



**[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 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.

**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.

### **EVANS BLUE DYE DERIVATIVES FOR SERUM ALBUMIN LABELING**

**Description of Technology:** The invention is an imaging agent and method of its use for imaging blood pools and the lymphatic system. The imaging agent binds with high affinity to serum albumin, the most abundant serum protein, and can be tagged with several isotopes making it suitable for magnetic resonance imaging or positron emission tomographic imaging. To date, only very few blood-pool tracers have been introduced for positron emission tomography. The existing ones have short half-lives (20.4 min for  $^{11}\text{C}$  and 2.05 min for  $^{15}\text{O}$ ) and thus can only be used in centers with an in-house cyclotron. Compared with these radiometals,  $^{18}\text{F}$  has the advantages of being a pure positron emitter with ideal half-life. It is the dominant radioisotope used for PET imaging for both clinical applications and preclinical investigations. Evans blue dye has been an important tool in many physiological and clinical investigations because of its high affinity for plasma albumin and has been used for a long time in clinical practice for determination of patient plasma volume. The current imaging agent is a truncated form of EB [NEB]) and has the ability to bind albumin with high affinity. The agent is also conjugated to NOTA to enable in vivo labeling with  $^{18}\text{F}$  labeling by the formation of  $^{18}\text{F}$ -aluminum fluoride complex. The NOTA also facilitates radiometal labeling of NEB with either  $^{68}\text{Ga}$  or  $^{64}\text{Cu}$ . The resulting imaging agent does not affect the in vivo behavior of serum albumin such as circulation, extra-vascularization, and turn-over; thus the imaging results will reflect the distribution and metabolism of serum albumin accurately.

**Potential Commercial Applications:**

- Blood pool imaging
- Lymphatic system imaging

**Development Stage:**

- In vivo data available

**Inventors:** Xiaoyuan Chen, Lixin Lang, Gang Niu (all of NIBIB)

**Intellectual Property:** HHS Reference No. E-099-2015/0–US-01 and /0-US-02

- U.S. Patent Applications 14/675,364 filed March 31, 2015 and 15/587,948 filed May 5, 2017.

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**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 Cecilia Pazman, Office of Technology Transfer, National Heart, Lung and Blood Institute, pazmance@nhlbi.nih.gov, 301-594-4273.

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