



United States Patent [19]

[11] **Patent Number:** **6,043,344**

Jacobs et al.

[45] **Date of Patent:** **Mar. 28, 2000**

[54] **HUMAN CTLA-8 AND USES OF CTLA-8-RELATED PROTEINS**

[51] **Int. Cl.⁷** **C07K 14/54**

[52] **U.S. Cl.** **530/351; 530/350; 424/85.1**

[58] **Field of Search** **530/351, 350; 424/85.1**

[75] Inventors: **Kenneth Jacobs**, Newton; **Kerry Kelleher**, Marlborough; **McKeough Carlin**, Cambridge; **Samuel Goldman**, Acton, all of Mass.; **Debra Pittman**, Windham, N.H.; **Sha Mi**, Belmont, Mass.; **Steven Neben**; **Joanne Giannotti**, both of Acton, Mass.; **Margaret M. Golden-Fleet**, Medford, Mass.

[56] **References Cited**

FOREIGN PATENT DOCUMENTS

9518826 7/1995 WIPO .

OTHER PUBLICATIONS

Rouvier et al, *J. Immunol*, 150, 1993, p. 5445–556.

Yao et al., *J. Immunol* 155 (12) 1995, p. 5483–486.

Nicholas et al., *Virology* 179, 1990, p. 189–200.

Primary Examiner—Garnette D. Draper

Attorney, Agent, or Firm—Lahive & Cockfield, LLP; Amy E. Mandragouras, Esq.; Peter C. Lauro, Esq.

[73] Assignee: **Genetics Institute, Inc.**, Cambridge, Mass.

[57] **ABSTRACT**

Polynucleotides encoding human CTLA-8 and related proteins are disclosed. Human CTLA-8 proteins and methods for their production are also disclosed. Methods of treatment using human CTLA-8 proteins, rat CTLA-8 proteins and herpesvirus herpes CTLA-8 proteins are also provided.

[21] Appl. No.: **09/034,810**

[22] Filed: **Mar. 4, 1998**

13 Claims, 7 Drawing Sheets

Related U.S. Application Data

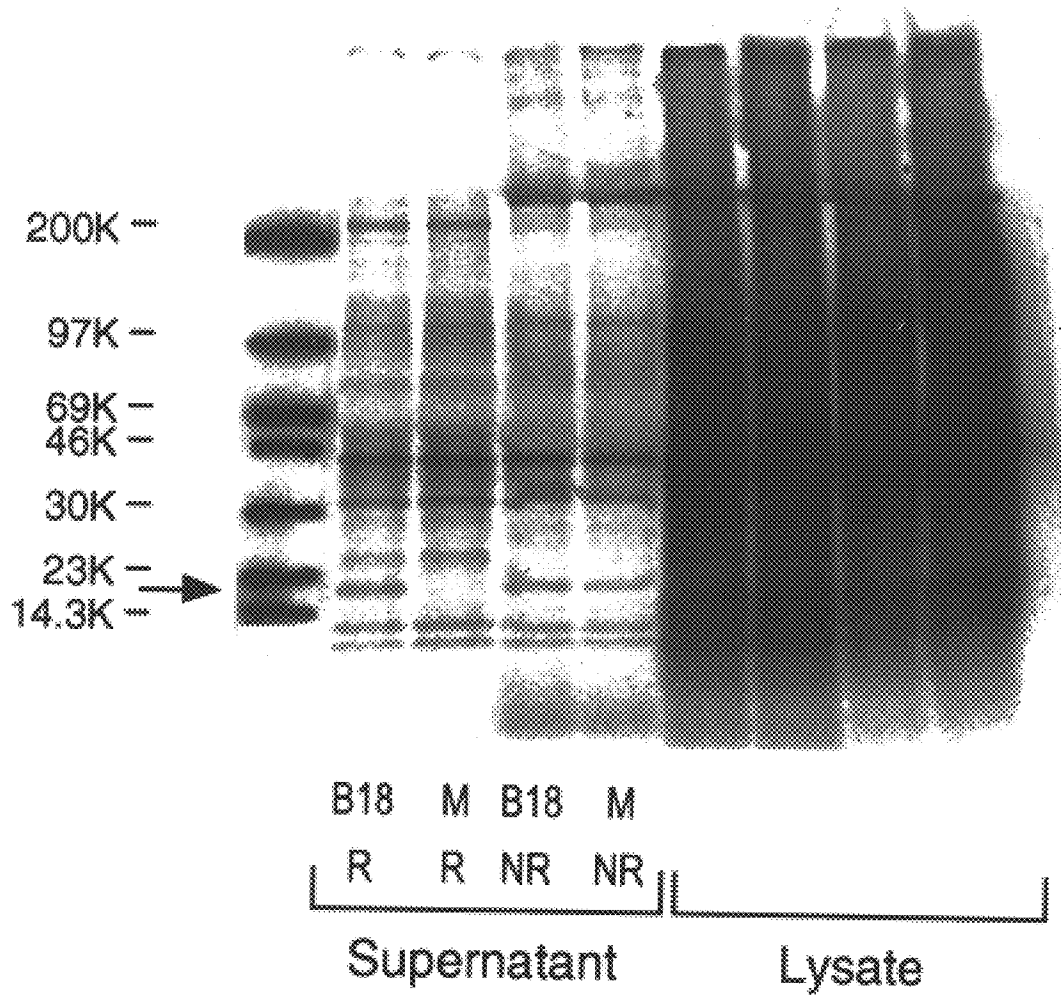
[60] Division of application No. 08/685,239, Jul. 18, 1996, abandoned, which is a continuation-in-part of application No. 08/504,032, Jul. 19, 1995, which is a continuation-in-part of application No. 08/514,014, Aug. 11, 1995, Pat. No. 5,707,829

