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(54) **INHIBITORS OF BRUTON'S TYROSINE KINASE**

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(57) **ABSTRACT**

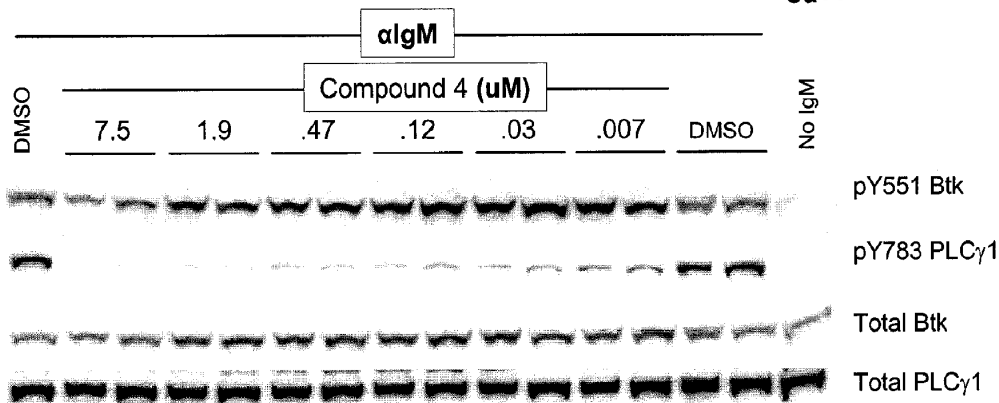
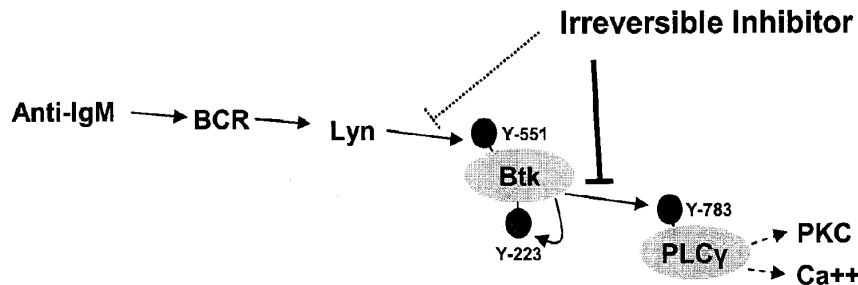
Disclosed herein are compounds that form covalent bonds with Bruton's tyrosine kinase (Btk). Also described are irreversible inhibitors of Btk. Methods for the preparation of the compounds are disclosed. Also disclosed are pharmaceutical compositions that include the compounds. Methods of using the Btk inhibitors are disclosed, alone or in combination with other therapeutic agents, for the treatment of autoimmune diseases or conditions, heteroimmune diseases or conditions, cancer, including lymphoma, and inflammatory diseases or conditions.

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Related U.S. Application Data

(63) Continuation-in-part of application No. 11/692,870, filed on Mar. 28, 2007, which is a continuation-in-part of application No. 11/617,645, filed on Dec. 28, 2006.



#	473	474	475	476	477	478	479	480	481	482	483
BTK	I	T	E	Y	M	A	N	G	C	L	L
BMX	V	T	E	Y	M	A	R	G	C	L	L
TEC	V	T	E	F	M	E	R	G	C	L	L
TXK	V	T	E	F	M	E	N	G	C	L	L
ITK	V	F	E	F	M	E	H	G	C	L	S
EGFR	I	T	Q	L	M	P	F	G	C	L	L
ErbB2	V	T	Q	L	M	P	Y	G	C	L	L
ErbB4	V	T	Q	L	M	P	H	G	C	L	L
JAK3	V	M	E	Y	L	P	S	G	C	L	R
BLK	V	T	E	Y	L	P	S	G	C	L	L
LCK	I	T	E	Y	M	E	N	G	S	L	V
LYN	I	T	E	Y	M	A	K	G	S	L	L
SYK	V	M	E	M	A	E	L	G	P	L	N

