University of Central Florida

Technology Available for Licensing

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Polyamines Used for a Variety of Functions

Including: Bioimaging, cancer treatment, and drug delivery

Polyamines are required in many cellular processes of both eukaryotic and prokaryotic cells. Polyamines contribute to regulation of cell proliferation, cell differentiation, and homeostasis, and have been shown to play specific roles in replication, transcription, and translation. Studies have shown that cancer cells up-regulate polyamine transporters thereby taking in drastically more polyamines. This up-regulation is believed to be the mechanism by which motuporamines help to differentiate cancer cells from healthy cells.

Technical Details

Researchers at UCF have synthesized a wide variety of polyamines which may act as motuporamine mimic agents, drug delivery agents, or fluorescent detection devices for cancer. Due to the discovery of cancer cells up-regulated intake of polyamines enabling their rapid growth and division, the system which uptakes these molecules can be taken advantage of for several purposes. By inhibiting the process, cancer cells lose their ability to grow and divide thereby preventing the cancer from metastasizing. Using a fluorescent dye attached to a polyamine a researcher could easily determine the exact size and location of a tumor. Lastly, if a chemotherapeutic drug were attached to the polyamine, the therapy would gain specificity which would reduce negative effects. Interfering and adapting the polyamine system is a novel and unique approach to cancer which has a very promising future.

Looking for Partners

Looking for partners to develop and commercialize this technology.

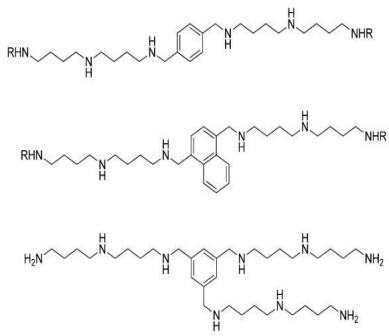
Publications

Aaron Muth, Veethika Pandey, Navneet Kaur, Melissa Wason, Cheryl Baker, Xianlin Han, Teresa R. Johnson, Deborah A. Altomare, and Otto Phanstiel, IV Journal of Medicinal Chemistry 2014, 57 (10), 4023-4034

Aaron Muth, Joseph Kamel, Navneet Kaur, Allyson C. Shicora, Iraimoudi S. Ayene, Susan K. Gilmour, and Otto Phanstiel, IV Journal of Medicinal Chemistry 2014, 56 (14), pp 5819-5828

Patent Application Pub. No.

US 2013/0337494 A1
US 2014/0057989 A1



Benefits

- Specificity for cancer cells
- Simply synthesized
- Multi-functional

Applications

- Detection and treatment of cancer
- Drug delivery

Tech Fields

Research, Bioimaging

Keywords

polyamine, prostate cancer, breast cancer, motuporamine

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US Issued Patents

7,728,041 B1
7,910,363 B1
8,410,311 B1
8,497,398 B1

If you or your company are interested in this opportunity, Contact:

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