[60] Provisional application No. 60/035,347, Jul. 19, 1995.

| | | |
|----------|---|-------|
| Hsvie_2 | - - - - I V K S E I T T S A Q - T P R C L - A A N N S F P R S V M V T L S I R N - - - W N T S S K R R A S D Y Y N R S T S P | 5 1 |
| Musctla8 | - - - - - A V L I P Q - S S V C P N A E A N N F L Q N V K V N L K V I N S L S S K A S S R R P S D Y L L N R S T S P | 5 1 |
| B18_F1 | A A R K I P K V G H T F F Q K P E S C P P V P G G - - - - S M K L D I G I I N E N Q R V S M S R - - - N I E S R S T S P | 5 3 |
| Hsvie_2 | W T L H R N E D Q D R Y P S V I W E A K C R Y L G C V N A D G N C D Y H M N S V P I Q Q E I L V V E K G H Q P C P N S F | 1 1 1 |
| Musctla8 | W T L S R N E D P D R Y P S V I W E A Q C R H Q R C V N A E G K L D H H M N S V L I Q Q E I L V L K R E P E K C P F T F | 1 1 1 |
| B18_F1 | W N Y T V T W D P N R Y P S E V V Q A Q C R N L G C I N A Q G K E D I S M N S V P I Q Q E T L V V R R K H Q G C S V S F | 1 1 3 |
| Hsvie_2 | R L E K M L V T V G C T C V T P I V H N V D | 1 3 3 |
| Musctla8 | R V E K M L V G V G C T C V S S I V R H A S | 1 3 3 |
| B18_F1 | Q L E K V L V T V G C T C V T P V I H H V Q | 1 3 5 |