Fig. 1

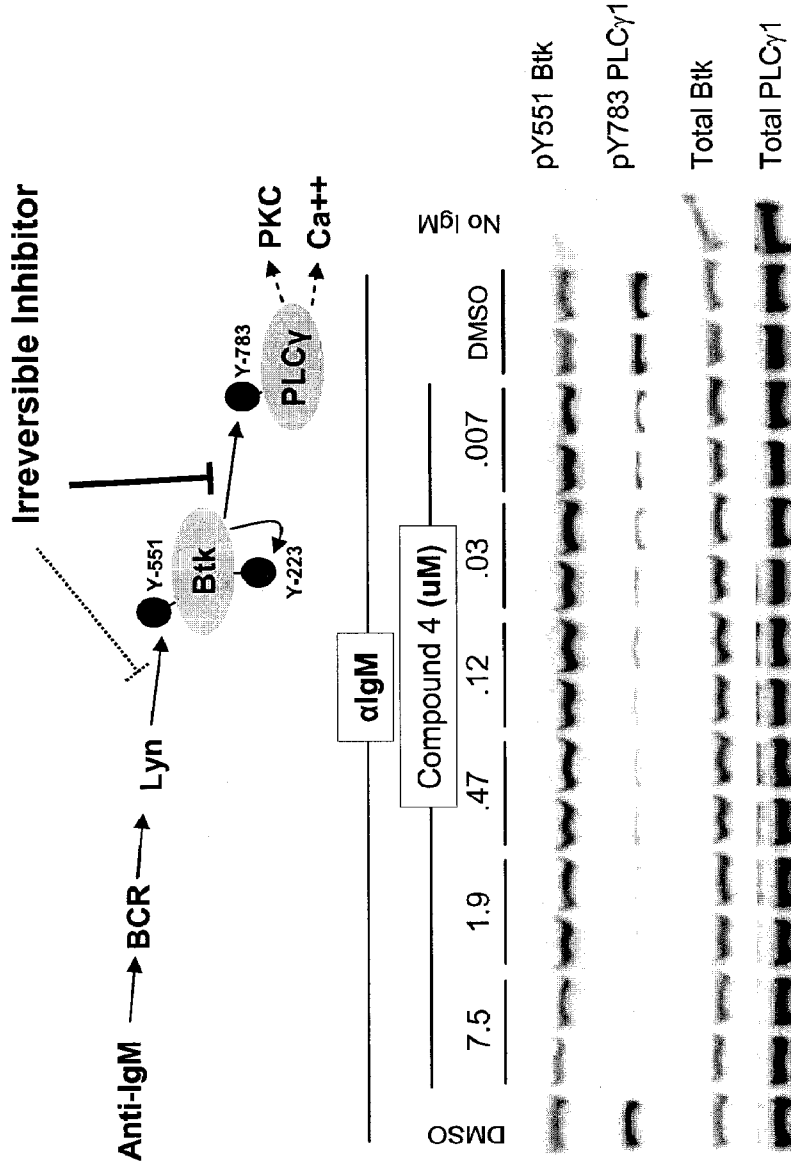
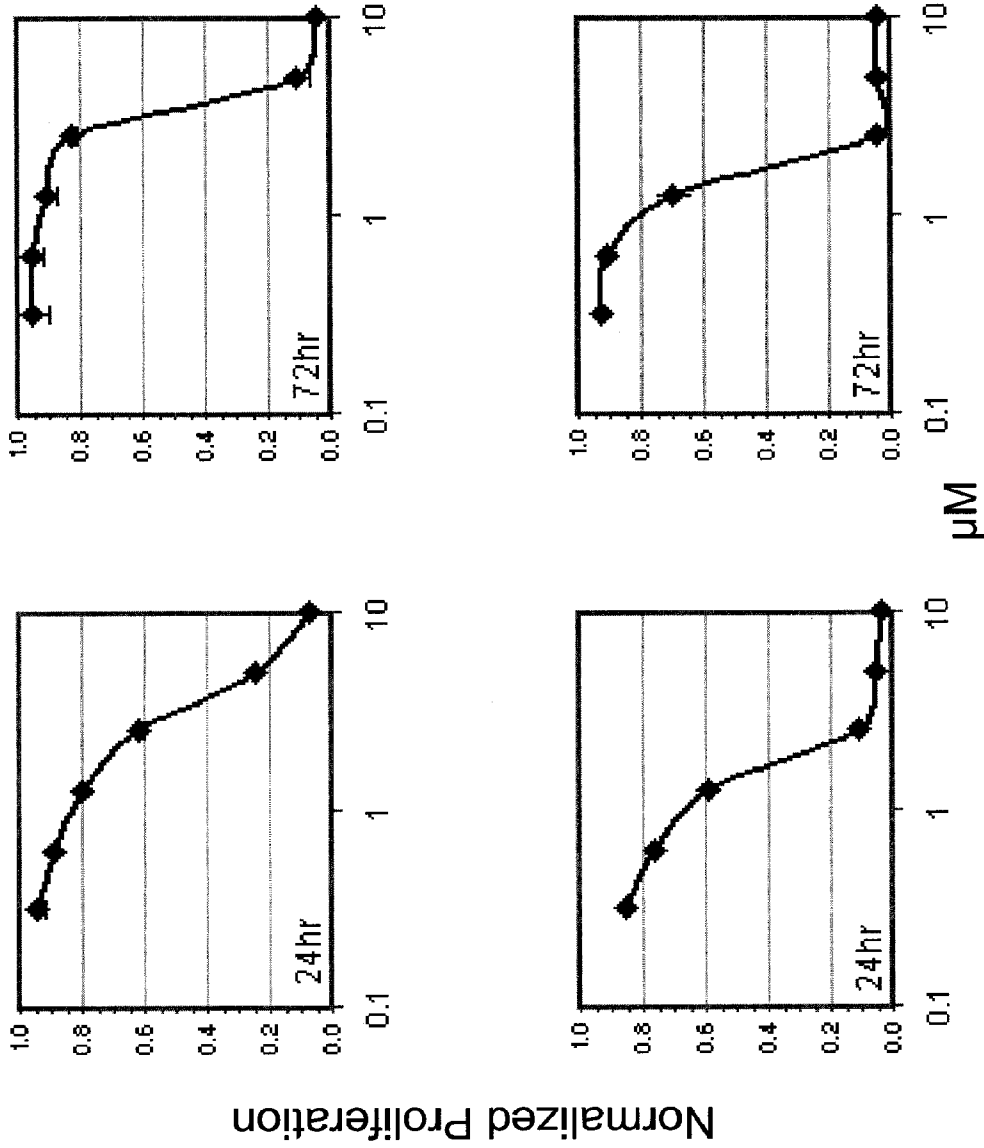


