



**[Billing Code 4140-01-P]**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**National Institutes of Health**

**Government-Owned Inventions; Availability for Licensing**

**AGENCY:** National Institutes of Health.

**ACTION:** Notice.

**SUMMARY:** Government owned intellectual property covering HIV-1 reverse transcriptase inhibitors available for licensing and commercialization.

**FOR FURTHER INFORMATION CONTACT:** Licensing information and copies of the patent applications listed below may be obtained by emailing the indicated licensing contact at the National Heart, Lung, and Blood, Office of Technology Transfer and Development Office of Technology Transfer, 31 Center Drive Room 4A29, MSC2479, Bethesda, MD 20892-2479; telephone: 301-402-5579. A signed Confidential Disclosure Agreement may be required to receive copies of the patent applications.

**SUPPLEMENTARY INFORMATION:** The inventions listed below are owned by an agency of the U.S. Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 209 and 37 CFR Part 404 to achieve expeditious commercialization of

results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing. A description of the technology available for licensing follows.

## **PYROPHOSPHATE ANALOG HIV-1 REVERSE TRANSCRIPTASE INHIBITORS**

**Description of Technology:** The invention relates to compounds that inhibit HIV-1 DNA synthesis mediated by reverse transcriptase (RT). HIV-1 DNA synthesis by RT utilizes deoxynucleoside 5'-triphosphate (dNTP) as substrate and like many other enzymes, the reaction is reversible. Pyrophosphate analogs like imidodiphosphate strongly promote reverse reaction dNTP products containing the imidodiphosphate group instead of the naturally occurring pyrophosphate group. This imidodiphosphate - containing dNTP was found to be a potent inhibitor of the forward RT reaction. Whereas pyrophosphorolysis is limited by a nonchemical step, replacing the bridging oxygen of pyrophosphate with an imido group resulted in a change in the rate-limiting step, so that the imidodiphosphate -dependent reverse reaction was limited by chemistry. There exists, then, the potential to use pyrophosphate analogs therapeutically.

### **Potential Commercial Applications:**

- Anti-microbial
- HIV therapeutic

### **Development Stage:**

- In vitro data available

**Inventors:** Samuel Wilson, William Beard, David Dion Shock (all of NIEHS)

**Intellectual Property:** HHS Reference No. E-210-2017/0-US-01

- U.S. Provisional Patent Application 62/542,600 filed August 8, 2017.

**Licensing Contact:** Michael Shmilovich, Esq, CLP; 301-435-5019;

shmilovm@nih.gov

**Collaborative Research Opportunity:** The National Institute of Environmental Health Sciences seeks statements of capability or interest from parties interested in collaborative research to further develop and evaluate, please contact Sally E. Tilotta, PhD, Director, Office of Technology Transfer, National Institute of Environmental Health Sciences, Phone: (919) 316-4526; sally.tilotta@nih.gov.

Dated: September 7, 2017.

---

Michael Shmilovich

Senior Licensing and Patenting Manager

National Heart, Lung, and Blood Institute,

Office of Technology Transfer and Development

[FR Doc. 2017-19315 Filed: 9/12/2017 8:45 am; Publication Date: 9/13/2017]