Fig. 1

Figure 2



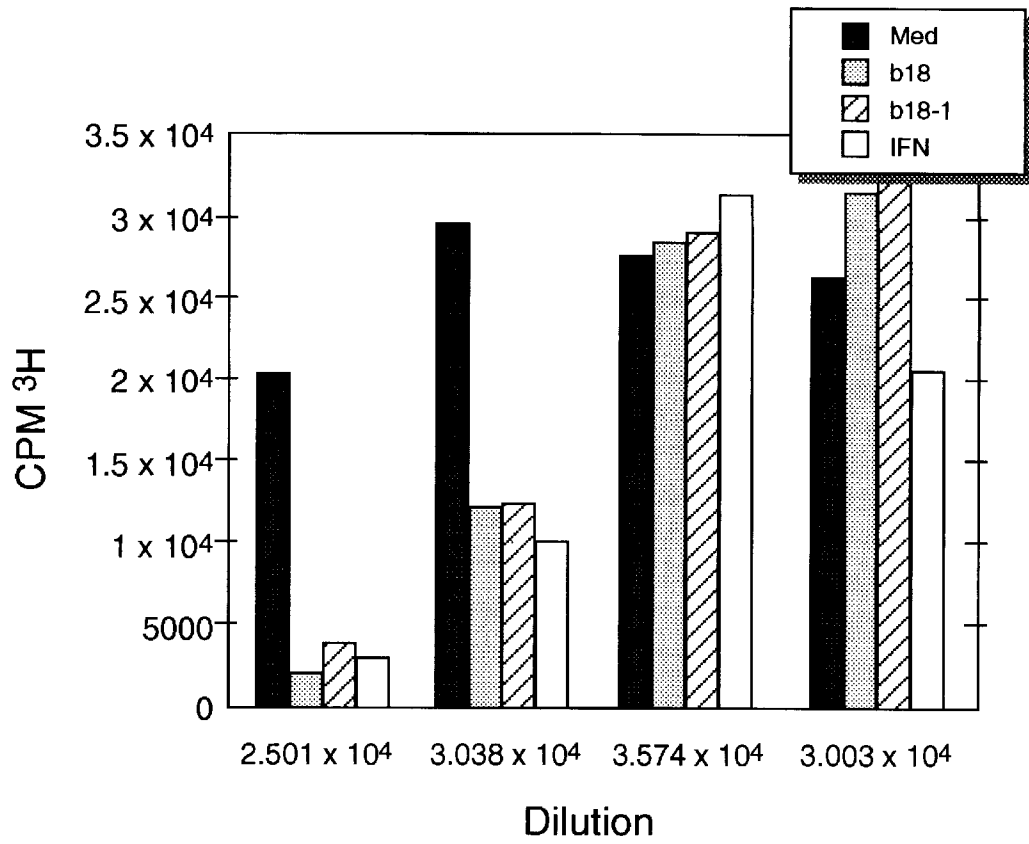
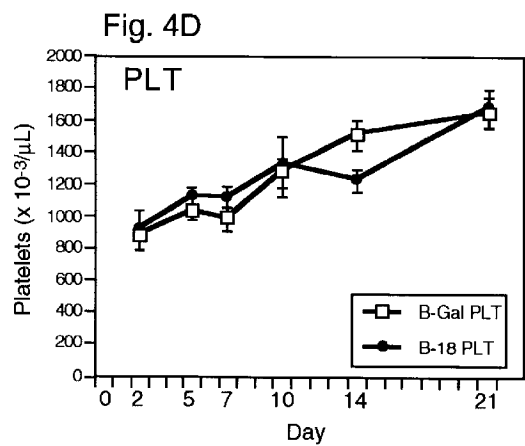
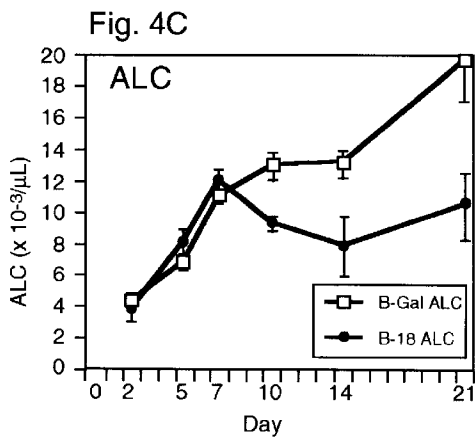
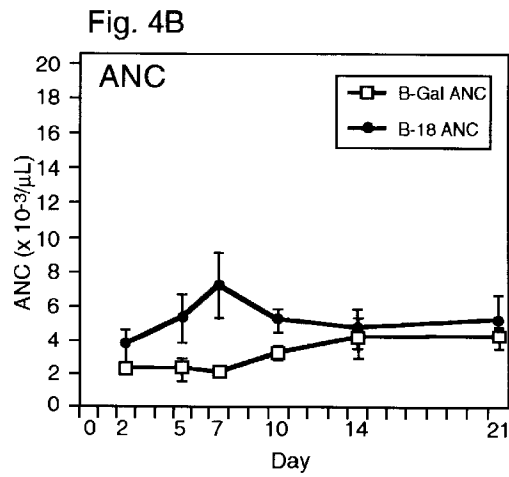
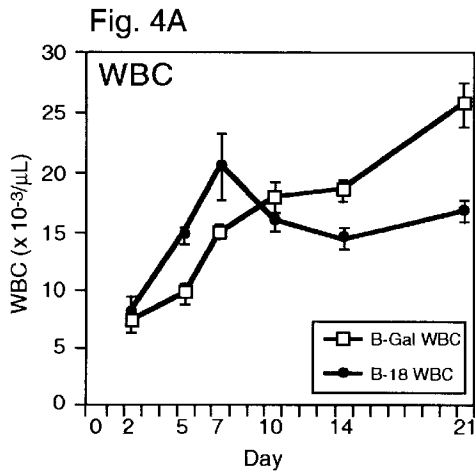


Fig. 3



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.