**SUMMARY:** Government owned intellectual property covering imaging agents with improved renal clearance 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.

**SUPPORTING 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.

**Methods of Using Inhibitors To Enhance Therapeutic Uses of Endocannabinoids**

Description of Technology: The invention pertains to methods of using compounds that inhibit fatty acid amide hydrolase (FAAH) enzymes that are responsible for the degradation of oleamide and anandamide. Inhibition of degradation can be used as treatment modality for hypertension and for sleep disorders. The issued patent lists potentially useful compounds, one such useful compound in particular is...
**Potential Commercial Applications:**
- Therapeutics for hypertension
- Therapeutics for anxiety disorders
- Therapeutics for sleep disorders

**Development Stage:**
- In vivo data available

**Inventors:** George Kunos and Alexandros Makriyannis (both of NIAAA)


**Licensing Contact:** Michael Shmilovich, Esq. CLP; 301–435–5019; shmilovich@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 Peg Koeble, Office of Technology Transfer, National Heart, Lung and Blood Institute, koeblep@nhlbi.nih.gov, 301–594–4095.


Michael Shmilovich,
Senior Licensing and Patenting Manager,
National Heart, Lung, and Blood Institute,
Office of Technology Transfer and Development.

**Description of Technology:**
Millions of people are infected with HIV-1 worldwide. In the U.S., there are about 30,000 new cases of HIV infection reported annually. Currently, there are effective, anti-retroviral therapeutics available to treat or prevent HIV infection. However, available anti-retroviral therapeutics require life-long administration.

During infection, proteases of the host cell cleave gp160 into gp120 and gp41. Gp41 is an integral membrane protein, while gp120 protrudes from the mature virus. Together gp120 and gp41 aggregate as trimers that make up the HIV-1 envelope (“Env”) spike, which is a target for neutralizing antibodies.

NIAID researchers have constructed a recombinant HIV-1 trimer immunogen. In particular, the recombinant gp120 protein in the trimer is stabilized in a closed conformation, preventing it from binding to CD4. The advantage of the closed conformation is that it can stabilize the epitopes that bind to broadly neutralizing antibodies, minimize the binding of gp120 with weakly or non-neutralizing antibodies, and prevent conformational changes induced by CD4 as well as immunogen sequestration by CD4 in vivo. Research has also indicated that recombinant Env ectodomain trimers can induce higher neutralizing antibody titers than wild type Env trimers in animal models.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

**Potential Commercial Applications:**
- HIV-1 immunogen
- New methods for isolating broadly neutralizing antibodies

**Competitive Advantages:**
- A new strategy in inducing immune response against HIV-1

**Development Stage:**
- Pre-Clinical; Proof-of-concept studies in nonhuman primate models

**Inventors:**
- Paolo Lusso, NIAID, NIH
- Peng Zhang, NIAID, NIH

**Publications:** Pending

**Intellectual Property:** HHS Reference No. E–102–2016/0—PCT Application

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**National Institutes of Health**

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

**AGENCY:** National Institutes of Health, HHS.

**ACTION:** Notice.

**SUMMARY:** The inventions listed below are owned by an agency of the U.S. Government and are available for licensing 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.

**FOR FURTHER INFORMATION CONTACT:**
Chris Kornak, 240–627–3705, chris.kornak@nih.gov. Licensing information and copies of the U.S. patent applications listed below may be obtained by communicating with the indicated licensing contact at the Technology Transfer and Intellectual Property Office (TTIPO), 5601 Fishers Lane, Suite 6D, MSC 9804, Rockville, MD 20892, tel: 301–496–2644, fax: 240–627–3117. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished patent applications.

**SUPPLEMENTARY INFORMATION:**
Technology description follows.

**Recombinant HIV-1 Envelope Proteins and Their Use**

**Description of Technology:**
Millions of people are infected with HIV-1 worldwide. In the U.S., there are about 30,000 new cases of HIV infection reported annually. Currently, there are effective, anti-retroviral therapeutics available to treat or prevent HIV infection. However, available anti-retroviral therapeutics require life-long administration.

During infection, proteases of the host cell cleave gp160 into gp120 and gp41. Gp41 is an integral membrane protein, while gp120 protrudes from the mature virus. Together gp120 and gp41 aggregate as trimers that make up the HIV-1 envelope (“Env”) spike, which is a target for neutralizing antibodies. NIAID researchers have constructed a recombinant HIV-1 trimer immunogen. In particular, the recombinant gp120 protein in the trimer is stabilized in a closed conformation, preventing it from binding to CD4. The advantage of the closed conformation is that it can stabilize the epitopes that bind to broadly neutralizing antibodies, minimize the binding of gp120 with weakly or non-neutralizing antibodies, and prevent conformational changes induced by CD4 as well as immunogen sequestration by CD4 in vivo. Research has also indicated that recombinant Env ectodomain trimers can induce higher neutralizing antibody titers than wild type Env trimers in animal models.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

**Potential Commercial Applications:**
- HIV-1 immunogen
- New methods for isolating broadly neutralizing antibodies

**Competitive Advantages:**
- A new strategy in inducing immune response against HIV-1

**Development Stage:**
- Pre-Clinical; Proof-of-concept studies in nonhuman primate models

**Inventors:**
- Paolo Lusso, NIAID, NIH
- Peng Zhang, NIAID, NIH

**Publications:** Pending

**Intellectual Property:** HHS Reference No. E–102–2016/0—PCT Application


**Licensing Contact:** Chris Kornak, 240–627–3705, chris.kornak@nih.gov.

**Collaborative Research Opportunity:**
The Technology Transfer and Intellectual Property Office (TTIPO) is seeking parties interested in collaborative research to further develop the technology. In particular, NIAID is interested in partnerships utilizing vector vaccine platforms for expressing these immunogens.

However, NIAID is willing to discuss other applications of this technology. For collaboration opportunities, please contact Chris Kornak, 240–627–3705, chris.kornak@nih.gov.


Suzanne Frishie,
Deputy Director, Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases.