causal Link between Human Respiratory Pathology and Exposure to Nanoparticles

Valérie Forest, Jean-Michel Vergnon, and Jérémie Pourchez

Chem. Res. Toxicol., **2017**, 30 (9), pp 1655–1660 **DOI:** 10.1021/acs.chemrestox.7b00192 Publication Date (Web): August 30, 2017



A Hydrogel-Microsphere Drug Delivery System That Supports Once-Monthly Administration of a GLP-1 Receptor Agonist

Eric L. Schneider, Brian R. Hearn, Samuel J. Pfaff, Ralph Reid, David G. Parkes, Niels Vrang, Gary W. Ashley, and Daniel V. Santi

ACS Chem. Biol., **2017**, 12 (8), pp 2107-2116 **DOI:** 10.1021/acschembio.7b00218 Publication Date (Web): June 12, 2017



Biochemical Basis of Vosevi, a New Treatment for Hepatitis C

Ronald Besandre and Hung-wen Liu

Biochemistry, **2018**, 57 (5), pp 479–480 **DOI:** 10.1021/acs.biochem.7b01157 Publication Date (Web): November 29, 2017



Anti-arrhythmic Medication Propafenone a Potential Drug for Alzheimer's Disease Inhibiting Aggregation of A: In Silico and in Vitro Studies

Son Tung Ngo, Shang-Ting Fang, Shu-Hsiang Huang, Chao-Liang Chou, Pham Dinh Quoc Huy, Mai Suan Li, and Yi-Cheng Chen

J. Chem. Inf. Model., **2016**, 56 (7), pp 1344–1356 **DOI:** 10.1021/acs.jcim.6b00029 Publication Date (Web): June 15, 2016

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Yali Friedman

ACS Med. Chem. Lett., **2017**, 8 (6), pp 589-591 **DOI:** 10.1021/acsmedchemlett.7b00185 Publication Date (Web): May 16, 2017

Engineered CRISPR Systems for Next Generation Gene Therapies

Michael Pineda, Farzaneh Moghadam, Mo R. Ebrahimkhani, and Samira Kiani

ACS Synth. Biol., **2017**, 6 (9), pp 1614–1626 **DOI:** 10.1021/acssynbio.7b00011 Publication Date (Web): May 30, 2017

Predictable Heating and Positive MRI Contrast from a Mesoporous Silica-Coated Iron Oxide Nanoparticle

Katie R. Hurley, Hattie L. Ring, Michael Etheridge, Jinjin Zhang, Zhe Gao, Qi Shao, Nathan D. Klein, Victoria M. Szlag, Connie Chung, Theresa M. Reineke, Michael Garwood, John C. Bischof, and Christy L. Haynes

Mol. Pharmaceutics, **2016**, 13 (7), pp 2172–2183 **DOI:** 10.1021/acs.molpharmaceut.5b00866 Publication Date (Web): March 18, 2016

Transforming Nanomedicines From Lab Scale Production to Novel Clinical Modality

Dalit Landesman-Milo and Dan Peer

Bioconjugate Chem., **2016**, 27 (4), pp 855-862 **DOI:** 10.1021/acs.bioconjchem.5b00607 Publication Date (Web): January 6, 2016

Combinatorial Effects of Curcumin with an Anti-Neoplastic Agent on Head and Neck Squamous Cell Carcinoma Through the Regulation of EGFR-ERK1/2 and Apoptotic Signaling Pathways

Banudevi Sivanantham, Swaminathan Sethuraman, and Uma Maheswari Krishnan*

ACS Comb. Sci., **2016**, 18 (1), pp 22-35 **DOI:** 10.1021/acscombsci.5b00043 Publication Date (Web): October 27, 2015

In Vitro Antibacterial Activity of Curcumin-Polymyxin B Combinations against Multidrug-Resistant Bacteria Associated with Traumatic Wound Infections

Jonathan W. Betts, Amir S. Sharili, Roberto M. La Ragione, and David W. Wareham

J. Nat. Prod., **2016**, 79 (6), pp 1702–1706 **DOI:** 10.1021/acs.jnatprod.6b00286 Publication Date (Web): June 13, 2016

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