Fig. 2

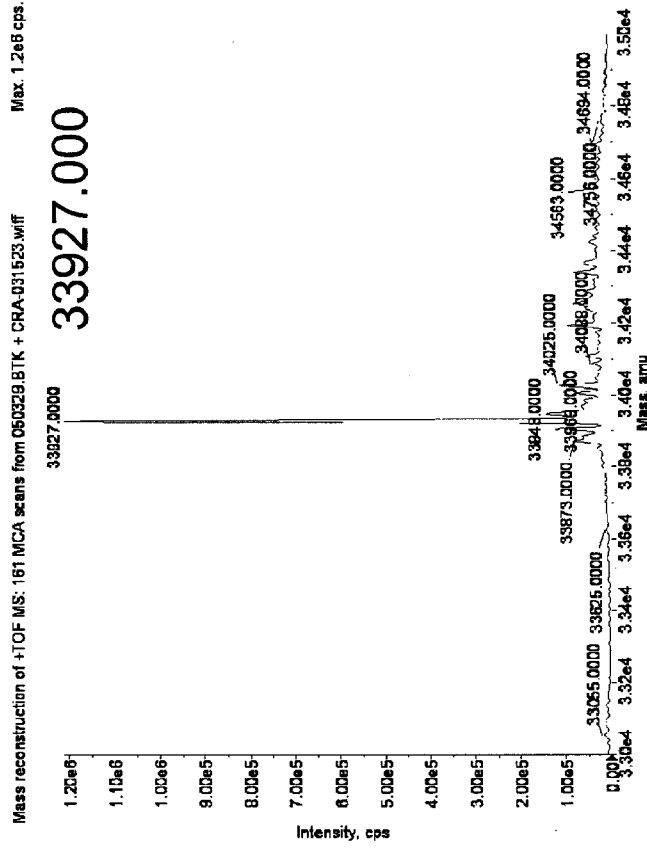


Compound 4

Compound 15

Fig. 3

Btk + Compound 4 (MW=441)



Btk + DMSO

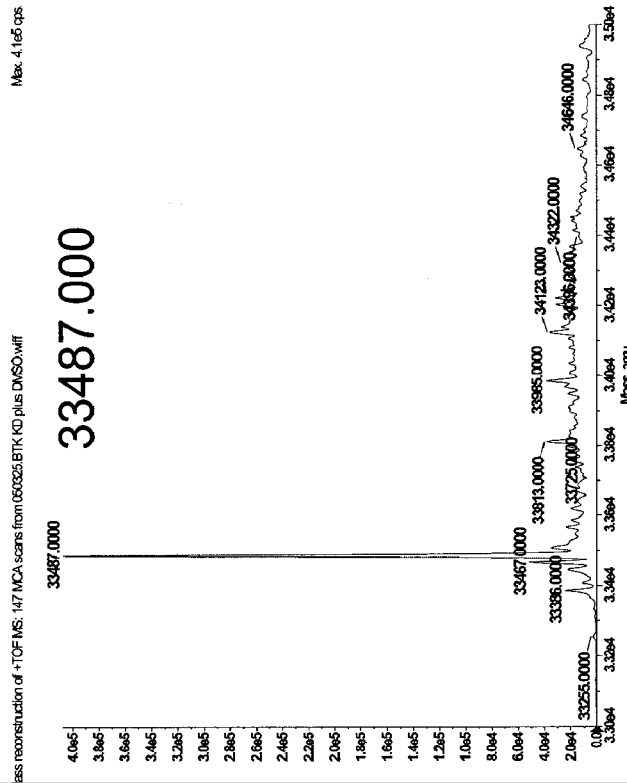


Fig. 4

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