Exhibit 5

US007622443B2

(12) **United States Patent**
Anderson et al.

(10) **Patent No.: US 7,622,443 B2**
(45) **Date of Patent: *Nov. 24, 2009**

(54) **METHOD FOR INHIBITING PRO-ANGIOGENIC ACTIVITIES OF ENDOTHELIAL CELLS SELECTIVELY AT A SITE OF NEOANGIOGENESIS IN A MAMMAL BY ADMINISTRATION OF THE EXTRACELLULAR DOMAIN OF D1-1 POLYPEPTIDES**

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(73) Assignee: **California Institute of Technology**, Pasadena, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 55 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/437,755**

(22) Filed: **May 18, 2006**

(65) **Prior Publication Data**

US 2007/0082000 A1 Apr. 12, 2007

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/424,986, filed on Apr. 28, 2003, now Pat. No. 7,538,088.

(60) Provisional application No. 60/375,904, filed on Apr. 26, 2002, provisional application No. 60/682,542, filed on May 18, 2005.

(51) **Int. Cl.**

A61K 38/17	(2006.01)
C07K 14/47	(2006.01)
C07K 14/515	(2006.01)

(52) **U.S. Cl.** **514/12**; 530/300; 530/324

(58) **Field of Classification Search** ..... None
See application file for complete search history.

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(57) **ABSTRACT**

The disclosure provides, among other things, novel angiogenesis-related nucleic acids, polypeptides and methods of use.

5 Claims, 17 Drawing Sheets

Human D1-1 Polypeptides

A. Full-length sequence (SEQ ID NO:10)

```
MGTAGAMQLCWVILGFLLFRGHNSQPTMTQTSSSQGGLGGLSLTTEPVSS 50
NPGYIPSSEANRPSHLSSTGTPGAGVPSSGRDGGTSRDTFQTVPPNSTTM 100
SLSMREDATILPSPTSETVLTVAAPGVISFIVILVVVVIILVGVVSLRFK 150
CRKSKESEDPQKPGSSGLSESCSTANGEKDSITLISMKNINMNNGKQSLS 200
AEKVL 205
```

B. Extracellular portion (SEQ ID NO:11)

```
QPTMTQTSSSQGGLGGLSLTTEPVSSNPGYIPSSEANRPSHLSSTGTPGA
GVPSSGRDGGTSRDTFQTVPPNSTTMSLSMREDATILPSPTSETVLT
```

C. Conserved portion (SEQ ID NO:12)

```
VAAPGVISFIVILVVVVIILVGVVSLRFKCRKSKESEDPQKPGSSGLSES
```

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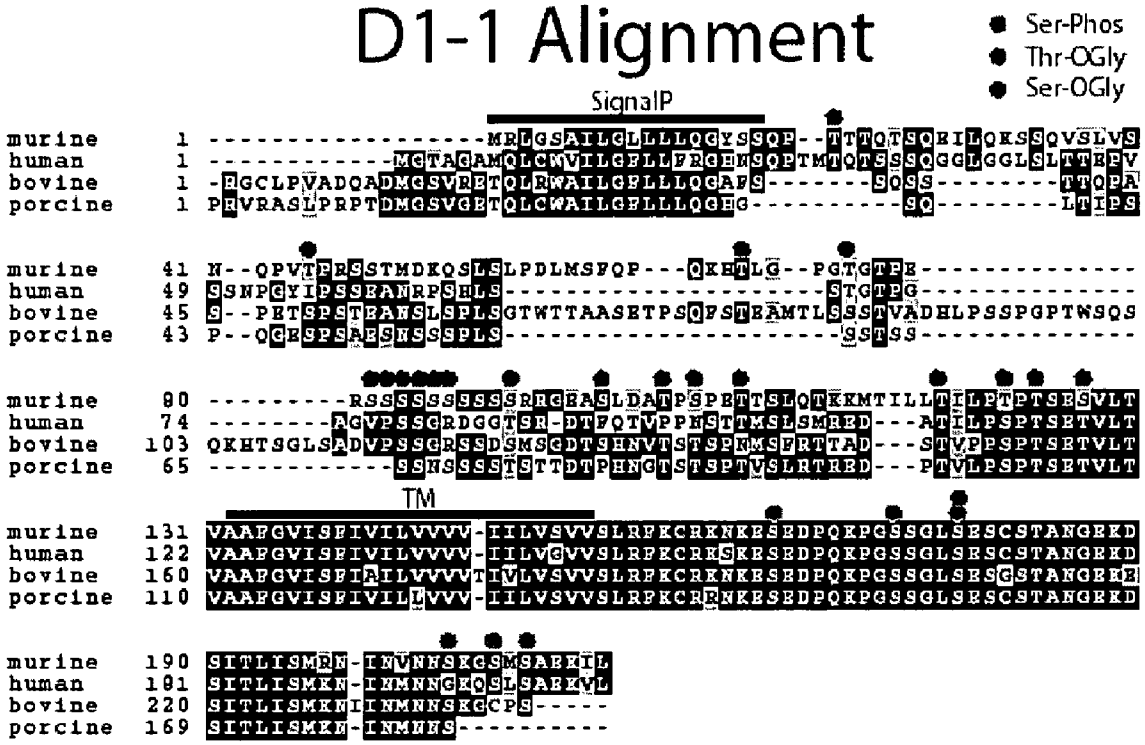

Figure 1

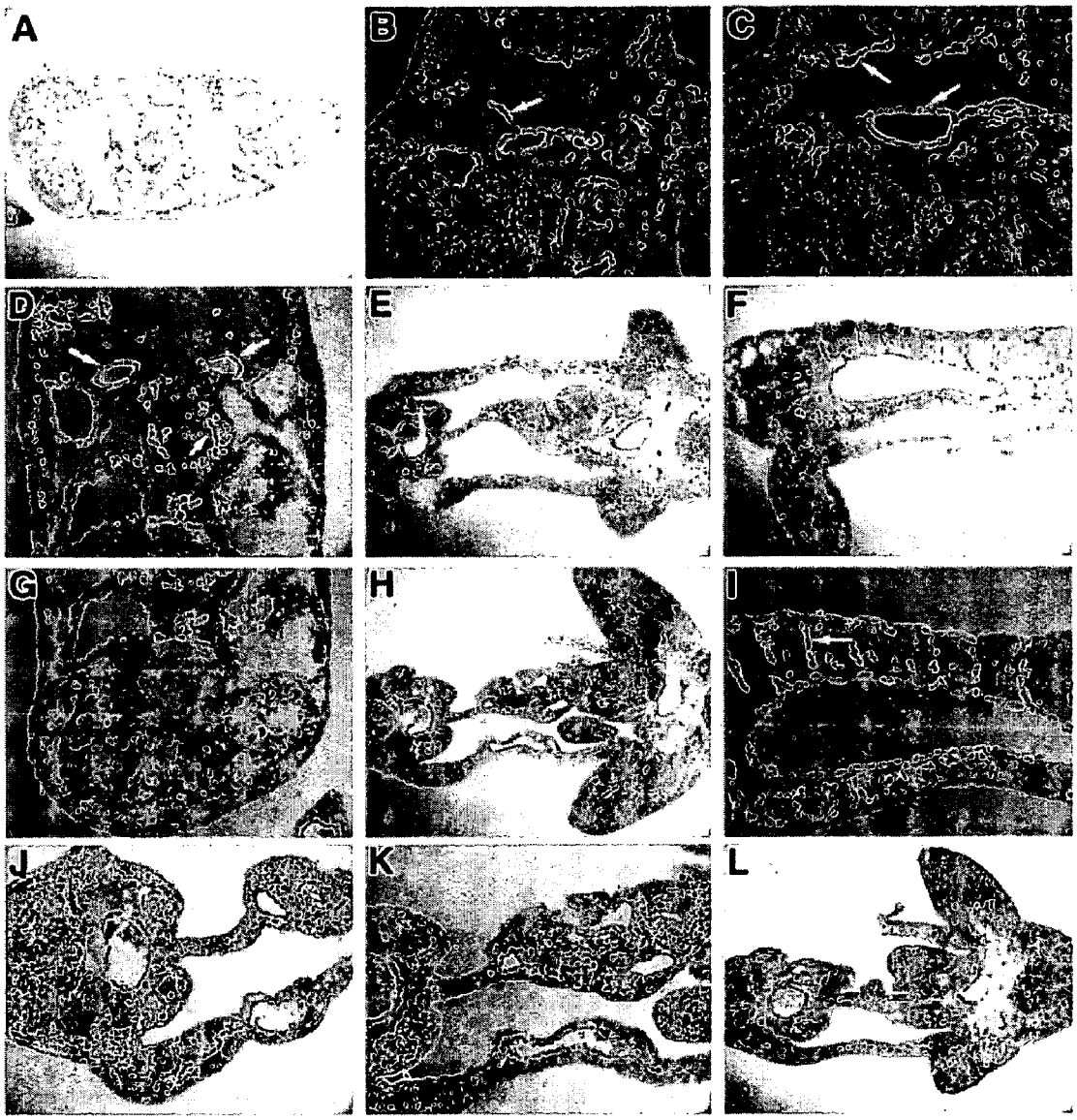

Figure 2

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